

Bamboo Craft Development Strategy in the Industrial Era 4.0 Towards Society 5.0 Gintangan Village

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ABSTRACT

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The creative economy sub-sector contributed Rp. 1,153.4 trillion or to the total National GDP, 15.2% of the workforce, and 11.9% of exports (Kominfo, 2022). One of the villages that has a creative industry is Gintangan Village. The majority of Gintangan Village residents have a livelihood, namely, craftsmen. Many people work as craftsmen to fulfill their daily needs. However, bamboo handicraft centers are currently considered to still use conventional business so the management and organization are not well organized. This research aims to formulate a development strategy for the Industrial Revolution 4.0 towards Society 5.0. This research uses Ministry of Industry indicators namely, 1) management and organization; 2) people and culture; 3) products and services; 4) technology; and 5) factory operations. This research method uses descriptive qualitative with SWOT analysis. The results of this study indicate that the potential of the bamboo handicraft industry includes fine fiber bamboo, strategic location, adequate human resources, a wide variety of bamboo handicrafts, bamboo handicraft tourism villages, good handicraft branding, and professional staff. The highest strength factor is being a Tourism Village in the field of bamboo handicrafts and the main weakness factor is the lack of knowledge of digital technology marketing. The highest opportunity factor is the support of mass media promotion and the main threat factor is uncertain global dynamics and the lack of public awareness of the importance of technology application.



Introduction

Economic growth is an effort to increase production capacity which is realized in the form of increasing national opinion (Herawaty & Raharja, 2018). Work programs from the government are often related to economic growth because they can increase national income and increase the competitiveness of the production of the Indonesian people (Deguchi et al., 2020). The main factors in economic growth are related to the quantity and quality of labor, natural resources, land, capital goods, the level of

technology used, the social system, and the attitude of the community. In the current era, which is full of uncertainties such as global outbreaks, world political stability, and the issue of climate change, people are forced to continue to improve. One of the things that is always highlighted is economic growth (Ratnawati, 2020). A strong nation has strong economies such as America, Japan, and Korea. It is important to continue to make breakthroughs in growing the community's economy. One of the main factors for economic growth is the quality of labor and the application of technology (Arifianto & Himawan, 2018).

The quality of labor and the application of technology are two related things. The reason is, currently is an era of rapidly developing technology. Without being accompanied by the quality of human resources or the quality of a qualified workforce (Rofaida et al., 2019). The speed at which technology is sophisticated sounds futile or not beneficial to society. With this, Japan offers a concept where humans can coexist with technology. In 2019, former Prime Minister Shinzo Abe formulated a concept of Society 5.0 that allows humans to utilize technology to solve various social problems. (Saniuk et al., 2022). The simple language is to humanize humans with technology. The concept is called Society 5.0. Before Society 5.0, Germany initiated the concept of the Industrial Revolution 4.0 where many aspects of human life have shifted to the digital world. From the two definitions above, this study aims to make the strategy simpler because the two concepts have the same goal of increasing economic growth. The difference is that the Industrial Revolution 4.0 carries technology as the main player. Meanwhile, Society 5.0 carries intelligent humans in using technology. Society 5.0 was created so that the element of human conscience remains in touch in the era of the onslaught of technological developments. (Sopanah et al., 2018).

Efforts to increase economic growth have many formulas. It can be achieved with various strategies. After looking at the concept in the outside world, the economic sectors that are currently being highlighted a lot are the tourism and creative economy sectors. The creative economy can be said to be in the tourism sector because it supports tourism and provides various creative industries in it. According to the 2020 Creative Economy Opus data, the creative economy subsector contributes to Gross Domestic Income or national opinion worth Rp. 1,211 trillion. This achievement brings Indonesia to third place. Indonesia is superior in absorbing 17 million workers. (Setiadi et al., 2021). This number is much higher than the number in the United States reaching 4.7 million workers. One example of tourism development is Bali. The rapid development of tourism in Bali has encouraged the emergence of the creative industry. Tourism supports the growth of the creative economy as a multiplier effect and encourages the agriculture, tourism, and tourism-supporting services sectors (BPS Bali, 2019).

The tourism sector is considered to be a driver of economic growth. According to (Wijaya & Handoko, 2021), several business sectors can collaborate to accelerate tourism, including the agricultural sector, the construction sector, and the education services sector. Based on the 2010-2018 Banyuwangi GDP, two business fields have a percentage increase from year to year. First, trade, hotels, and restaurants in 2010 were

worth 13.01% and in 2018 were worth 16.08%. Second, accommodation and food providers in 2010 were worth 2.05% and in 2018 were worth 2.80% (Santosa et al., 2020).

Banyuwangi Regency is famous for its beautiful tourism sector. Various awards have been won by Banyuwangi, one of which is the East Java Tourism Event. In 2016, Banyuwangi Regency signed a memorandum of understanding on cooperation in the development of village-based creative industries. Bekraf assists with a pilot project, including Gintangan Village, Tamansari Village, and Sumberbuluh Village. This indicates that Banyuwangi Regency has the potential for a creative industry to be developed professionally. In 2022, Banyuwangi Regency has again held the Innovative Government Award since 2018. These innovations include innovations from the MSME sector, tourism, education, to health. The Banyuwangi Regency Government strongly supports creative economy activities and the tourism sector. This can be seen from the various awards held for the innovations that have been made.

Gintangan Village is one of the bamboo centers in Banyuwangi Regency. Gintangan bamboo crafts are a hereditary heritage from ancestors. Starting from the manufacture of household utensils such as Erik, tenong, and welasah. Then, various craft innovations began to vary. There are those with nuances of traditional crafts without glue and modern bamboo crafts whose materials are not only bamboo such as lamp holders, handovers, songkok, and so on. The characteristic of gintangan bamboo is that the bamboo fibers are smoother. The livelihood of the people of Gintangan Village is mostly farmers and craftsmen. Several bamboo craft centers are a driving force for housewives to do work to fill their free time. Various ages, young people, teenagers, adults, and the elderly know how to weave so that they can increase their skills and encourage the economy of the residents.

The underlying problem for artisans in Gintangan Village is labor. The labor force of bamboo craftsmen is dominated by men and women who have limited education and abilities so they are constrained to produce new products (Umrah, 2019). On the other hand, the problem of regeneration of craftsmen can be possible because young people are more likely to like making only one craft product. After all, it is considered simple and easy (the results of interviews with bamboo craft actors). Based on BPS Banyuwangi data, there is an increase and decrease in the number of bamboo handicraft industries from year to year. Bamboo crafts are a labor-intensive industry. The artisan workforce needs to be developed at a more advanced level to form a sustainable economy.

Most Gintangan bamboo craftsmen still use conventional businesses where the business is still simple. In terms of people and culture, Gintangan bamboo craftsmen have not collaborated well with groups of craftsmen. In terms of management and organization, production work is centered on one person so marketing and finance fulfillment have not been systematic. In terms of products and services, Gintangan bamboo craftsmen are unique in the level of fineness of bamboo and the variety of bamboo crafts. In terms of technology, bamboo craftsmen still use their hands as the main tool and use tools such as drills, glue, and bamboo cutters to support production. In terms of factory operations, bamboo craftsmen make to order. With the description of the conditions above, the

researcher intends to formulate a strategy that is by the current development of the industry.

Method

This study uses a qualitative descriptive approach. The preparation of the strategy in this study uses SWOT analysis. This study has criteria from the Ministry of Industry in the preparation of interview guidelines, namely, 1) management and organization; 2) people and culture; 3) products and services; 4) technology; and 5) factory operations. The researcher conducted observations and interviews at the research site. Respondents in this study include academics, business, community, government, mass media, and visitors. The researcher processed field data in the form of internal and external factors according to the facts. Respondents will fill out a questionnaire that has been processed by the researcher. The questionnaire contains internal factors and external factors of bamboo crafts in Gintangan Village. Each respondent filled in according to the views of the respondent's personal opinion. The results of the questionnaire were coded into a SWOT matrix analysis. Furthermore, the researcher makes relevant strategies according to the results of the SWOT matrix analysis.

Results and Discussion

Based on the results of the interview, the people of Gintangan Village are a village-based community that has inequality in it. Through a sociological approach, namely a conflict approach, seeing society as an arena of conflict full of inequality. The conflict that occurs is that the community does not have a good awareness of collaboration between artisan groups. The conflict approach focuses on social change which means inequality will result in conflict, and conflict will bring social change. On the other hand, with the concept of Society 5.0, it is hoped that it will produce a relevant strategy for the people of Gintangan Village.

Management and organization

The majority of stakeholders in Gintangan Village do not understand Industry 4.0. The handicraft industry in Gintangan Village still uses conventional methods. There are at least two elements that play a role in Gintangan Village handicrafts, namely, Pokdarwis and Handicraft Center. In transferring the ideas and creativity of the craftsmen, Pokdarwis has not provided ideas and creativity in supporting the work efficiency of the craftsmen. Leaders like Pokdarwis need to put forward the INDI 4.0 industry resolution where artisans are empowered with ideas and creativity. Craftsmen should know what the management leadership wants. In the element of the Handicraft Center, the owner along with the dual position is not a strange thing anymore because the craft industry does not have a clear vision and mission and wants to minimize costs. Of course, there needs to be an effort to prepare a strategy for transforming Industry 4.0. Companies or industries need to understand the changes that exist and be able to welcome them. The handicraft industry in Gintangan Village needs to develop insights into socio-economic changes to survive

the era of technological onslaught, especially human resource development. This is the same vision as Society 5.0.

People and Culture

People and culture are important elements in the company's transformation process to Industry 4.0. Things related to cultural people such as discipline, willingness, to continue learning, and local wisdom. Based on the story of one of the bamboo craft centers, Gintangan Village has problems in the regeneration of bamboo craftsmen. The dominance of the craftsmen is mostly old people. Meanwhile, the character of young craftsmen is easily bored when they have to make one bamboo craft motif, which usually takes a long time. As a Javanese society in general, the philosophy of crime in tandem is very attached to the craftsmen of Gintangan Village which means accepting the situation as it is. On the other hand, the views of the artisan elders are still thick with crafts. However, this does not necessarily overcome social dynamics in the field. The old people are considered to still be passive in moving the craftsmen to unite. There is a need for bridging media to form an ideal society by Society 5.0 where the community plays an active role in making changes.

Products and services

Products and services are products that are integrated with Industry 4.0. Industrial products are integrated with digital technology where product data can be accessed through electronic devices. The majority of artisans still use simple marketing media such as WhatsApp, Facebook, and Instagram. The obstacle to the use of e-commerce is the nature of light and large handicraft products. So it is difficult to pack and there is a risk of it being crushed by other goods. On the other hand, bamboo variety products in Gintangan Village are considered very diverse. Society 5.0 supports the optimization of the use of digital technology which will make it easier for sellers and buyers.

Technology

The use of technology in Industry 4.0 is very diverse, ranging from 3D printers, artificial intelligence, augmented reality, robot collaboration, and others. The use of tools such as drills, knives, scissors, and saws. Society 5.0 empowers the use of technology to facilitate human work. Craftsmen have not adapted to technological developments massively. With the use of technology, it will minimize expensive labor costs. The availability of suitable tools is not yet available. Weather constraints are something that must be solved with technology so that the product process continues to run.

Factory operations

Factory operations are the use of technology in the production process. Enterprise product chain and logistics systems, intelligent machine maintenance system applications, autonomous production processes, storage systems, and centralized data control. Society 5.0 supports data access that is open to the general public. Several bamboo craft centers have their market shares. Product marketing through social media and resellers. Various factors affect a company's revenue such as labor and weather. This affected factory operations. Product stock, product supply chain, and maintenance of company tools have not been well organized. Society 5.0 emphasizes sustainability in the

economic field, so it is necessary to pay attention to how products are processed, packaged, shipped, and used and to organize the product process chain for consumers.

IFE Matrix Analysis

The IFE matrix functions to find out how much the role of strengths and weaknesses plays in the company. The IFE matrix can be seen through the company's internal conditions, namely strengths and weaknesses calculated based on ratings and weights.

Table 1
Internal Factor Evaluation Matrix

Internal Factor Evaluation Matrix				
	Internal Factors	Weight	Rating	Weight Score
No	Strengths			
1.	Fine-grained bamboo	0,073	3	0,220
2.	Strategic location	0,076	4	0,303
3.	Adequate human resources	0,075	4	0,299
4.	Variety of bamboo crafts	0,075	3	0,226
5.	Becoming a Tourism Village in the field of bamboo crafts	0,079	4	0,314
6.	Gintangan Village handicraft branding is good	0,075	4	0,299
7.	There are professionals	0,073	4	0,294
	Total Strength	0,526		1,955
No	Weakness			
1.	There is no equal distribution of the quality of human resources in Gintangan Village	0,072	2	0,145
2.	Competition between artisans	0,070	2	0,139
3.	Lack of digital technology marketing knowledge	0,065	2	0,130
4.	Business management that is still conventional	0,067	2	0,135
5.	There is no intellectual property right in bamboo crafts	0,067	2	0,133
6.	There is no non-governmental organization that specializes in managing bamboo crafts	0,066	2	0,132
7.	Inadequate use of technology	0,067	2	0,134
	Total Weaknesses	0,474		0,9484

Weighted Total Score	1,000	2,903
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EFE Matrix Analysis

The EFE matrix functions to find out how big the role of opportunities and threats is in the company. The EFE matrix can be seen through the company's internal conditions, namely opportunities and threats calculated based on ratings and weights.

Table 2
External Factor Evaluation Matrix

External Factors		Weight	Rating	Weight Score
No	Peluang (<i>Opportunity</i>)			
1.	There is support from the government	0,150	3	0,449
2.	Opportunities to generate ideas via the internet	0,145	3	0,434
3.	Building active participation of bamboo craftsmen	0,149	3	0,446
4.	Annual bamboo festival	0,143	3	0,428
5.	Promotional support from the mass media	0,152	3	0,456
Total Opportunities		0,738		2,2146
External Factors		Weight	Rating	Weight Score
No	Ancaman (<i>Threats</i>)			
1.	The existence of competitors for bamboo handicraft centers	0,135	2	0,270
2.	Uncertain global dynamics	0,127	2	0,253
3.	Lack of public awareness of the importance of technology application	0,127	2	0,253
Total Threats		0,261		0,776
Weighted Score		1,000		2,991

Based on the results of the IFE Matrix, shows that gintangan tourism villages in the field of bamboo crafts are the main factor of strength with a weight score of 0.314 so it has great potential to develop bamboo crafts as a tourist village. The main factor of weakness is the lack of knowledge of digital technology marketing with a weight score of 0.130. The total results of the weighted internal factor evaluation of 2,903 show that the position of Gintangan Village is in an above-average position relative to its internal factors.

Based on the results of the External Factor Evaluation (EFE), the main opportunity factor is promotional support from the mass media with a score of 0.456. This means that there is strong promotional support from the mass media in participating in the publication of Gintangan Village bamboo crafts. Meanwhile, the main threat factors are uncertain

global dynamics and a lack of public awareness of the importance of technology applications with a score of 0.253. The results of the calculation of the weighted total score show a score above the average, which is 2,991, which means that the bamboo handicrafts of Gintangan Village externally respond to each factor.

Table 3
Results of the IE Matrix of Gintangan Village

	Total weighted IFE value (X)		
	Strong 3,0-4,00	Average 2,0-2,99	Lemah 1,0-1,99
	4,0	3,0	2,0
Tall 3,00- 4,00			
	3,0		
Keep 2,00- 2,99			
	2,0		
Low 1,00- 1,99			
	1,0		

(Source: Data Processing, 2022)

The IE matrix shows that the internal and external factors of Gintangan Village are average or moderate. By maximizing the strength factor, the weakness factor can be minimized. The main factor of strength is that the bamboo craft tourism village needs to be improved and the improvement of human resources in Gintangan Village. In an external position, the opportunity factor can affect the threat so that the utilization of the opportunity factor is achieved. By taking advantage of the opportunity, Gintangan Village can reduce threats from the outside. The factors of weakness and opportunity for Gintangan Village are an opportunity to improve. A good business industry by developing a business strategy. Being aware of weaknesses and shortcomings from within is part of strength. Therefore, related parties must be able to design schemes and a conducive business environment so that all parties can benefit.

Based on the IE matrix score, the position of Gintangan Village in internal and external factors is in the V quadrant which is quite high. The IE matrix is in cell five, which means hold and maintain strategy, where in this cell the formulation of strategies based on field conditions with strategies to be held and maintained (market penetration and product development).

Table 4
SWOT Matrix of Gintangan Village Development Strategy

Internal Factors	Strengths (S)	Weaknesses (W)
	<ol style="list-style-type: none"> 1. Fine-grained bamboo 2. Strategic location 3. Adequate human resources 4. Variety of bamboo crafts 5. Becoming a Tourism Village in the field of bamboo crafts 	<ol style="list-style-type: none"> 1. There is no equal distribution of the quality of human resources in Gintangan Village
External Factors	<ol style="list-style-type: none"> 6. Gintangan Village handicraft branding is good 7. There are professionals 	<ol style="list-style-type: none"> 2. Competition between artisans 3. Lack of digital technology marketing knowledge 4. Business management that is still conventional 5. There is no intellectual property right in bamboo crafts 6. There is no non-governmental organization that specializes in managing bamboo crafts 7. Inadequate use of technology
Opportunities (O)	S-O Strategy	W-O Strategy
<ol style="list-style-type: none"> 1. There is support from the government 2. Opportunities to generate ideas via the internet 3. Building active 	<ol style="list-style-type: none"> 1. Implementation of routine agendas for making crafts together at the village hall (S1, S2, S3, S4, S5, S6, S7, O1, O2, O3, O4, O5) 2. Penyelenggaraan perlombaan kreativitas kerajinan bambu (S1, S2, S3, 	<ol style="list-style-type: none"> 1. Conducting regular coaching of special organizations of bamboo craftsmen (W1, W2, W3, W4, W5, W6, O1, O2, O3, O4, O5)

participation of bamboo craftsmen	S4, S5, S6, S7, O1,O2, O3, O4,O5)	2. Conduct training in digital marketing (W1, W2, W3, W4, W5, O1, O2, O3, O4)
4. Annual bamboo festival		
5. Promotional support from the mass media		
Threats (T)	S-T Strategy	W-T Strategy
1. The existence of competitors for bamboo handicraft centers	1. Making innovations such as bamboo craft halls and bamboo buildings (S1, S2, S3, S4, S5, S6, S7, T1, T2, T3)	1. Making business studies as an effort to increase industrial capacity (W1, W2, W3, W4, W7, T1, T2, T3)
2. Uncertain global dynamics		
3. Lack of public awareness of the importance of technology application		

SWOT Matrix Analysis for SO Strategy

By looking at the SWOT Matrix of the SO Strategy, it can be seen that Gintangan Village can form a strategy to utilize strengths to become opportunities. This strategy can be implemented such as making a routine agenda for making bamboo crafts at the village hall and organizing a bamboo craft creativity competition.

SWOT Matrix Analysis for WO Strategy

On weaknesses and opportunities, Gintangan Village can develop a strategy that minimizes weaknesses and maximizes opportunities. Strategies that can be implemented include regularly coaching special organizations of bamboo artisans and conducting training in digital marketing as well as the introduction of values from Society 5.0 which will later be in line with village work programs and the craft industry.

SWOT Matrix Analysis for ST Strategy

Looking at the strengths and threats, Gintangan Village can use strength to overcome threats. This strategy is such as making innovations in bamboo craft halls and buildings from bamboo which are expected to be an inspiration for the craft industry to exist in their fields.

SWOT Matrix Analysis for WT Strategy

Strategies that can result from minimizing weaknesses from within and avoiding threats from external. There are several bamboo craft centers in Gintangan Village, by making a business study will facilitate the direction of business in the next five years.

Conclusion

INDI 4.0 indicators consist of, namely, 1) management and organization; 2) culture and people; 3) products and services; 4) Technology; and 5) Factory Operations. Management and organization are not well organized, have dual positions, and do not have a clear vision and mission. People and community culture believe in *primo ing* pandemic which means accepting the situation as it is and internal dynamics that have not been properly accommodated. The majority of handicraft products and services rely on social media such as WhatsApp, Facebook, and Instagram as well as packaging problems in shipping. The use of technology uses makeshift tools and the process of making crafts which still mostly rely on human labor. Factory operations or product supply chains rely on the market share owned by each manufacturer and reseller.

Based on the results of the SWOT calculation, it can be concluded that Gintangan Village is in an average or medium position. With the calculation value from the Internal Factor Evaluation (IFE), the total score was 2.903 and the External Factor Evaluation (EFE) obtained a score of 2.991. This position places Gintangan Village in Cell V, which means hold and maintain which aims at market penetration and product development. Then the results of IFE internal factors and EFE external factors obtained a strength and opportunities (SO) value of 4.17, a strength and treat (ST) value of 2.73, a weakness and opportunities (WO) value of 3.16, and a weakness and treat (WT) value of 1.72. The strategy with the highest value is SO. Strategies that can be prioritized are the implementation of a routine agenda for making bamboo crafts at the village hall and the organization of bamboo craft creativity competitions. After conducting the analysis, the author still feels that there are many shortcomings in this study so suggestions for future research to research development strategies are more measurable and tested in the field.

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