

Sustainable Development of Batik Banyumas as Creative Industry: A-B-G Community-Based Triple Helix Model

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Abstract: The collaboration between Triple Helix actors can be identified to be the basis of the sustainable development of Batik Banyumas industry. The interaction model among academicians, business people and government meets a formidable challenge seen from the knowledge, technology and innovation from the university to the community and business people. This study is aimed at discussing the interaction of Triple Helix actors to improve the batik industrial chain in Banyumas Regency. It also presents the important collaboration role between the academicians, business people and government to encourage the industrial competitiveness of Batik Banyumas. The findings show that the implementation of Triple Helix Model by involving A-B-G community can encourage the competitiveness of Batik Banyumas industry and it is the part of empowerment strategy of Batik Banyumas craftspeople. The interaction itself will also motivate the sustainable development of Batik Banyumas industry.

Key words: Triple Helix, Batik, innovation, sustainable, Banyumas, creative industry

INTRODUCTION

Indonesian Batik is designated by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as the masterpiece of oral and intangible heritage of humanity. The recognition, generally produces positive effects on the Batik industry in Indonesia and particularly in Banyumas Regency.

The industry has become one of the leading local industry in Banyumas Regency and it has been able to absorb local employees and has significantly contributed to the local levies. Thus, to improve the industry competitiveness, there should be collaboration between the stakeholders such as educational institutions, Micro, Small and Medium-sized Enterprises (MSMEs), the government, NGOs and private sectors (Etzkowitz, 2003; Safiullin *et al.*, 2014; Varrichio *et al.*, 2012). Besides, the local government, higher educations and business people play important roles in the process of the Batik sustainable development (Anwar and Afuan, 2013; Shapiro, 2007; Da Silva *et al.*, 2012; Zhao *et al.*, 2013).

The collaboration between academicians, business people and the government known as Triple

Helix becomes the foundation of the batik industry sustainability (Da Silva *et al.*, 2012; Varrichio *et al.*, 2012; Anwar and Afuan, 2013). The Triple Helix interaction should be dynamic and adaptive for various industry, technology or geographical/regional aspects. Etzkowitz (2003) states that Triple Helix Model faces the challenge of achieving better capability in transferring knowledge as well as technology from the academicians to the business sectors and the community.

This study tries to explore the interaction of the academicians, business and the government (A-B-G community) in the effort to reach the sustainable development of Batik industry in Banyumas Regency. Moreover, it presents the contribution of each A-B-G community-based Triple Helix interaction and discusses the collaboration effect among the community. To explore this kind of resources, a time and motion study is needed to determine that the collaboration of each Triple Helix actor really gives additional value to Batik Banyumas industry and at the same time gives a bigger advantage to the local economy development.

Therefore, it is important to have a public investment on knowledge, technology and innovation and policy configuration to support the Triple Helix Model. However,

there should be other considerations for the value chain activities of Batik Banyumas industry and consequently, the sustainability needs changes in both the technology policy and the economic policy. The changes, indeed will support the sustainable improvement of the Batik industry.

In terms of knowledge, the regency has a number of educational institutions as well as universities that have particular subjects/programs to support the development of Batik Banyumas industry. However, if the three actors cannot cooperate, the relationship between the A-B-G communities will not be optimum for the Batik industry development. Thus, the idea of the Triple Helix Model involving the ABG community is a realistic alternative in the context of sustainable Batik Banyumas industry.

MATERIALS AND METHODS

This study is qualitative research by applying constructive paradigm to understand the collaboration between the Triple Helix actors. The data was collected in 4 stages: bibliography documentation, intensive observation by visiting the production sites and batik stores in-depth interview with 32 batik industry owners and data collection by a Focus Group Discussion (FGD) from all Triple Helix actors in Banyumas area.

The FGD was conducted to elaborate and confirm the findings and the participants were the owners of Batik Banyumas MSMEs, some officials of the Banyumas Cooperative, Trade and Industry Department, Banyumas Development Planning Board (Bapeda), some researchers from Universitas Jenderal Soedirman, the Association of Batik Banyumas Craftspeople (PERBAIN), NGOs, Indonesian Chamber of Commerce and Industry (KADIN) and humanist (cultural observers). The data validity is given by a source triangulation method by comparing and examining information gathered by various methods. Then, the data is interactively analysed by displaying and concluding/verifying.

RESULTS AND DISCUSSION

Profile of Batik Banyumas industry: The industry of Batik Banyumas is known as creative industry that has grown and developed since decades ago in Banyumas Regency (Anwar and Afuan, 2013). As mentioned above, Batik is the intangible cultural heritage recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO). According to Hamzurin in his book "Batik Klasik" (Classic Batik), Batik is defined as a way to decorate cloth with particular patterns by using

wax. Then, the decorated cloth is then put in the dye. So, etymologically, classic batik is related to the technique (process) of motif designing and one characteristic is the motif drawing on cloth by the process of "pemalaman" (waxing) using canting (a pen-like tool to draw Batik patterns in wax) and print.

Batik Banyumas industry is one of valuable commodities in Banyumas Regency and the industry centers are spread across some areas in Banyumas, i.e., Sokaraja Subdistrict, Sumpiuh, Purwokerto, Sidabowa, Banyumas, Somagede, Baturraden and Banyumas. The motif is identically known as 'Jonasan' that is non-geometric motif dominated by brown primer and black. Today, there are other motifs such as Sekarsuryo, Sidoluhung, Lumbon, Jahe Puger, Cempaka Mulya, Kawung Jenggol, Madu Bronto, Satria Busana and Pring Sedapur.

There are 3 kinds of Batik produced by Batik Banyumas craftspeople; they are Batik tulis (hand-painted Batik), Batik cap (stamped Batik) and the combination of the two kinds. In 2012, the Banyumas Cooperative, Trade and Industry Department found that there were 15,000 pieces of Batik tulis per year, 27,200 pieces of Batik cap per year and 22,000 pieces per year for combined Batik. Furthermore, there were 45 Batik enterprises which were classified into Micro, Small and Medium Enterprises (MSMEs) and their average capital was between IDR 50,000,000 and IDR 1,000,000,000 with monthly income between IDR 25,000,000 and IDR 100,000,000.

Most of Batik MSMEs is owned by individuals who are also operational managers. In 2012, each industry was able to have 5-24 skilled labours and the industry has played important roles in declining the number of unemployed, stimulating the local economic growth and in reducing the urbanization. Rahab emphasize that Batik Banyumas is a potential commodity that can be foremost industry centres in Banyumas Regency.

A-B-G community-based Triple Helix Model: Triple Helix-based collaboration has different dimension that is either as trans-sectoral collaboration in a dynamic system or as an integrated system of an industry. The collaboration of Triple Helix actors is emphasized more on intrasectoral collaboration system (Solleiro and Gaona, 2012).

The dimension shows that the relationship of academicians-business people-government (A-B-G community) is relatively equal and yet somehow they depend each other, build a circle of institutions to reduce the gap between them. In this dimension, each actor involves in a programmed collaboration and in the

context of Batik Banyumas development, it indicates a development process of coordinated local industry that involves intrasectoral interactions. The original idea is that the three actors make different contributions and in the exchanging process they receive a special reward for the steps of the innovation process (Varrichio *et al.*, 2012). During the initiation phase, the university as the public actor, makes a significant contribution in the scientific development phase whereas the business people are in important positions during the commercialization phase of the innovative products produced by Batik Banyumas industry.

Solleiro and Gaona (2012) proposes that all actors should contribute by offering constructive suggestions and these actors get something from the collaboration. In addition, they explains that in each innovative process, the Triple Helix actors are the drivers of change to reach the sustainable development.

The phase of Batik Banyumas industry development:

In the process of the development, the industry should take several steps. The first is inviting related partners (A-B-G community) to collaborate in developing Batik Banyumas industry. In this initial step, the main actor of the A-B-G community will offer their long-term vision related to the target of Batik Banyumas industry development. After the vision is agreed, they decide the research and development priority for the mid-term and long-term activities including suggestions from the stakeholders targeted to their working program and steps to develop the networking and to classify the scientific and technical abilities in Banyumas area. This step needs technological framework (including sectoral policy, government regulations, intellectual property

rights, etc.) and business environment to be successful in penetrating markets in the future (Solleiro and Gaona, 2012).

The next step is dissemination which formulates the strategies/give out information as the guidelines for all actors to control the business competition either in local or international markets. They need mechanism to organize the private and public investment so that the dissemination strategies can be translated into priority programs aimed at the sustainable development of Batik Banyumas industry. Therefore, both private and government fund are of great value to implement the strategy. Moreover, the technological competence, especially in the main sectors of the industry development, needs to be improved to support the innovation process (Table 1). In the collaboration chain, the main sectors play a role as leaders as well as drivers of all actors in implementing the detailed plan (Varrichio *et al.*, 2012).

In the context of Triple Helix, a knowledge hub is a system in a connected knowledge, internally or externally that has proven ability to share knowledge and is able to produce three functions in the community. The hub produces knowledge to transfer and to share to others. By the approach of knowledge hub, Tjakraatmadja *et al.* (2011) analysed the process of sharing knowledge in the clothes creative industry in Bandung and they used a Triple Helix Model to define the knowledge hub (Table 2).

The roles of academicians in Triple Helix collaboration:

Today, the world is facing a transition process from the industry-based economy to the knowledge-based economy. In the knowledge-based economy, a state

Table 1: Contributions from Triple Helix actors

A-B-G community	Contributions
Academicians	Involving in transferring technology and imparting knowledge
Business people	Collecting products and supplies including the material and equipment Providing financial support and credit to fund the industry development
Government	Ensuring that the research from the dialogue process gives significant advantage to the industry as well as the to the public Being the policy maker, donor and promotor and supporter of technology innovation

Table 2: The roles of academicians, business people and government in knowledge hub (Tjakraatmadja *et al.*, 2011)

Knowledge hub functions			
Role of A-B-G community in Triple Helix Model	Producing knowledge	Transferring knowledge to application sites	Imparting knowledge to others by education and training
Academicians	Creating knowledge through researches to determine the factual knowledge in service industry	Being the source of knowledge	Being the trainers and teachers in service industry
Business people	Sharing knowledge through business experience	Gaining and applying the knowledge of business, giving feedback to have new knowledge	Participating in training, giving feedback in the training and giving financial support (as training organizers)
Government	Creating knowledge by regulation system process	Composing a regulation about transferring knowledge, being facilitators and financial supporters	Facilitators and financial supporters

competitiveness is seen from its knowledge and technology and thus, the role of universities becomes vital to the Triple Helix Model. Universities with their research and development activities are important asset in the process of knowledge (Ghazalid and Martini, 2012; Safiulin *et al.*, 2014). Thus, the academicians in Banyumas Regency from Universitas Jenderal Soedirman, Universitas Muhammadiyah Purwokerto, Universitas Wijaya Kusuma and some other universities) play important roles in developing Batik Banyumas industry as a strategy to transfer knowledge in industrial sector.

The problems that may impede the industry promotion are the internal policies that do not support the development, the financial shortage and the disharmony with the private sectors (Da Silva *et al.*, 2012). Thus, the competent researchers from the universities or higher education institutions should transfer their knowledge as well as technology to develop innovations of Batik Banyumas industry. To support the development, the academicians (from universities and research centres) have two main functions: as the supporters of technology transfer process in developing the Batik Banyumas industry and as the centres of research and development to find innovations in supporting the industry competitiveness.

The sustainable development by the Triple Helix Model gives real advantages to support the management and the technical support, the training and other facilities for Batik Banyumas MSMES. It is also important to encourage the growth of the local and regional economic sectors. The academicians role is very helpful in the process of the sustainable development implementation (Solleiro and Gaona, 2012). Therefore, the support from the universities, business people and the industry becomes the opportunity of the successful development of Batik Banyumas MSMES.

The government's role to promote the Triple Helix collaboration: There are some reasons why the government intervention in the development of Batik Banyumas industry has proved ineffective. Based on the interview with the Triple Helix actors, the researcher found that the main reasons were the lack of support, commitment, the honesty of the government officials, limited budget and competent consultants. The discontinuous process happened because there was no detailed plans (short-term, midterm, long-term) and the political situation was unstable. The condition made the local government change the scheme. In addition, the bad relationship between the academicians, business people and the government influences the effectiveness of the government intervention in Batik Banyumas industry.

According to Ritter and Gemunden, the bad relationship happens when the local external business environment is unsuccessful in encouraging the government program and in promoting the good relationship among the Triple Helix actors. Furthermore, it limits the network development and knowledge transfer from the universities to the Batik Banyumas MSMES.

The other problem is the technology ineffectiveness due to insufficient advice and supervision from the government in technology implementation (Da Silva *et al.*, 2012). Nowadays, many companies use machines to reduce their labourers but the operation mode is often not in line with the industry characteristics. Similarly, if the batik industry uses machines, it will be useless since it tends to exploit the labourers creativity in the production process.

The role of business in Triple Helix collaboration: The private financial sector also plays important role in reinforcing the competitiveness of Batik Banyumas industry. Besides, private companies as the part of the Triple Helix are another important actors in marketing and act as the 'locomotive' to move all resources in each industry development chain (Da Silva *et al.*, 2012). The resource integration between the batik industry and research and development institution is hoped to accelerate the innovation process.

On another hand, it also applies to the government's promotion agencies that promote Batik Banyumas products. The government can encourage the innovation through a strategic policy and regulation that support the synergy between big firms sized and small firms sized. The financial support and market network from the big companies will increase the batik MSMES investment capacity in developing innovation as well as collaboration to make them able to compete. Moreover, the assistance fund offered by the private sectors as the economy incentive will be useful for the product development and market expansion. In this case, the big companies and the private financial institutions are urged to provide financial support or grant with mild interest; so, it will help Batik Banyumas owners invest easily. Thus, the intensive collaboration between batik MSMES and business people will create opportunities for the business environment in Banyumas Regency.

CONCLUSION

The Triple Helix Model is trying to grab the process of role transformation and the relationship between the three main agents, i.e., Academicians-Business-Government. The concept of the

A-B-G community collaboration is called 'spiral as inter twined' by having different relation to each other. The collaboration itself has the capability to improve innovation to make Batik Banyumas industry more competitive. Besides, the implementation of Triple Helix Model in Banyumas Regency results in a conducive atmosphere for innovation.

The other important finding is the implementation of Triple Helix Model shows useful matters to encourage: the capacity accumulation and innovative capability to increase the Batik MSMEs turnover since it involves the resource model and the combination to give synergy that can improve the innovation activities of Batik Banyumas. In addition, the effort to apply the model in Batik Banyumas industry will improve the local industry competence and the industry empowerment. The interaction among the A-B-G community in the frame of Triple Helix will also support the sustainable development of Batik Banyumas industry.

SUGGESTIONS

The industry of Batik Banyumas as leading local industry should be continuously improved and it needs the involvement of academicians and others parties such business, government and Non-Government Organizations (NGOs). Besides, the community synergy should be aimed at developing the industry to be more competitive both in local market and global market competitions. The universities also need to involve and actively play their roles more in transferring knowledge to support the innovation. They can suggest how Batik Banyumas can improve by holding several training, consultation, incubations and ability transfer. Therefore, the Triple Helix Model places academicians in central positions in the process of Batik Banyumas industry through creation, transfer and acquisitions of knowledge involving others institutions.

However, the Triple Helix Model promotions still faces some problems and it is not a short-term activity because it involves many actors from different background. The collaboration program should become a value added activity and all entities should support each other to reach economy and social development in achieving Batik Banyumas industry competitiveness.

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