The Role of Industrial Environment and Innovation Phenomenon Analysis in the Development of Batik Small and Medium-sized Enterprises in Malang and Batu

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Abstract: The study analyzes the role of Batik SME’s industrial environment based on Porter’s Five Competition Forces. This study also analyzes the phenomenon of innovation in the expansion of Batik SME based on the type and nature. Method applied in this study uses phenomenological approach to describe and analyze phenomenon, events, social activities, behaviors, beliefs, and perceptions of batik entrepreneurs. The findings of this study are, first, product information makes customers more selective in choosing their batik needs offered; second, batik entrepreneurs collaborate with suppliers in Yogyakarta, Solo, and Pekalongan by purchasing tools and batik materials in large quantities. Batik entrepreneurs of Celaket act as suppliers of batik tools and materials as well especially in the area of Malang and Sukun; third, Batik SME in Malang and Batu are confronted by the presence of other businesses that produce dyed batik and printed batik, which are new kinds in the world of batik. Printed batik (batik printing) and dyed batik (batik celup) are produced in large quantities with fast processing time and very low price, so the traditional batik entrepreneurs deal with the competition by maintaining and improving the quality of batik and applying an appropriate pricing strategy; fourth, the dynamic environment of industry triggers some entrepreneurs to innovate in order to maintain existence in the world of batik. Finally, there is a value shift in the art of batik culture both motifs and philosophy due to market demand and economic needs.

Keywords: Industrial Environment, Porter’s Five Competition Forces, Innovation Phenomenon, Batik SME

Abstrak: Penelitian ini menganalisis peran lingkungan industri Usaha Kecil Menengah (UKM) Batik berdasarkan Lima Tekanan Kompetisi Porter. Penelitian ini juga menganalisis fenomena inovasi dalam ekspansi UKM Batik berdasarkan tipe dan sifat alami batik. Metode yang diaplikasikan dalam penelitian ini adalah pendekatan fenomenologi untuk mendeskripsikan dan menganalisis fenomena, kejadian-kejadian, aktivitas sosial, perilaku, kepercayaan, dan persepsi pengusaha batik. Hasil penelitian adalah, pertama, informasi produk membuat konsumen lebih selektif memilih batik yang ditawarkan; kedua, para pengusaha batik berkolaborasi dengan supplier di Yogyakarta, Solo, dan Pekalongan dengan membeli peralatan dan bahan baku batik dalam jumlah besar. Pengusaha batik Celaket berperan sebagai supplier peralatan dan bahan baku batik khususnya di kawasan Malang dan Sukun; ketiga, UKM batik di Malang dan Batu menghadapi perlakuan dari kehadiran bisnis baru yang memproduksi batik celup dan batik printing yang merupakan varian baru dalam dunia perbatikan. Batik printing dan batik celup diproduksi dalam jumlah yang besar dengan waktu proses cepat dan harga yang sangat rendah, sehingga pengusaha batik tradisional mengatasi masalah ini dengan menjaga dan atau meningkatkan kualitas batik dan mengaplikasikan strategi harga yang tepat; keempat, dinamika lingkungan industri memicu beberapa pengusaha batik berinovasi untuk menjaga eksistensi di dunia perbatikan; dan terakhir, ada pergeseran nilai dalam budaya seni batik meliputi motif dan filosofi karena permintaan pasar dan kebutuhan ekonomi.

Kata Kunci: Lingkungan Industri, Lima Tekanan Kompetisi Porter, Fenomena Inovasi, UKM Batik
Batik, literally, is Fabled Cloth of Java derived from Javanese language, namely *hambatik* (batik), which means to write or to draw all complex shapes on fabric by using *malam* (wax) and a tool called *canting* (Setyanti, 2013). Batik is a technique of coloring cloth using *malamas* fabric’s color entry barrier to another. In the international literature (Amubode, 2009), batik production technique is known as wax-resist dyeing. In addition, batik is defined as a method on a batik fabrics making that includes two things: (1) the technique of cloth coloring using *malam* to prevent partly fabric staining and (2) the fabric or clothing made with wax-resist dyeing technique with typical motifs. A constructed artistic batik involves not only the change of fabric’s economic value, but also the type of motif influenced by the social and cultural life that causes each motif to have specific meaning and use (Soesilo, 2008).

Batik consists of two major categories: inland batik and coastal batik. Based on its motif and colors, inland or classic batik contains philosophy of a very thick Javanese culture and has natural colors such as brown, white and blue. This type of batik develops in Yogyakarta and Surakarta or Solo. Whereas, coastal batik is heavily influenced by foreign cultures such as China, India and Arab. Its motifs are more expressive and free and come out with lighter and bolder colors. This kind of batik grows in the coastal area of Java such as Cirebon, Pekalongan and Madura.

Batik industry in various regions in Indonesia has been growing rapidly including in Malang and Batu. Unlike in Yogyakarta, Solo and Pekalongan, which are iconic regions of batik, batik in Malang and Batu is still growing in the developmental stage. It is inseparable from the influence of the inland and coastal yet it still respectively has the characteristics of batik. Characteristics of Batik Malang consist of three components: (1) the basic component (*tahanan*), (2) main motif (*isian*) and (3) decorative motif for *tumpal* or border motif with *isen-isen*. Some Batik Malang’s motifs are inspired from reliefs of Candi Mendut Malang, relics of Kanjurugan Kingdom, whereas some other motifs pattern the symbols of Malang such as Tugu Malang, Singo Edan and other symbols, such as flowers and fruits. On the other hand, motifs of Batik Batu are dominated by motifs of fruits, such as apple and strawberry, vegetables, cow as well as wheel, which are the characteristics of the area. However, innovation of Batik Malang and Batu keeps pursued by the local governments and related organizations. This activity is carried out as batik becomes one of art products that could increase the foreign exchange through the revitalization of the Small and Medium Enterprises (SME), which is classified as creative industry.

The development of batik in Malang and Batu is assessed as a positive and “courageous” action in an attempt to produce batik as regional specialty. However, it faces numerous challenges, such as how to remove the image of Batik that has been generally known as Batik Yogyakarta, Solo and Pekalongan; how to obtain a supply of tools and batik raw materials as well as to deal with competition from other similar businesses. The series of challenges in the development of batik SME in Malang and Batu has become a particular challenge for the batik SMEs in both regions in maintaining their businesses. There are some small batik businesses in Malang and Batu shown in Table 1.1.
### Table 1.1.
#### Data of Batik SMEs’ in Malang and Batu

<table>
<thead>
<tr>
<th>No</th>
<th>Nama Usaha</th>
<th>Kecamatan</th>
<th>Kelurahan</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Batik Celup</td>
<td>Blimbing</td>
<td>Balearjosari</td>
</tr>
<tr>
<td>2.</td>
<td>Kampung Batik Tulis</td>
<td>Sukun</td>
<td>Bandungrejoshi</td>
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<tr>
<td>3.</td>
<td>Batik Tulis Celaket</td>
<td>Lowokwar</td>
<td>Samaan</td>
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<td>4.</td>
<td>Butik Olive Batik</td>
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<tr>
<td>5.</td>
<td>Batik Tulis Tradisional</td>
<td>Bumiaji</td>
<td>Pandanrejo</td>
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</tbody>
</table>

**Source: Processed Data, 2014**

Research was conducted in the Batik Tulis Celaket SME founded by husband and wife, A. Hanan Jalil and Ira Hartanti in 2002. Formerly in Kampung Celaket, there was a Batik Center, which unfortunately sank as the falling interest in batik in 1970’s. The business was founded to preserve the culture of batik, which had begun to be abandoned by the people around. Research was also conducted in SME of Batik Tulis Tradisional Raden Wijaya in Batu, which was founded by Lina Santoso in 1990. This business runs as an attempt to preserve the culture of batik tulis (handwritten batik).

**The Role of Industrial Environment in the Development of Batik Small and Medium Enterprises**

A very rapid change of environment causes high dynamics that create uncertainty faced by an organization’s environment. Organization’s environment consists of two: internal and external environment. External environment is composed of two: general and task environment or known as industrial environment. Directly assessed, industrial environment may have a significant influence to achieve business objectives (Pearce and Robinson, 2003). Environmental aspects of the industry is more directed at the aspect of competition between enterprises producing similar product in a certain area or region, for example, batik’s industrial environment for batik producers in Malang, which are batik celaket, batik celup and batik sukun, as well as batik’s industrial environment for batik producer in Batu, which are Batik Raden Wijaya and Batik Olive. Batik SMEs surviving the competition should be able to reveal the dimensions of the industrial environment. They are things that must be considered in the interest of business competition.

1. **The Bargaining Power of Customers**

The continued development of information technology allows customers to obtain information more widely so they can now be more selective in choosing batik needs offered. Some factors considered by customers in choosing batik: quality, price, product information, products type and consumer tastes are expressed in several statements. Below is from the owner of Batik Raden Wijaya:

> They were from Malaysia and Japan. They prefer the natural dyes for it causes no irritation. Besides, nowadays there is more intense and extreme consumers protection regarding applying the synthetic one....

Following is a statement of a Batik Celaket’s customer:

> I've been buying batik here for three years now. It doesn’t fade which in turn maintains
its quality. Hence, I would buy for my kids, co-workers. People from the office, all of them, buy here. I, as well, use batik tulis. At the beginning, I was wondering how I could pay such for batik tulis. The price is classified cheap in here....”

2. The Bargaining Power of Suppliers

In running the production process, batik SME persons in Malang and Batu still supply tools and materials from several areas in Central Java, such as Yogyakarta, Solo and Pekalongan. Therefore, suppliers from the areas conduct series of activities, such as improving services, opening new branches, and expansion of the sales area coverage to compete with another suppliers from the same area. Following is a statement of one of batik tools and materials supplier located in Toko Prawoto, Yogyakarta:

“Usually, those who order would be coming straight here, mbak (sis), but we also receive orders from outside of town, such as areas in East Java, like Malang....”

On the other hand, the limited number of batik tools and materials supplier in Malang provides an opportunity for the entrepreneurs of Batik Celaket to become suppliers for batik entrepreneurs in Sukun as expressed in the following statement:

“Besides utilizing for ourselves, some of batik tools and materials we had bought are resold, well, because here’s not like in Solo, Pekalongan nor Jogja that are indeed the places of batik’s history. It’s hard to find the stuff in here, so we resell....”

“Those from Batik Sukun usually order things here so we would directly order from Pekalongan and later Sukun would order from us....”

3. Competitive Rivalry among Existing Enterprises

The strategy of a company is considered successful when the company generates a competitive advantage over the strategy run by another company (David, 2001). Batik celaket entrepreneurs apply new techniques in creating batik: batik cor; which is not applied by any other batik SMEs. Meanwhile, entrepreneurs of Batik RadenWijaya retain to only produce the type of batik which begins to be abandoned by its customers as the emergence of new batik techniques, such as batik cap and batik print that produce batik in large numbers. However, Batik RadenWijaya is still able to remain competitive when the kind of batik sold is in the form of unique and rare commodity as stated by an owner: “We stick with traditional technique in order to preserve the culture of batik. Printed batik is merely a motif. After all you’ve got to do it all using malam and dyes as how batik tulis is supposed to be made of. (It then makes) Batik tulis more exclusive yet expensive, pretty expensive....”

4. The Potential Entry of New Competitors

There are a variety of batik techniques that have been developed in Malang, such as batik cor and batik celup. Batik cor is a Batik Celaket SMEs’ specialty, of which the process includes pouring melted malam onto a piece of cloth. Whereas, batik celup is a kind of batik technique that begins to develop in Malang. Adding motifs to batik celup or batik ikat (juput) is done by tying a cloth so as to form a motif when the cloth is dipped in the dye. The existence of batik cor and batik celup in the world of batik raises pros and cons about the true meaning of batik as
stated by the owner of Batik Tradisional Raden Wijaya SME: “Well, batik cor is only (a technique) where malam is melted and poured like this (while practicing the pouring) onto the cloth. It is not written like batik tulis.”

While a batik Celaket artisan also has an opinion about batik celup:

“Batik celup is called juput. It looks similar to Balinese sarong. The color is dark blue and the later tied-cloth is light blue to be sprayed all about, like rainbows. It is not batik; only dyed type....”

“Batik doesn’t use soda because (the real) batik uses malam or wax like this (while showing malam).”

5. The Potential Development of Substitute Products

Replacement products are important concerns in any industry since the market demand is tentative. The constantly changing consumer needs carry a threat to the business and its process as well as the batik industry since the advent of batik print. Counterfeit product to batik is known as batik printing that is currently flooding the market of Indonesian batik. Through the mastery of technology, the process of batik printing becomes similar to the process of screen printing that uses press printing machine so it enables to produce significant amount of batik with short time and low production cost. Batik printing was not properly called batik as the process involved does not use malam but a machine printing out batik motif on a piece of cloth. Therefore, some batik artists and artisan prefer to call it ‘batik fabric’. Following is a statement from the owner of Batik RadenWijaya SME about batik print.

“We stick with traditional technique in order to preserve the culture of batik. Printed batik is merely a motif. After all you’ve got to do it all using malam and dyes as how batik tulis is supposed to be made of. (It then makes) Batik tulis more exclusive yet expensive, pretty expensive....”

From the statement, it is known that batik using malam is only done with writing technique using a canting. It also hints that batik cap cannot be categorized as original batik as the process utilizes stamp tool in spite of still using malam.

Prototype of Environmental Analysis of Batik Industry

Based on the narrative explanation of the essence of industry environment analysis, it is obtained a meaning of an overall informant’s experience summarized in a prototype model. Prototype model presented in Figure 1 shows that the bargaining power of customers is built on quality, price, product information, product differentiation, and consumer tastes. Whereas the bargaining power of suppliers is built on the number of supplier, raw material costs and cooperation. Meanwhile, competition divided into competitive rivalry among existing enterprises, potential entry of new competitors and potential development of substitute products is built on quality, price, differentiated products, product differentiation, the number of competitor, product’s size and capability, customer loyalty, and product preferences. All aspect of industry environment analysis and factors shaping it become a reference to determine improvement strategy for the development of a batik SME.
Andi Normaladewi, The Role of Industrial Environment and Innovation

Figure 1. Prototype Model of Industrial Environment of Batik SME Source: Primary Data 2014 (processed)*

Research Proposition

Based on appropriate themes of the narrative description which then summarized in a prototype model, it is known that factors-quality, price, product information, differentiated product, and consumer tastes in the bargaining power of customers form the following minor proposition.

Minor Proposition

“Quality, price, product information, differentiated product, and consumer tastes encourage batik enterprises to form strategy to develop batik SMEs.”

Based on appropriate themes of narrative description which then summarized in a prototype model, it is known that the number of supplier, raw material costs, and cooperation in the bargaining power of suppliers form following minor proposition.

“Quality, price, differentiated products, product differentiation, the number of competitor, product’s size and capability, customer loyalty, and product preferences encourage batik enterprises to form strategy to develop batik SMEs.”

Major Proposition

Competitive analysis of industrial environment based on Porter’s Five Forces including bargaining power of customers, bargaining power of suppliers, competition (competitive rivalry within an industry, potential of new entrants, and potential of substitute products) is an effective approach to assist SME persons in implementing development strategy to compete in the world of batik industry. In this study, it is formed major proposition in accordance with minor proposition preconceived about
industry environment analysis of batik SME as follows:
“Bargaining power of customers, bargaining power of suppliers, and competition encourage batik enterprises to form strategy to develop batik SMEs.”

The Phenomenon of Innovation in Batik Development
In the process, batik cultural heritages requires creativity, skill, patience, with a variety of patterns and motifs, for example, traditional batik that is made by the grip and has a particular meaning; contemporary batik as an innovation product; and futuristic batik as a manifestation of clothing variants made from batik creations. Related to innovation, from the SME’s point of view, innovation generally refers to product and process that meet customers’ needs more competitively and profitably than the existing method (O’Regan & Ghobadian, 2005). The importance of innovation for the enterprises development, especially small and medium-sized industries represented by Setyanti (2013) in a study on batik SMEs in East Java stated that innovation plays a role as a mediator in improving business performance. Batik SMEs need to innovate in order to retain the products. In addition, she also stated that batik innovation can be done in various ways, either in motif innovation, technical innovation or innovation in the making. Following are innovations applied by two Batik SMEs:

Batik Tulis Traditional RadenWijaya
Product Innovations

1. Product Differentiation
   Besides batik in the form of cloth, Batik RadenWijaya produces other batik products as well, such as scarves, outfits, and bags. Associated with the theory on innovation, John & Davies in Neira et al. (2009) stated that product innovation refers to new products and product development (product differentiation). Product innovation through product differentiation is such a commercial step undertaken by an entrepreneur, as stated by Cumming in O’Dwyer (2009).

2. Distinctive Motif
   Batik Raden Wijaya has a distinctive motif of Batu, for example, apple, strawberry, and wheel motif as a symbol of Batu as shown in Figure 2. In Batik Raden Wijaya Gallery, there are also various kind of batik motif depicting tourism in Batu, such as crafting, paragliding, rock climbing, and fruits picking applied on top of the fabric in the form of picture story. Associated with the theory of innovation, uniqueness of a product becomes an important attribute of the product excellence. Uniqueness of product is influenced by the innovative power to produce customers’ desired products (Calantone in Neira et al.2009). In this case, the distinctively unique motif of Raden Wijaya advantages the batik SME for its original and specific motifs.

Figure 2. Wheel, a distinctive batik motif of Batu
3. Motif Improvement

Batik Tulis Raden Wijaya does not only produce batik but also promote Batu as a tourist destination. Promotion is held by improving motifs applied on a piece of cloth. In addition, motifs of Raden Wijaya also depict the everyday life of the people around, such as farming (figure 3), apple picking, and milking. Motif improvement includes all forms of local wisdom in Batu. Associated with the theory of innovation, reasons cause an organization to be innovative are the climate and culture (Ahmed, 1998). In this case, the neighborhood becomes an inspiration for the entrepreneurs to create and explore typical motifs of their region.

4. Grip Standard

In creating a motif, a grip standard has been set for each fabric namely batik. Batik with grip standard is a kind, of which the making process uses canting (batik tulis) and stamp (batik cap) and which is with motifs, such as isen-isen, parang, etc. Batik Tulis Raden Wijaya assets its batik motifs by characteristics of Batu and keep applying its grip standard, such as apple, a symbolic fruit of Batu. Batik Tulis Raden Wijaya uses not only apple motif but also modified thematic motif, such as picking apple, in the form of a story on a piece of cloth coming along with motif isen-isen and utilization of canting due to the owner’s passion to cultivate batik tulis. Associated with the theory of innovation, product innovation refers to the creation of product design in order to develop new products (Samsir, 2012). In this case, combination of symbolic motifs and standard grip in a piece of batik refers to the creation of design or motif in developing new products.

Process Innovation

Batik Raden Wijaya SMEs innovates none in the process of batik technique. Consistency in using batik writing technique is motivated by the purpose of establishment of this business to preserve batik culture. In addition, natural coloring applied by batik entrepreneurs to take advantage of all natural materials, such as wood, leaves, noni tree, soga, and all natural resource extracts is classified in process innovation that refers to changes in the way the product and services are made and created (Hilmi 2010). In this case, the use of natural materials refers to a change in batik dyeing technique, which formerly used synthetic dyes and nowadays uses natural dyes more.

Batik Celaket

Product Innovation

1. Product Differentiation

The owner of Batik Celaket SME also innovates by creating a variety of other products made of batik that are more diverse, such as handbags, shoes, shirts, dresses, pillowcases, scarves, laptop covers, even mukena (muslim woman’s cloak covering head and body at prayer). In fact, the innovation is usually adjusted with the increasing demand for certain goods at certain times, for example, the demand of mukena (praying equipment) before the
month of Ramadan and the feast. In this case, product innovation through product differentiation is associated with the development of company’s core competency as stated by Richardson’s in Ceramy (2009). One of competency developments for business is by how to fulfill customer’s demands.

2. Symbolic Motif

Batik Celaket has a distinctive motif of Malang, such as floral and singoedan, a symbolic character of Malang citizen. Distinctive motifs of each batik-producing region appeal to customers. The uniqueness of Batik Celaket motif is influenced by innovative power (Calantone in Neira et al. 2009). In this case, this typical motif arises from an innovative power by utilizing everything possible in creating a distinctive motif.

3. Motif Improvement

An interview indicates that product innovation through motif improvement on Fashion, Trend, and Socialization Media. As a fashion, consumption of batik trends not only among certain people or circles, but also public generally, and has even become a fashion product, both locally and internationally. As one of embodiments in building fashion in the world of batik, the owner of Batik Celaket SME has put on a batik fashion show as one of efforts to introduce and to instill love towards batik. In terms of trend, batik also follows the trend in community. Preservation of batik culture that has started to be abandoned by the younger generation moves the owner of Batik Celaket SME to expand the business using fresher motifs and colors. With a theme “Parents’ Heritage Organized by Spirit of The Youth”, Batik Celaket creations combine flower-dominated motifs and bright colors and additionally target the young people, especially, as one of market segments in an attempt to avert their reluctance from using batik, which they consider antiquated. In addition to venturing into the world of fashion, batik is also used as a proper socialization medium to popularize something in order to get known, understood, and internalized by society. Batik as a socialization medium emerges from events and people’s lives, for example, caterpillars that had disturbed the residents in Probolinggo became a motif idea for batik shirt.

Process Innovation

Some batik techniques were recognized, such as batik tulis and batik cap, has long been popular in Indonesia. However, another batik technique was found over time. It is called batik cor that can only be found in and is a typical of Batik Celaket. Associated with the theory, by its nature, Batik Celaket has implemented incremental innovation through innovative process of new batik technique as the product, batik cor, is a product of innovation that is basically not too far from the idea of the pre-existing products (batik tulis and batik cap) yet providing significant added value for the customers. Batik cor is linked to a form of incremental innovation as the process still includes malam only with a different application technique. Besides, the interview shows Batik Celaket uses two coloring techniques namely synthetic and natural dyes but predominantly uses synthetic. The difficulty in obtaining and producing natural dyes become one of the dominant reasons Batik Celaket uses synthetic dyes while natural dyes is used to meet the needs of customers who prefer naturally dyed batik.
Prototype of Batik Innovation

Prototype model presented in Figure 4 shows that innovation in Batik SME particularly involves products and production process. Innovation in batik products refers to product differentiation, typical motifs, motif improvement, and the standard grip. Whereas, the process innovation refers to the technique and coloring. Both product innovation and process innovation are strategy reference for improving the development of Batik SMEs.

Major Proposition

In this study, the major proposition is formed in accordance with the minor proposition preconceived about industry environment analysis of Batik SME as follows: “Product innovation and process innovation encourage batik enterprises to develop strategy for establishing Batik SMEs”.

Research Proposition

Based on appropriate themes of narrative description which then summarized on a prototype model, it is recognized that the factor of product differentiation, a typical motif, motif improvement, and standard grip in product innovation form the following minor propositions: “Product differentiation, typical motif, motif improvement, and standard grip are development strategy to enhance batik SMEs”.

Next minor proposition is related with Batik SMEs’ process innovation: “The technique of making and coloring batik is a development strategy to enhance Batik SMEs”.

Innovation and Industry Environment Analysis of Batik SMEs

Figure 5 is a prototype model of the relationship between environment analysis of industry and innovation applied to Batik SMEs studied: Batik RadenWijaya and Batik Celaket.
Figure 5. Prototype Model of Innovation and Industry Environment Analysis of Batik SME

Source: Primer Data, 2014 (processed)

REFERENCES


