

The influence of external environment, internal environment, and motivation on competitiveness through the product innovation of Lasem *Batik* Tulis SMEs in Indonesia

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Abstract: The purpose of this research is: 1) to analyse the influence of external environment, internal environment, and motivation on SMEs product innovation; 2) to analyse the influence of external environment, internal environment, and motivation on competitiveness; 3) to analyse the influence of product innovation on the competitiveness; 4) to analyse the influence of external environment, internal environment, and motivation on competitiveness through product innovation. The population of this study is the business owners of 120 Lasem *Batik* Tulis (*batik tulis* means hand-drawn *batik*) SMEs in Rembang. It consists of 82 SME members of *batik* cooperatives and 38 SMEs of BNI incorporated in Kampong BNI, Bagan Village, Rembang; all of them were selected to be the objects in this study. The result of this analysis shows that: 1) external environment, internal environment, and motivation have significant effect on product innovation; 2) internal environment has a significant effect on competitiveness while external environment and motivation have insignificant effect on competitiveness; 3) product innovation has a significant effect on competitiveness; 4) product innovation can mediate the influence of external environment, internal environment, and motivation on competitiveness.

Keywords: competitiveness; product innovation; external environment; internal environment; motivation; Indonesia.

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1 Introduction

The competition among business actors of Lasem *Batik* Tulis often occurs especially on its product marketing because apart from the adjacent location of the business venue, Lasem *batik* products also have similar colour, motifs, and price. This has encouraged the business actors to develop new *batik* motifs and adjust to consumer demands in the market. Porter (1998) stated that competition is the core of success or failure of a business in which business actors who win and succeed the competition will be increasingly driven to be more dynamic, innovative on its products, and serve the best service for the customers so that competition is considered as a motivating opportunity. To improve the competitiveness, the business actors of Lasem *Batik* Tulis produce innovative motifs that are the typical Lasem pattern like *sekar jagad*, *watu kricak*, and *tiga negeri* which, currently, there are about 114 motifs. Besides that, they give a variation of price as the prima type of fabric is cheaper than the premise type of fabric. The colour of the *batik* also determines its price in which the more colourful the *batik*, the higher the price. An effective way to compete is to meet the demand of the consumers better than the other competitors (Kahn, 1998). According to Amabile et al. (1996), innovation is a successful application that came from creative ideas. SMEs have different competitions in the superiority of expertise and resources; thus, innovation has a positive effect on competitive advantage (Saida et al., 2016).

Lukas and Ferrell (2000) said that product innovation can be explored through three things including product excellence, uniqueness, and cost efficiency. Product innovation is a strategy to adapt in dynamic market environment so that business actors are required to create new *batik* design that is suitable for the final product of clothes or dress, to make faster production method that produces good quality products, and to select suitable raw materials so that the product is durable and could have bright colour based on market demand. The sales of the *batik* are influenced by the purchasing power of the public. Usually, when their sales experienced a decrease, the business actors will give discounts. This makes other entrepreneurs competing to reduce their prices and the ultimate impact is competition. Ungerman et al. (2018) asserted that innovation brings different impacts on SMEs and on large companies. The biggest impact is on the automotive industry with European corporate culture; this indicates that innovation is one factor in competitiveness. In companies with low technology levels, marketing innovation is not an essential factor in enhancing the positive effects of additional innovation activities on company performance (Aksoy and Cengiz, 2016).

Pearce and Robinson (2013) argued that company's external environment is the circumstances and forces which determine the competitive situation and influence the choice of strategy of the business actors. Furthermore, Pearce and Robinson (2013) believed that strategic management model has divided the external environment into three interacting segments such as operational environment, industrial environment, and remote environment. An operational environment that is also called competitive

environment consists of competitors, creditors, customers, workforce, and suppliers. Industrial environment consists of barriers to entry, suppliers power, buyers power, substitution availability, and competition between companies. Meanwhile, the remote environment includes the economic, social, political, technological, and ecological factors. The external environment is divided into two categories such as industrial environment and remote environment. The remote environment factors are assessed through the political, economic, social, technological factors while the industrial environment factors are examined through the concept of competitive strategy by Porter (1980) that consisted of barriers to entry, suppliers power, buyers power, substitution availability, and competition between companies. The external environment is everything that relates to consumers, suppliers, and partnership and that those three have an influence in increasing the effectiveness of the supplier chain (Coulthard, 2007). Distanont and Khongmalai (2018) stated that innovation reinforces excellence in competition through external factors; SMEs need to adapt and prepare themselves to face future economic changes which will occur not only at the global level, but also at the regional and state level.

Market competition is influenced by the ability of business actors to run the business with entrepreneurship spirit, by how they paying attention to the welfare of employees in running its business, by how they manage the raw materials, and by how they run the sales strategies and good relationships with fellow business actors in which this will determine the success of the *batik* business. A company can compare the past success with the company's current ability to identify future capabilities (Pearce and Robinson, 2013). Umar (2008) wrote that the internal environment is the aspect that existed within a company in which it is studied through some approaches such as functional approach, value-chain approach, learning curve or experience, core competence, and balanced scorecard. An internal environment can be said as the dynamics of the relationship which have moderation and mediation role in the components of the organisation as a culture, strategy, leadership, decision-making process, structure, and resources (Coulthard, 2007). Innovation will be a strategic tool in the competition; it is needed to establish and to improve business to create competitive advantage (Distanont and Khongmalai, 2018).

Maslow (1970) explained that motivation is the desire or need that becomes the background of a person to work. Maslow introduced the individual needs of humankind including physiological needs, safety, social, appreciation, and self-actualisation. The business actors of *batik* are motivated by seeing the success of other *batik* business actors, therefore, it encouraged them to learn and develop their business to have such business competitiveness. Business motivation has a significant effect on business ability and success (Gemina et al., 2016). Lasem *Batik* Tulis is famous for its high-quality product, durable colour features, and typical production process which is not owned by other regions so that the price of the *batik* is relatively higher than the *batik* from other cities. Based on the recognition from UNESCO that Indonesian *batik* is a world heritage on 2 October 2009, it is expected that the enthusiasm of business actors in Lasem *Batik* Tulis SMEs to develop *batik* business can increase by developing innovative motifs, design, and effective use of *batik* fabric which not only fabric but also in the form of clothes, blouse, skirt, and handcraft like *batik* bag and other accessories. The efforts of the government to improve *batik* competitiveness at international level also support this matter through the Ministry of Industry and Trade of The Republic of Indonesia to build a brand with Indonesian *batik* on the international level through '*batik mark*' which is a

sign to show the identity and characteristics of Indonesian *batik*. This '*batik mark*' consists of three kinds of *batik* namely *batik tulis*, *batik cap*, and *batik kombinasi* which is a combination of *batik tulis* and *batik cap* with a copyright number 034100 dated 5th June 2007 and with the regulation of the Ministry of Industry number 74/M-IND/PER/9/2007 about the mark of '*batik Indonesia*' on 18th September 2007. By that, Lasem *Batik Tulis* SMEs can use this *batik* mark as the original product of Indonesia in international level.

A competitive advantage is a success factor in winning the market competition that SMEs must have. As a result, SMEs can sustain the business in the future through the innovation of *batik* products that meet the needs of the dynamic market. The dynamics of the growing external environment needs to be anticipated and SMEs need to take advantage of the internal environment in running the business as well as having high motivation to develop product innovation and its competitiveness. Based on the background of the problems above, the author is interested to examine the influence of external environment, internal environment, and motivation on competitiveness through the product innovation of Lasem *Batik Tulis* SMEs. The purpose of this research is to analyse the influence of external environment, internal environment, and motivation to product innovation and competitiveness of SMEs and to analyse the effect of product innovation on SMEs competitiveness and analyse the influence of external environment, internal environment, and motivation on SMEs competitiveness through product innovation.

2 Literature review

2.1 Competitiveness

The concept of competitiveness is commonly known as the competitive advantage that is developed from a generic strategy (Porter, 1980). Things that can indicate the variables of competitive advantage are:

- 1 imitability, the difficulties of competitors to imitate the company's advantage
- 2 durability, the duration in maintaining the superiority of the organisation's strategic assets and organisational success
- 3 the ease to copy, the ability of competitors to match the organisational strategic assets.

Competitive advantage is the core of corporate performance in market competition. Corporate excellence basically grows from the values or benefits that companies can create for their customers. If the company is able to create excellence through one of the three generic strategies, the company will get a competitive advantage (Aaker, 1989). Barney and Tyler (1991) argued that sustainable competitive advantage comes from valuable resources, scarcity, difficulties level of imitation, and substitutability. The abilities and resources are said to be substitutability in two senses; cannot be duplicated or, instead, can replace the similar resources owned by a competitor (Barney and Tyler, 1991). Competitiveness in the view of Porter (1980) is the addition of values or benefits of the products and services that can be created by a company for the consumer in which formed with several indicators; imitability, durability and ease to copy. Wang et al.

(2016) claimed that companies implementing Industry Revolution 4.0 are better at meeting customer needs of product functionality, quality and service life, which makes the company more competitive. SMEs having limited resources find it difficult to concurrently explore and exploit.

2.2 Product innovation

Christofi et al. (2014) define product innovation as a continuous and cross-functional process that involves and includes more competencies within and beyond organisational boundaries. According to Drucker (1995), innovation is a specific tool of entrepreneurship, an act that provides new strengths and abilities to create wellbeing. Innovation creates resources which was initially worthless until one finds the benefits of something in nature and giving it an economic value. Furthermore, Drucker (1995) added that successful business actors are not simply improving something that already existed but also creating new and different values, new satisfaction, and transforming materials into resources or incorporating existing resources in a new configuration which is more productive. Lukas and Ferrell (2000) said that innovation is a technique or product which uses new technology to make it more useful. Product innovation is one of the most important competition factors to achieve success where the business environment always in a rapid change (Han et al., 1998). Amabile et al. (1996) described that innovation is the successful implementation from creative ideas in a company. The process of making motifs and colouring is the stage of *batik* innovation which requires high skill and not owned by all *batik* business actors. In consequence, this generates the problem of motifs imitation and modification which can trigger unhealthy competition in the business environment of Lasem *batik*. Innovation is a very important thing in business organisation (Han et al., 1998). Menon et al. (1999) stated that an innovative company is successful because it could exploit and boost its main ability with unique and superior way. On the one hand, Cooper (1999) identified six factors of success to create product leadership:

- 1 differentiation, superior product
- 2 clear and sharp for a start-up product
- 3 have a strong response to the competition, market, technique, and finance
- 4 the marketing is running well
- 5 good technological action
- 6 proper cross-functional team.

SMEs can take advantage of every opportunity to create different business ideas or services thus giving it an economic value. The product innovation according to Drucker (1995) is a specific tool of business actors to take advantage of different business opportunities in order to create valuable economic resources which are formed by three indicators such as product excellence, product uniqueness, and cost efficiency. Business success is usually related to an entrepreneur ability to create, to distribute, and to differentiate wealth, which is usually related to innovation (Vala, 2017). The results of the study conducted by Saida et al. (2016) present that the SME innovation strategy in Indonesia is the ability to make better products regarding the production process which

uses technological advances, as well as regarding technology development and maintenance. Product innovation has a significant effect on competitive advantage (Nuryakin, 2017).

2.3 External environment

Pearce and Robinson (2013) believed that the company's external environment is all circumstances and forces which influence the options of strategy in a company in determining the competitive situation. The strategic management model divides the external environment into three interacting segments such as operational environment, industrial environment, and remote environment. An operational environment that is also called competitive environment consists of competitors, creditors, customers, workforce, and suppliers. Industrial environment consists of barriers, suppliers power, buyers power, substitution availability, and competition between companies. Meanwhile, the remote environment includes the economic, social, political, technological, and ecological factors. Michael and Yulk (1993) explained the importance of the relationship between decision makers within the company and those involved supply chain such as suppliers, customers, partners, and other parties like the association of industry, family, friends, business, researchers, consultants, competitors, government, and so forth. They continued that the external environment is associated with environmental factor while the internal environment is associated with the organisational factor. The indicators used by Lumpkin and Dess (1996) as the characteristics of environmental factors are dynamism, munificence, complexity, and industry characteristics. The research findings of Distanont and Khongmalai (2018) suggest that innovation reinforces excellence in competition through external factors. The organisation's external environment analysis and consideration, as well as the creation of competitive advantage are a strategic direction to win economic competitiveness at the national level (Vasilieva and Kuznetsova, 2016). The external environment needs to be well anticipated because it is very influential on the sustainability of the SMEs. This could be supported by government protection through policy and program assistance in which it will make SMEs survive in competitive external environment situation. External environment according to Pearce and Robinson (2013) is all circumstances and forces which influence the options of strategy in a company in determining the competitive situation. This is formed by some indicators such as competitors, supplier power, substitution, economic factors, and technology.

2.4 Internal environment

According to Hubeis and Najib (2008) internal environment is an organisational environment based on norms, directions, and specifications. Pearce and Robinson (2013) also added that in analysing internal factors, it begins with the separation of three types of core resources such as; tangible assets which are the physical and financial means used to provide value for customers in the form of production facilities, raw materials, financial resources, real estate, and computers; intangible assets which consist of brand reputation, organisational morale, technical understanding, patents, trademarks as well as accumulated experience in the organisation in which these assets are very important in creating competitive advantage; organisational capability that is a skill in terms of capabilities and ways to combine assets, people, and processes used by companies to

compose inputs into outputs. Internal environment can be defined as the dynamics of the relationship (relationship dynamism) which has a moderating and mediating role in the components of the organisation like culture, strategy, leadership, decision-making process, and resources (Coulthard, 2007). Some literature identify the characteristics of the internal environment which are trust building, commitment to ethical standards, open communication channels, a support system for individuals, and encouragement to seek for the opportunity (Wood et al., 2002). Lumpkin and Dess (1996) stated that the characteristics of organisational factors are the size of the company, organisational structures, company's strategy, strategy-making process, company's resources, company's culture, and peak-team management characteristics. Strengthening the capacity of business actors by learning and training through various coaching either individually or from the government is very necessary for SMEs to deal with the dynamics of the internal environment in the company. By that, it can be said that the essence of business is the ability of business actors to utilise its tangible and intangible assets to gain competitive advantage. In addition to the internal context in the organisation, external factors are also crucial, particularly those that will lead to innovation development. Innovation will be a strategic tool in the competition; it is needed to establish and to improve business to create competitive advantage in order to achieve sustainable development (Distanont and Khongmalai, 2018). The internal environment which is the strength of tangible and intangible assets and organisational capabilities that value customers have such competitiveness which also converts inputs into outputs within organisations. This is formed by several indicators such as culture, strategy, leader, decision-making process, and resources.

2.5 *Motivation*

Robichaud et al. (2001) presented entrepreneur motivation in four terms: extrinsic appreciation, intrinsic appreciation, freedom/autonomy, and security; while Lyon et al. (2000) asserted that entrepreneurial motivation is formed from one's entrepreneurial-oriented character. Maslow (1970) argued that motivation is the desire or need that becomes the background of a person to work. According to Maslow's theory, a person will not feel the second demand until the first demand or the third demand is met and so on. The various levels of needs in Maslow's hierarchy are physiological needs, safety needs, the needs for love, affection and possession, appreciation, and self-actualisation. Physiological needs also include biological needs which consist of the need for oxygen, food, water, and constant body temperature. They are the strongest necessity because if a person loses all the necessities, this is the first physiological need that comes first in the search for that person's satisfaction. Safety needs are when all physiological needs are met and no longer controlling the thoughts and behaviours; that is when the need for safety is activated. Furthermore, when the safety and physiological needs are met, the needs for love, affection, and possession can arise later. Maslow added that people try to overcome the feelings of loneliness and alienation. When the first three classes of needs are met, the need for appreciation can be dominant. It involves the need for one's and others' self-esteem. Humans have the need for a stable level of self-esteem based on a high level and respect for others. When this need is met, a person feels confident and valuable in the world. Finally, if all the above needs are met, the next is only the needs of self-actualisation. Maslow described self-actualisation as the need for a person to be what and to do what. According to Jerome (2013) in his research which

applies Maslow's theory in organisational culture and its impact in Nigeria, he found that Maslow's theory can suggest how managers lead employees or subordinates for self-actualisation.

Burns (2007) explained that business actors' motivation and determination come from a very high motivation which almost becomes an unbearable drive to achieve economic goals. Burns (2007) also emphasised different approaches to self-motivation and the importance of self-actualisation in entrepreneurship. In his research, Rahman (2015) adopted the motivation theory in the leadership of SMEs, a study in Malaysia, by comparing the three motivation theories of motivation-hygiene by Herzberg, hierarchy of needs by Maslow, and theory of needs by McClelland. It appears that McClelland's theory of needs is more appropriate for SMEs in Malaysia because of its application and flexibility. Greenberg and Baron (2003), on the other hand, suggested that Maslow's hierarchy of needs is still relevant for the research of motivation in SMEs because this theory can be applied to organisational orientation and employee motivation. Jerome (2013) believed that the theory of hierarchy of needs can show how leaders can lead employees or subordinates to have self-actualisation. Latham and Pinder (2005) then stated that the concept of motivation refers to internal factors that encourage actions and external factors that can serve as a call to action. Hessels et al. (2008) in his research pointed out the importance of the role of entrepreneurial motivation to understand the outcomes of entrepreneurship. There is a different opinion in regards to the motivation of SMEs that motivation does not seem to contribute to a business growth because SMEs only require ad-hoc and short-term planning (de Jong and den Hartog, 2003; Abdullah et al., 2014; Suess, 2014). Whereas, Wang et al. (2006) said that employers' motivation is the main reason why many small businesses are not strategically planned; the motivation of small business actors varies and significantly affects the operation of the business which in most cases, operators are the business actors. As a result, the research on the planning of small business strategy needs to focus on the motivation and personal ambition of small business actors. The personal motivation that contributes the theory of Maslow on SMEs leadership has been studied by Rahman (2015). The research took the case of SMEs in Malaysia which examines the motivation of SMEs related to the perspective of strategic management in the research entitled 'The motivation of business actors on competitiveness through product innovation'. The motivation of SMEs is the force for the fulfilment of needs in entrepreneurship with a number of indicators; physiological needs, safety needs, social needs, needs of appreciation, and self-actualisation needs.

3 Conceptual framework

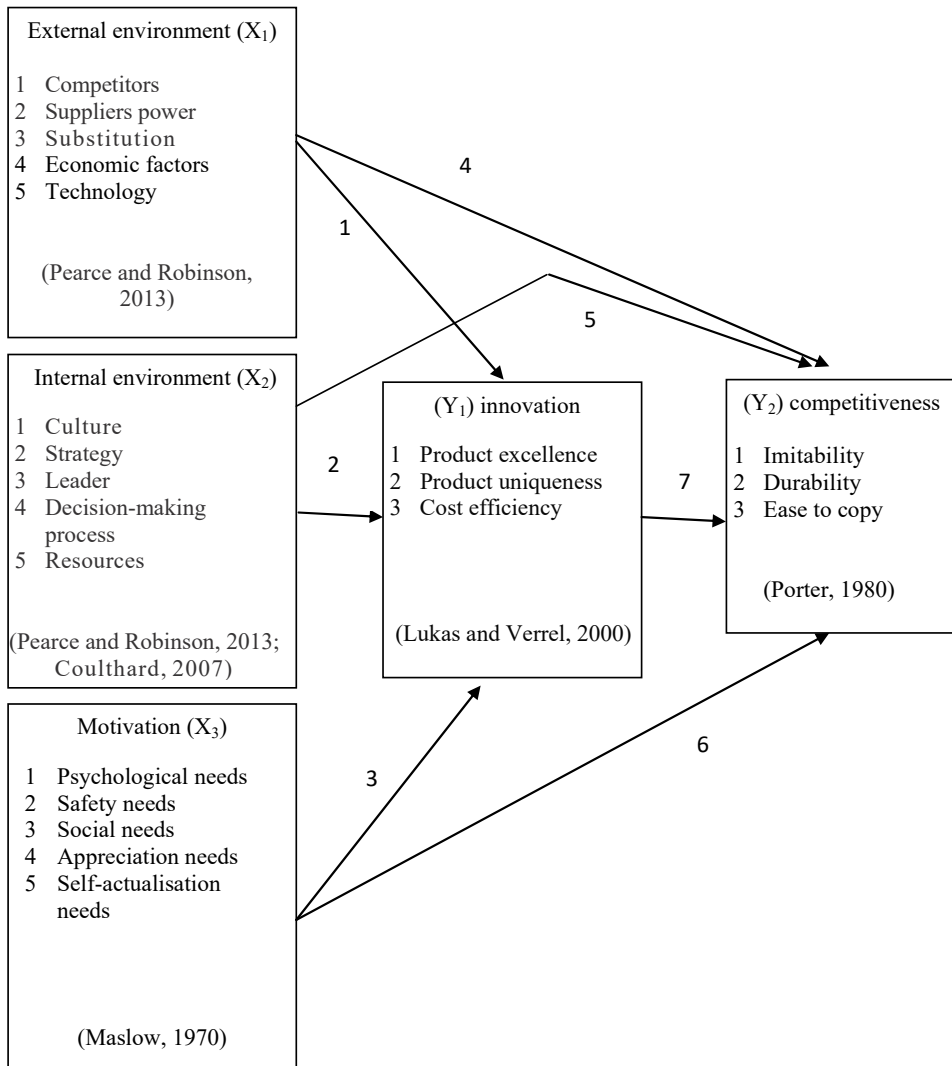
Competitiveness plays an important role in maintaining and developing businesses. Businesses which have varied products and good quality will win the competition. Varied and good quality products require innovation as stated by Curatman et al. (2016) that product innovation has an effect on competitiveness. Syukron (2016) addressed that the variable of product innovation acts as a partial mediating variable that indicates there is an indirect effect of the variables of market orientation and entrepreneurial orientation on competitive advantage while Suendro (2013) pointed out that higher innovation of the product will affect the marketing performance and increase the sustainable competitive

advantage. The main purpose of product innovation is to meet the demand of the market so that product innovation is one of the factors that can be used as a competitive advantage for every company (Han et al., 1998).

Product innovation can be created because it is driven by the dynamics of the external and internal environment as well as the motivation as the force to turn ideas into reality as suggested in the research of Rahayu (2016) that there is a positive influence between the prospector strategy and the environmental management accounting. The use of environmental management accounting has a positive effect on process innovation, but not with product innovation. Moultrie et al. (2007) emphasised that a company needs to pay attention to the physical environment that is creative and innovative. Hurley and Hult (1998, p.42) also concluded that companies with high innovation capabilities will be more successful in responding their environment and developing new capabilities that lead to superior competitive advantage and performance. Han et al. (1998) agreed that innovation becomes an increasingly important medium of survival not just in the growth of facing the uncertainty of the environment and business competition condition. Besides that, Beaver and Prince (2002) wrote that the government should think about the motivation that can improve the innovation of business actors in facing the increasingly competitive and dynamic market challenges. Yunal and Indriyani (2013) argued that business motivation has a direct influence on the growth of the business while there is no direct influence on business growth through product innovation. Shane (2003), on the other hand, believed that there is an influence between business motivation and business growth through innovation. Chen et al. (2010) then added that there is a significant influence between motivation and innovation. Furthermore, Distanont and Khongmalai (2018) pointed out that external factors are more influential on the development of business innovation at the micro level than at the macro level.

Competitiveness can be influenced by the dynamics of the external environment, internal environment, and motivation of business actors as proposed in Beaver and Prince (2002) research that government support or related institutions can provide motivation for industry to achieve competitive advantage. Bennett and Smith (2002) determined that external environment has no significant effect on the company's competitive advantage. Meanwhile, Nurlina et al. (2013) suggested that the control of the internal environment and entrepreneurial spirit is an important basis for micro business actors in preparing differentiation strategies. The differentiation strategies can be applied appropriately to enhance competitive advantage. Purnama (2010) believed that in order to improve the success of small business, the business ability is certainly needed and to improve this ability, business motivation is required. Rahman (2015) who studied motivational theories by comparing the motivating theories and Herzberg's hygiene, Maslow's hierarchy of needs, and McClelland's theory of needs found that McClelland's theory of needs is more appropriate for Malaysian SMEs because of their application and flexibility. Therefore, because the research which examined the variable of motivation and Maslow's hierarchy of needs on the leadership of SMEs have been done, this study chose to examine the theory of Maslow's hierarchy of needs that is related to its perspective or strategic outlook. Then, this also used as the basis of research in the individual motivation of business actors on competitiveness through product innovation.

Figure 1 Conceptual model framework



Source: 1 Moultrie et al. (2007), Rahayu (2016) and Hurley and Hult (1998)
 2 Rahayu (2016) and Han et al. (1998)
 3 Yunal and Indriyani (2013), Shane (2003), Beaver and Prince (2002) and Chen et al. (2010)
 4 Bennett and Smith (2002)
 5 Nurlina et al. (2013) and Hurley and Hult (1998)
 6 Purnama (2010) and Beaver and Prince (2002)
 7 Syukron (2016), Suendro (2013) and Curatman et al. (2016)

Based on the description, the author develops and continues Syukron (2016) research and Curatman et al. (2016), Hurley and Hult (1998) and Shane (2003) who stated that product innovation is a mediation to competitiveness. However, in this research, the author develops such factors which influence product innovation where in previous research it was influenced by market orientation and entrepreneur orientation. In this research, product innovation is influenced by external environment, internal environment, and motivation because in the study of Yunal and Indriyani (2013) there is no influence in between business motivation and business growth through product innovation while the environment affects the innovation (Moultrie et al., 2007). Different results are found by Bennett and Smith (2002) that the external environment does not significantly influence the competitive advantage of the company. Beaver and Prince (2002) suggested that the government should think of motivation which can enhance business innovation in facing the increasingly competitive and dynamic market challenges. Because of this, a conceptual model framework for the relationship of research variables can be seen in Figure 1.

The hypothesis proposed in this research are:

- H₁ External environment, internal environment, and motivation influence product innovation.
- H₂ External environment, internal environment, and motivation influence competitiveness.
- H₃ Product innovation influences competitiveness.
- H₄ External environment, internal environment, and motivation influence competitiveness through product innovation.

4 Research methods

4.1 Types of research

This is a quantitative research that aimed to predict the relationship among variables.

4.2 The scope of research

The scope of this research is in the space of strategic management, especially about competitiveness. Competitiveness in this study is the competitiveness of Lasem *Batik* Tulis SMEs through product innovation. This study also examines some of the variables that affect Lasem *Batik* Tulis SMEs namely external environment, internal environment, motivation, and product innovation.

4.3 Operational definition of research variables

- 1 Competitiveness is the ability of a company to produce values or benefits of the product. Competitiveness is consisted of several indicators such as imitability, durability, and ease of copy.

- 2 Product innovation is the company's ability to make differences that give character to the product. Product innovation is formed by three indicators; product excellence, product uniqueness, and cost efficiency.
- 3 The external environment is an affecting factor from outside the business. This influences the production process, business operation, marketing, and business competition, and can become the strength and threat to business sustainability that affects the choice of business strategy. The external environment itself is constructed by a number of indicators such as competitors, supplier power, substitution, economic factors, and technology.
- 4 Internal environment all circumstances which identify the potential in the company. The internal environment is formed by; culture, strategy, leader, decision-making process, and resources.
- 5 Motivation is the driving factor for the fulfilment of needs in entrepreneurship. Motivation is also formed by a group of indicators which are physiological needs, safety needs, social needs, appreciation needs, and self-actualisation needs.

4.4 Data and sample

The research was conducted in Rembang Regency of Central Java, Indonesia. The business actors of Lasem Batik Tulis SMEs in Rembang reach as many as 120 SMEs which consist of 82 SMEs members of batik cooperatives and 38 SMEs of BNI incorporated in Kampong BNI, Bagan Village, Rembang; all of them were selected to be the object in this study. By that, this study can be called as population or census study.

4.5 Data analysis

The type of data in this research is primary data. The primary data is collected from respondents on the proposed statement. Analisis data teknik analisis model struktural (SEMs), dengan bantuan program Analisis Moment of Structure (AMOS), instruments used in this research were questionnaires with several items of questions consisting of one endogenous variable called as competitiveness, one intervening variable namely innovation, and three exogenous variables which are the external environment, internal environment, and motivation. The measuring scale of this research instrument is a Likert scale of five-points; strongly agree (5) to strongly disagree (1).

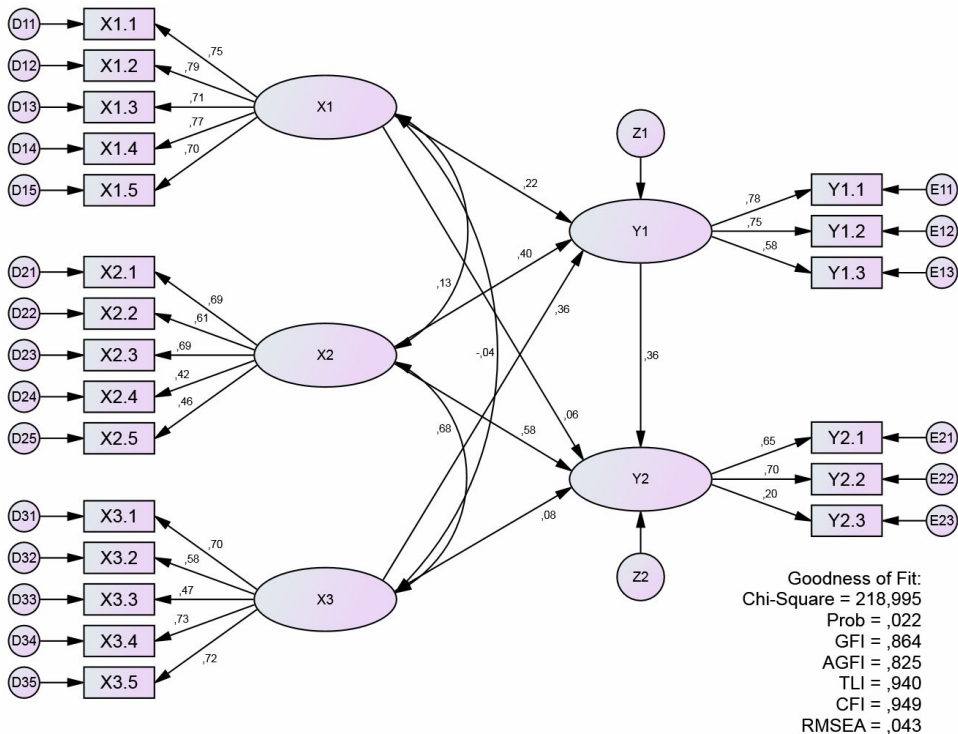
5 Results

The results of SEMs assumption showed that there are no problems of normality, outliers, and multicollinearity. The data observation was already qualified to be tested on structural equation models which were built with the assistance of AMOS. The test results of the whole modelling are illustrated in Figure 2.

The results of the structural equation model analysis are the acceptance criteria of structural equation model that will be compared with the *cut-off* value. The evaluation of *goodness-of-fit indices* are presented in Table 1.

Table 1 shows a summary of the results obtained in the analysis and the recommended value to measure the feasibility of the model. The test results of *goodness-of-fit indices* structural model show that the value of CMIN/DF and RMSEA have been qualified as suggested even though the value of chi-square, p-value, GFI, AGFI, TLI, and CFI are in marginal value, the structural equation model is able to become a model of analysis to test the hypothesis of the research. Sanusi (2011, p.187) explained that a model is said to good if one or two criteria of *goodness-of-fit* able to fit the *cut-off* value.

Figure 2 Results of structural equation model of the research (see online version for colours)



Notes: X1 – External environment, X1.1 – competitors, X1.2 – suppliers power, X1.3 – substitution, X1.4 – economic factor, X1.5 – technology, X2 – internal environment, X2.1 – culture, X2.2 – strategy, X2.3 – leader, X2.4 – decision-making process, X2.5 – resources, X3 – motivation, X3.1 – physiological needs, X3.2 – safety needs, X3.3 – social needs, X3.4 – appreciation needs, X3.5 – self-actualisation needs, Y1 – product innovation, Y1.1 – product excellence, Y1.2 – product uniqueness, Y1.3 – cost efficiency, Y2 – competitiveness, Y2.1 – imitability, Y2.2 – durability and Y2.3 – ease to copy.

Table 1 Goodness-of-fit final model

Goodness-of-fit	Test value	Criteria	Description
Chi-square (χ^2)	218.995	211.21	Marginal
P-value	0.022	>0.050	Marginal
CMIN/DF	1.223	<2.000	Good fit
RMSEA	0.043	<0.080	Good fit
GFI	0.864	>0.900	Marginal
AGFI	0.825	>0.900	Marginal
TLI	0.940	>0.950	Marginal
CFI	0.949	>0.950	Marginal

Source: Primary data, processed in 2017

Table 2 Hypothesis test results

Variable	Direct effect	Indirect effect	Total effect	Prob.	Result
X1 → Y1	0.222			0.023	Significant
X2 → Y1	0.396			0.020	Significant
X3 → Y1	0.355			0.029	Significant
X1 → Y2	0.057			0.584	Not significant
X2 → Y2	0.584			0.004	Significant
X3 → Y2	0.075			0.662	Not significant
X1 → Y1 → Y2	-	0.079	0.136	-	Significant
X2 → Y1 → Y2	-	0.141	0.725	-	Significant
X3 → Y1 → Y2	-	0.127	0.202	-	Significant
Y1 → Y2	0.357			0.047	Significant

Source: Primary data, processed in 2017

Based on the test result, the structural equation of the first hypothesis can be generated as follows: $Y1 = 0.222 X1 + 0.396 X2 + 0.355 X3 + 0.073$. The variable of external environment, internal environment, and motivation have the p -value ≤ 0.05 , which are 0.023, 0.020, and 0.029. The result of the *standardised regression weight* on external environment is 0.222 while the internal environment is 0.396 and motivation is 0.355. Based on this data, motivation has a dominant effect on product innovation compared to external environment and internal environment factors. It points out that the variable of external environment, internal environment, and motivation have a significant effect on product innovation. By that, the first hypothesis is statistically accepted.

The second structural equation of the first hypothesis is: $Y2 = 0.057 X1 + 0.584 X2 + 0.075 X3 + 0.357 Y1 + 0.014$. The variable of internal environment has a p -value ≤ 0.05 which is 0.004 with *standardised regression weight* of 0,584; the p -value of the external environment is 0.057, while motivation is 0.075; each of which the result of *standardised regression weight* are 0.584 and 0.662. Based on this data, it appears that the internal environment affects competitiveness significantly. This emphasises that internal environment significantly affects competitiveness; whereas,

external environment and motivation show no significant effect on competitiveness. Thus, the second hypothesis is statistically rejected.

The structural equation from the third hypothesis test result is $Y_2 = 0.357 Y_1$. The variable of product innovation has a $p\text{-value} \leq 0.05$ which is 0.047. The result of the *standardised regression weight* of product innovation is 0.357. It can be argued that the variable of product innovation has a significant effect on competitiveness. Thus, the third hypothesis is statistically accepted.

The test results of the fourth hypothesis based on the data of structural equation show that the total effect is greater than the direct effect, i.e.:

- a The total effect of external environment on competitiveness through product innovation is 0.136 with a direct effect of 0.057. So arguably, external environment has a significant effect on competitiveness through product innovation.
- b The total effect of the internal environment on competitiveness through product innovation is 0.725 with a direct effect of 0.584. As a result, internal environment also has a significant effect on competitiveness through product innovation.
- c The total effect of motivation on competitiveness through product innovation is 0.202 with a direct effect of 0.075; therefore, motivation has a positive and significant effect on competitiveness through product innovation.

This indicates that external environment, internal environment, and motivation have a significant effect on competitiveness through product innovation. Consequently, the fourth hypothesis is statistically accepted.

6 Discussion

6.1 *External environment, internal environment, and motivation on product innovation*

External environment, internal environment, and motivation have a significant effect on product innovation. Internal environment is an essential requirement to generate product innovation as well as supporting the leader in providing hope and target to *batik* industry progress in which those are the driver of product innovation. The influence of motivation on product innovation can be said that appreciation is needed to earn a reputation as a businessman of Lasem *Batik* Tulis. This becomes the motivation of the SMEs to generate innovative *batik* products. The external environment is known to influence product innovation significantly. This means that the availability of alternative raw materials can encourage innovation by creating excellence *batik* products that are comfortable to use. The findings of this study are consistent with the research from Moultrie et al. (2007), companies which pay attention to the physical environment will influence the product innovation. This also supported the research from Rahayu (2016) that environment has an effect on product innovation. However, Rahayu (2016) has separated innovation into two indicators: product innovation and process innovation which partially indicates that managing the environment has an influence on the innovation process, but not with the innovation of the products. Besides that, Chen et al. (2010) said that there is a significant influence on motivation and innovation. Internal environment is the main requirement for creating product innovation, reflected by the leader in giving hope and business progress

targets, and is a driver of Product Innovation. Moreover, the effect of motivation on product Innovation is related to the need to get a reputation as a *batik* businessman, which becomes a motivation for entrepreneurs to create product innovation. Furthermore, external environment has a significant effect on product innovation as the availability of alternative raw materials can encourage innovation in *batik* products by creating comfortable-to-wear products. Therefore, SMEs should direct external, internal and motivational factors for product innovation to achieve competitive advantage.

6.2 External environment, internal environment, and motivation on competitiveness

The internal environment is the factor that significantly influences competitiveness while external environment and motivation have no significant effect on competitiveness. Internal environmental significant effect on competitiveness. This can be explained that internal environment, especially leader who has hope and target on its business growth in the future, will be able to push the competitiveness of SMEs by emphasising the durability of *batik* products; this will create a competitiveness on SMEs. This result is consistent with the research from Nurlina et al. (2013) that environment has an effect on competitiveness. Thereby, SMEs, which in this case are business owners or business leaders, must have hopes and targets for business progress towards the future.

External environment has no significant effect on competitiveness, means that external environment with the availability of alternative suppliers cannot affect the existence of SMEs. This is due to the assumption that Lasem *Batik* Tulis is artistic, has strong cultural roots as reflected in the motifs, and that the traditional production process is not easily duplicated as well as due to the local wisdom of Lasem. This is supported by Bennett and Smith (2002) that external environment has no significant influence on competitive advantage. This calls for further research regarding why the external environment does not have a significant effect on competitiveness. It is possibly because *batik* is a traditional product which is difficult to imitate and is the local wisdom.

Motivation is not significant to competitiveness, meaning that employers motivation is reflected by the rate of appreciation that the reputation as a business actor is not able to boost the competitiveness of SMEs. The results of Rahman (2015) are in line with the results of this research that he adopted motivation theory in the leadership of SMEs, a case study in Malaysia. By comparing three theories of motivation such as the motivator-hygiene by Herzberg, the hierarchy of needs by Maslow, and the theory of needs by McClelland, the research showed that the theory of needs by McClelland is more appropriate for SMEs in Malaysia due to its flexibility and application. The research of de Jong and den Hartog (2003), Abdullah et al. (2014) and Suess (2014) found that the theory of motivation does not contribute to the growth of the business for SMEs, it only requires ad hoc and short-term planning. The results of this study are not consistent with the research from Yunal and Indriyani (2013) that motivation will affect the growth of the business as well as the research from Purnama (2010) that motivation of business actors could influence competitiveness. Accordingly, it is intriguing to conduct further research on the motivation of SMEs, which is to find out what motivations can drive their business competitiveness.

6.3 *Product innovation on competitiveness*

Product innovation has a significant effect on competitiveness. Product innovation is taken into account in determining the winning strategies on business competition which will generate comfortable products and perceived as product excellence. This will boost the competitiveness of SMEs so that product innovation is considered as one of the winning strategies on competitiveness. This is in accordance with Yunal and Indriyani (2013) which analysed the influence of product innovation on the growth of a business. The results from Suendro (2013) found that higher product innovation will affect the marketing performance and able to increase the sustainable competitive advantage. Curatman et al. (2016) also explained that product innovation has an effect on competitiveness. SMEs engaged in *batik* production business should focus on product innovation related to comfort; *batik* cloth brings the impression that it is comfortable to wear, which is the product's superiority.

6.4 *External environment, internal environment, and motivation on competitiveness through product innovation*

Product innovation is able to mediate the effect of external environment, internal environment, and motivation on competitiveness. Internal environment has an indirect influence that is more dominant compared to the influence of external environment and motivation on competitiveness. This suggests that the internal environment is a key driver to generate competitiveness through product innovation where the internal environment that is reflected by leaders can boost competitiveness through the creation of product innovation. Therefore, it is important to have innovative products by producing comfortable *batik*. This study is consistent with the research from Syukron (2016) that the variable of product innovation acts as a mediating variable in which this part indicates that there was an indirect influence on the variable of market orientation and entrepreneurial orientation on competitive advantage. This also in line with Suendro (2013) that product innovation can be improved by increasing customer orientation, competitor orientation, and coordination of functions.

The motivation that reflects the needs of the appreciation as business actors can boost the competitiveness of SMEs through product innovation thus innovative *batik* products is a key mediator in the indirect effect of motivation on competitiveness because product innovation can act as full mediation. By that, motivation should be directed to create innovative products that improve the competitiveness of SMEs. This research is aligned with Syukron (2016) that product innovation acts as a mediation which shows an indirect effect on the variable of market orientation and entrepreneurial orientation to competitive advantage. This also in accordance with the research of Yunal and Indriyani (2013) that entrepreneurship motivation has a direct effect on business growth but there is no influence between entrepreneurship motivation on business growth through product innovation. Shane (2003), on the other hand, believed that there is an influence between entrepreneurship motivation on business growth through innovation. Beaver and Prince (2002) even suggested that the government should think of motivation that can improve the innovation of the business actors in facing the challenges of an increasingly competitive and dynamic market.

External environment that is reflected by the availability of a large selection of *batik* material can boost competitiveness through product innovation. In other words, product

innovation is a key mediator in the indirect effect of external environment on the competitiveness of SMEs because product innovation can be a full mediation. Consequently, the external environment should be directed to create innovative products for the improvement of SMEs competitiveness. This research is supported with the research of Hurley and Hult (1998) that a high ability to innovate something will create more successful respond in facing their environment and in developing new capabilities that lead to competitive advantage and superior performance. Moultrie et al. (2007) also stated that companies which pay attention to the physical environment will influence its product innovation.

7 Conclusions and policy implications

7.1 Conclusions

External environment, internal environment, and motivation have a significant effect on product innovation. The internal environment is an essential requirement to generate product innovation. Internal environment significantly affected competitiveness. External environment and motivation have no significant effect on competitiveness. Product innovation gives a significant effect on competitiveness. Producing comfortable products that are perceived as an excellence will boost the competitiveness of SMEs. Product innovation is able to mediate the effect of external environment, internal environment, and motivation on competitiveness. An internal environment which has indirect influence is more dominant than the other variables.

This study reveals that the external environment does not significantly affect the competitiveness of SMEs. Additionally, the internal environment has an important and the strongest role in increasing competitiveness and willingness to innovate. The managerial and theoretical implications of this research are that business actors (SMEs) should make product innovation and pay attention to internal factors as a strategy to win business competitiveness.

7.2 Policy implications

The government should develop the competitive advantage strategy in Lasem *Batik* Tulis SMEs by providing access to national and international exhibitions. Explore and disseminate the local knowledge and excellence of Lasem *batik* as an added value for the *batik* products through social media or TV and cooperating with well-known industry/factory to use the packaging motifs/pattern of Lasem *batik*. Also, increasing the cooperation with other Lasem *batik* business actors thus forming a communal market through the strengthening of the brand as a mutual or joint brand.

The business actors should maintain the characteristics of Lasem *batik* both from the motifs and the colours on each product. Then, making innovative *batik* products as a business development strategy and developing the *batik* design with software and local culture. This also can be done by improving the marketing strategy through online media or online store so that Lasem *batik* is widely known.

For further research, it is suggested to do more research related to the motivation of business actors for the competitiveness of SMEs and in relation to business development including an increase in turnover, profit, assets, and its contribution to the alleviation of

unemployment and poverty. This study holds some limitation and imperfection: the brand or reputation is not taken into account so further research is expected to consider the *batik* brand in respect of SMEs competitiveness.

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