

## Model Product Innovation and E-Commerce Portal in Management of Batik Craftsman MSMEs Based Industrial Sustainability



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**ABSTRACT:** The development of the digitalization era requires batik craftsmen MSMEs Seberang Jambi City to innovate through the local industrial sector and prepare themselves to compete globally by increasing production productivity so that the products produced have commercial selling value and can maintain their sustainable existence. This phenomenon provides an opportunity to revitalize the batik industry sub-sector Seberang Jambi City so that it can accelerate achievements in maintaining the sustainable existence of batik MSMEs. One of them is by innovating products and E-Commerce portal models in managing MSMEs batik craftsmen based on industrial sustainability Seberang Jambi City. This research is included in the type of development research to create an innovation model for batik products into home decor using the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model. This research will be carried out in Seberang Jambi City which consists of two sub-districts, namely Olak Kemang sub-district and Pelayangan sub-district, which are potential areas for MSMEs for Jambi Batik craftsmen originating from this area. The data analysis technique in this research uses descriptive qualitative. The research results show that the innovation of batik products into batik home decor products such as sofa cushions, wall decorations and others is considered worthy of development as a means of sustainability for the activities of the MSME Batik industry Seberang Jambi City. The E-commerce portal developed under the name "Lapak Batik" is considered suitable as a development for online marketers to make it easier for batik craftsmen in Batik MSMEs across Jambi City to market their products and develop the products they innovate. Evaluation of the product development of innovative batik products into batik home decor and the e-commerce portal "Lapak Batik" was declared feasible to be implemented in assisting batik MSME business activities Seberang Jambi City.

**KEYWORDS:** Product Innovation, Portal E-Commerce, Industrial Sustainability Batik MSMEs

### INTRODUCTION

The increasingly rapid development of MSMEs makes MSMEs a business field in overcoming the problem of unemployment while also giving rise to other problems related to the business competitiveness of MSME actors. As stated by Fathor (2014), the classic and very basic problem faced by MSMEs is their ability to compete, both with similar small businesses and businesses on a larger scale. For this reason, MSME business actors must be able to overcome this competition by creating product innovations that promise to increase sales in the industry 5.0 era. One product that has good prospects and is in demand by many people is batik. This can be seen from the increasing number of batik enthusiasts from both local and international consumers. Especially since batik was designated by UNESCO as an intangible cultural heritage (Masterpieces of the Intangible Cultural Heritage of Humanity) at the world level owned by Indonesia on October 2 2009. Apart from increasing the Indonesian people's love for batik, this situation can also increase income and growth of the industry batik in Indonesia.

So far, batik is often identified with the island of Java, such as Yogya, Solo, Pekalongan, Cirebon, Madura, Tuban and Banyuwangi. However, one of the provinces that also develops creative batik crafts is also in Jambi province, namely in the Seberang Jambi City area, where the majority of the population makes their living from batik. The Seberang Jambi City area is located in the administrative area of Jambi City which consists of Pelayangan District and Danau Teluk District. The location is separated by the Batanghari river from Jambi City, so it is located Seberang Jambi City. In these two sub-districts there are dozens of MSMEs that manage batik.

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Jambi batik is no less interesting than Javanese batik. Several Jambi batik motifs can be seen Flowers Motive (*Bungo Pauh, Bungo Cengkeh, Kembang Pare, Teratai, Bungo Jatuh, Bungo Tanjung Bertabur, Bungo Bengkok, Bungo Kaco Piring, and Bungo Tanjung*); Leaf Motive (*Tagapo, Keladi, Daun Mangga, Kecubung, and Ancak*); Fruit Motive (*Tampuk Manggis, Pucuk Rebung, Duren Pecah, Biji Timun, Nenas, and Antalas*); Animal Motive (*Riang – Riang, Merak Ngeram, Kuaa Berhias, Angso Duo Bersayap, Ikan, Kupu-Kupu, Burung Pionet, and Taritang*); Vegetable Motive (*Relung Kangkung, Keluk Kangkung, and Keluk Pakis*); Object Motive (*Kapal Sanggat, Keluk Paku, Sisir Bergantung, Candi, Potong Intan, and Teluk Rantai*), and Motive Etc (*Batanghari and kacang-kacangan*).

Apart from the diverse motifs, batik craftsmen always develop their businesses in accordance with current developments and consumer demand. In line with developments in the world of batik, Batik entrepreneurs and craftsmen Seberang Jambi City have the challenge and opportunity to continue to be creative in developing renewable motifs to be able to anticipate the dynamics of the batik market. This will also make batik Seberang Jambi City able to survive and become one of the bases for strengthening the creative economy. However, of course competition in the batik industry is getting tighter, along with the continued growth of the batik industry in Indonesia.

This increasingly fierce competition requires batik producers to improve product quality and make new breakthroughs through product innovation, in order to increase sales for the success of the batik business. Many batik industries Seberang Jambi City no longer operate because they are unable to win amidst increasingly strong market competition. Data obtained by the author in the last 3 (three) years has seen a decline in the number of batik businesses Seberang Jambi City which can be seen in the table below:

**Table 2 Total of Batik Businesses Across Jambi City**

Uraian	Tahun		
	2019	2020	2021
Kec. Danau Teluk	38	18	10
Kec. Pelayangan	59	47	39
<b>Total</b>	<b>97</b>	<b>65</b>	<b>49</b>

**Resource:** BPS processed by the Ministry of Industry's Data and Data Center (2021)

The cause of this situation is because the batik industry in Seberang Jambi City is unable to develop its business optimally. Thus, this shows that the batik industry which is unable to compete well will not be able to operate and maintain its existence. Meanwhile, on the other hand, for the batik industry which can keep up with the times and consumer needs, the products of this industry will be popular with consumers and will certainly survive well and can even increase sales and maintain its existence. So it is necessary for batik craftsmen Seberang Jambi City to be able to make product breakthroughs through innovations made to the products of each business that are aligned with current developments, demands and consumer needs.

Innovation is one of the important things that a company must always implement if it doesn't want to lose its consumers. With product innovation, consumers can provide more choices and provide choices that suit consumer tastes (Ernawati, 2019; Almira and Sutanto, 2018). As Kanagal (2015) said, product innovations are required by firms to cope with competitive pressures, changing tastes and preferences, short product life cycles, technological advancement (or contrarily technological obsolescence), varying demand patterns, and specialized requirements of customers. Product innovation is considered to be able to eliminate consumers' feelings of saturation or boredom regarding product choices that tend to be less diverse and unique (Rasyid and Indah, 2018).

Product innovation can be categorized more concisely into three categories by Lukas and Ferrell (in Cynthia and Hendra, 2014: 4), including product extensions (line extensions) which are products that are still familiar to business organizations but new to the market. 2. Product Imitation (me-too products) are products that are considered new by the business but are familiar to the market. 3. New products (new-too-the-world products) are products that are considered new by both the business and the company.

Apart from product innovation, another problem also experienced by batik craftsmen is the development of the digitalization era, so that batik craftsmen do not yet understand the right sales strategy to be able to compete with other batik craftsmen. This condition is an indicator that the batik industry run by MSMEs has great potential to be developed. Problems that occur with Batik craftsmen MSMEs Seberang Jambi City include low productivity of MSMEs due to lack of professionalism in mastering technology, weak funding and marketing, as well as low quality of human resources from batik craftsmen MSMEs. This is in line with what Hanim and Norman (2018) expressed regarding the problems of MSMEs in general, namely limited

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business facilities and infrastructure, especially those related to technological tools; most MSMEs use technology that is still simple; limited access to raw materials, so that MSMEs often get low quality raw materials; access to technology, especially if the market is controlled by certain companies/business groups; have not been able to keep up with rapidly changing consumer tastes, especially for MSMEs that have been able to penetrate the export market, so they are often involved with companies with larger capital. This problem has of course caused a decrease in the number of batik sales and resulted in many MSME batik craftsmen going out of business.

MSME batik craftsmen need to have mastery of technology to simplify the production process through to sales. Consumers today want a hassle-free transaction process and can shop whenever they want. The easier it is to make transactions, the more consumers will like it and make consumers feel comfortable. For this reason, technology-based batik sales can be done through e-commerce. The type of industry where sales and purchases of products or services are carried out using electronic systems such as the internet or other computer networks is called E-Commerce (Wibowo, Hidayat, and Rahmawati., 2020; Musnaini, et.al., 2020). The e-commerce market is a very tempting gold mine for business people who can see the future potential. E-commerce is part of the development of digitalization which makes it easier for consumers to carry out transactions.

E-Commerce is a multidisciplinary process that requires the involvement of all individual functions to provide products and services to fully satisfy online customers, thereby bringing convenience to consumers (Yang, Li, Wang, and Sherratt, 2020; Yu and Dong, 2013). E-commerce (electronic commerce), is the purchase of products or services, business transactions that occur in electronic networks, such as the internet or other computer networks and business processes that connect companies, consumers and certain communities that are carried out electronically (Rachman, Beny, and Fernando, 2017; Wahyudi, 2022). Similar to the opinion of Jain, Malvia, and Arya (2021) E-commerce is referred to as electronic commerce. It means the electronic media and the internet for dealing with goods and services. This means that E-commerce is referred to as electronic commerce and electronic media and the internet for transactions with goods and services. E-Commerce is a bridge between sellers and buyers so that both parties benefit from many things such as time and place to meet (Amin, Soelistijadi, and Priambodo, 2012). This research focuses on e-commerce which will be formed in a portal that makes it easier for consumers to visit the portal and choose the goods they want.

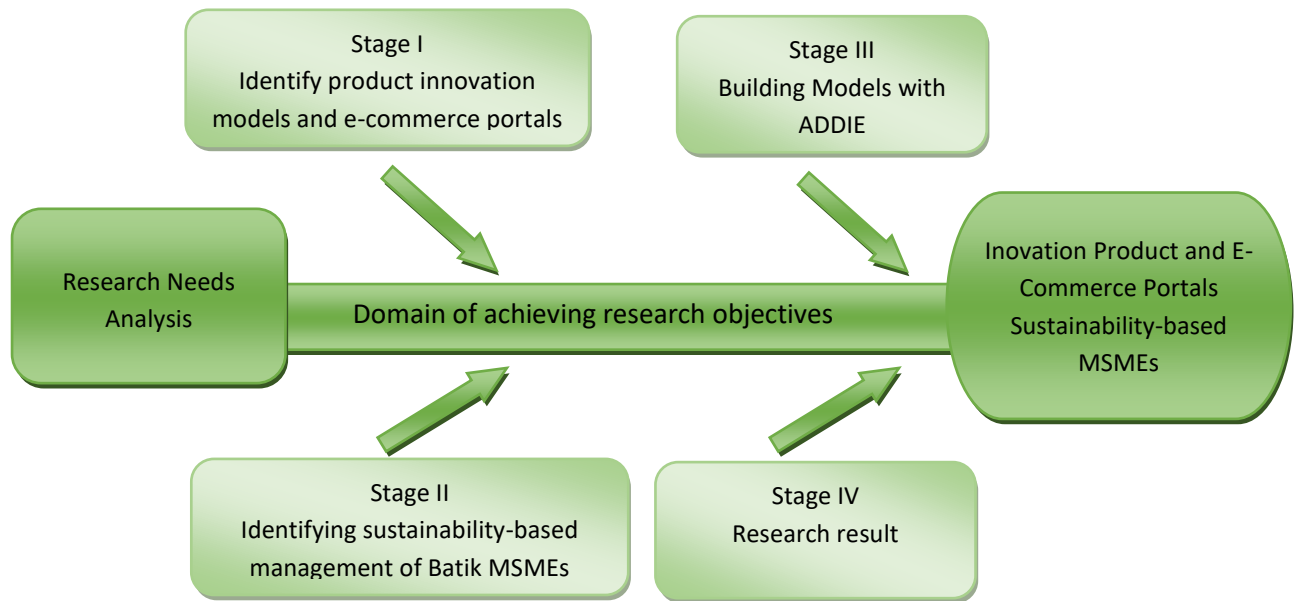
The development of the digitalization era requires batik craftsmen MSMEs Seberang Jambi City to innovate through the local industrial sector and prepare themselves to compete globally by increasing the productivity of their production output so that the products produced have commercial selling value and can maintain their sustainable existence. One method for assessing industrial sustainability focuses more on identifying recommendations for improvements that can be suggested to increase industrial sustainability through PSS (Product-Service System) development of design for sustainability or D4S which contains how to make 'green' products and how to meet consumer needs in a more sustainable way. The criteria in D4S are referred to as the three pillars of sustainability, namely people, profit and planet. People are related to social conditions, profit is related to economic conditions, and planets are related to environmental conditions. (Purwaningsih, Yudha, and Susanti, 2016). Increasing the efficiency of natural resource utilization and effective production not only improves environmental performance but also makes industry resilient and competitive because these things are closely related (Szalavetz, 2017). According to Indrayani, Triwiswara, and Evtriyandani (2020), achieving energy efficiency in the batik industry is expected to make the batik industry a sustainable industry.

In realizing a sustainable industry in the context of efficient and effective use of natural resources in a sustainable manner so as to be able to align industrial development with the continuity and preservation of environmental functions and provide benefits to society (Nurbaiti, et.al; 2021). This phenomenon provides an opportunity to revitalize the batik industry sub-sector Seberang Jambi City so that it can accelerate achievements in maintaining the sustainable existence of batik MSMEs. One of them is by innovating products and E-Commerce portal models in managing MSME batik craftsmen based on industrial sustainability across the city of Jambi.

### **METHOD**

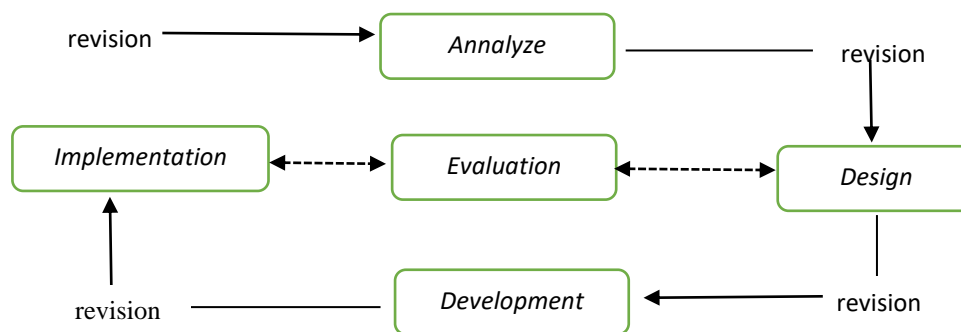
To make research easier, researchers compiled a research flow diagram by dividing several stages using a fishbone diagram. The purpose of preparing a flowchart using a fishbone diagram as a guide in producing valid and appropriate research in answering the problem formulation in the research can be seen in the image below:

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**Figure 1** Fishbone Diagram Research Flow

The research flow begins with an analysis of research needs which are prioritized in achieving the model objectives of product innovation and e-commerce portals based on the sustainability of MSMEs. The realization of this goal is divided into several stages, which are depicted in the Fishbone diagram. Stage I is identifying product innovation models and e-commerce portals: Batik motifs are still ancient, there is no role for MSME batik craftsmen in managing product innovation, electronic marketing has not been used optimally, and technology has not been utilized optimally in producing batik until marketing. Stage II is identifying sustainability-based management of Batik MSMEs: identification of e-commerce transactions in utilizing technology, optimizing the role of batik craftsmen MSMEs in product innovation, identification of internalization using technology to create product innovations and e-commerce portals, and utilization of technology for product innovation and e-commerce portal in a sustainable manner. Stage III is Developing a Model with ADDIE: Analyze, Design, Develop, Implement, and Evaluate. Stage IV is the result of research: sustainability-based product innovation and e-commerce models. This research is included in the type of development research to create an innovation model for batik products into home decor and e-commerce portals with the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model which can be seen in Figure 2 below:



**Figure 2** ADDIE Data Analysis Method

This research will be carried out in Seberang Jambi City which consists of two sub-districts, namely Olak Kemang sub-district and Pelayangan sub-district, which are potential areas for MSMEs for Jambi Batik craftsmen originating from this area. The population in this research is the Jambi batik craftsmen MSMEs totaling 43 craftsmen and the sample is the population itself or a saturated sample. The data analysis technique in this research uses descriptive qualitative. With this descriptive technique, the researcher will describe or describe the data that has been collected as it is. The percentage search is intended to find out the status of something that is being presented and is still presented in the form of a percentage, but the percentage can be interpreted in sentences. Assessments for experts in this research are arranged by grouping scores (values). After obtaining the measurement results from the score tabulation, the calculation steps are taken. Measuring the feasibility of assessment tools for

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developing innovative batik products into batik home decor by multiplying the number of items asked by the score obtained, then the average value is sought for the results. For more details, see the following table:

**Table 3 Instrument Assessment Eligibility Criteria**

No	Assessment Category	Average Score obtained
1	Very Worth It	4.51 – 5.00
2	Worthy	3.51 – 4.50
3	Not Worth It	2.51 – 3.50
4	Not feasible	– 2.50

### FINDINGS AND DISCUSSION

#### Product Development Results (Inovatiion Product and E-Commerce Portal)

This research aims to identify the management model for batik craftsmen MSMEs in Seberang Jambi City; produce product innovation models and E-commerce portals in the management of batik craftsmen MSMEs based on industrial sustainability Seberang Jambi City, and identify the impact of managing batik craftsmen MSMEs on increasing sales and sustainability of the batik industry Seberang Jambi City, to find out the management model for batik craftsmen MSMEs in across the city of Jambi requires steps in identifying the needs of batik MSMEs so that later they can create or produce a product innovation model from batik to become new products other than batik cloth such as batik products for home decor and also to facilitate the marketing process of batik products produced by MSMEs then an E-commerce portal was created like other forms of online marketing. Once the model is formed, the impact of the management of MSME batik craftsmen on increasing sales and sustainability of the batik industry in Jambi City will be visible. To make this happen, collaboration is needed with experts or experts who are qualified in the IT and economic fields so that the model becomes interactive between the seller and the consumer. The product innovation model and e-commerce portal developed were declared suitable for use based on validation by IT experts, validation by economic experts regarding product innovation, and test results by researchers as well as responses from batik craftsmen and batik consumers. This research refers to the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) method development model which can be described as follows:

#### Analysis:

This analysis stage aims to identify possible causes of a performance gap in batik MSMEs Seberang Jambi City. To fulfill the analysis stage, researchers must be able to determine instructions that will overcome existing gaps in MSEs, put forward ideas that will cover these gaps and offer strategies to close gaps in performance based on empirical evidence about the potential for sustainable business success. When the effort involved can affect the performance or performance of the number of batik sales, there are various causes that influence performance and provide other clear options to increase sales in overcoming gaps, showing clear evidence, creating effective performance goals, showing lead time feedback and clarification of the consequences of poor performance implementation. Batik craftsmen have adequate knowledge and skills in terms of making batik, but they don't think about creating innovative creative skills to make batik products other than batik cloth, such as batik innovation for home decor products. From the problem of gaps in analyzing problems caused by product innovation, it can be analyzed that batik product innovation needs to be carried out for the sake of industrial sustainability. From the analysis stage in terms of product innovation, it can produce an output of developing batik product innovation into home-based batik products, the output of which can be seen in the image below:



**Figure 3 Batik Home Decor Innovation**



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Apart from the analysis of product innovation, there is also a gap in terms of marketing of batik products in batik MSMEs Seberang Jambi City, thus affecting production volume and also sales volume. For sustainable marketing, an analysis of an idea was obtained to develop a special E-commerce portal for MSME Batik craftsmen. It can be seen that the estimated output produced is as follows;

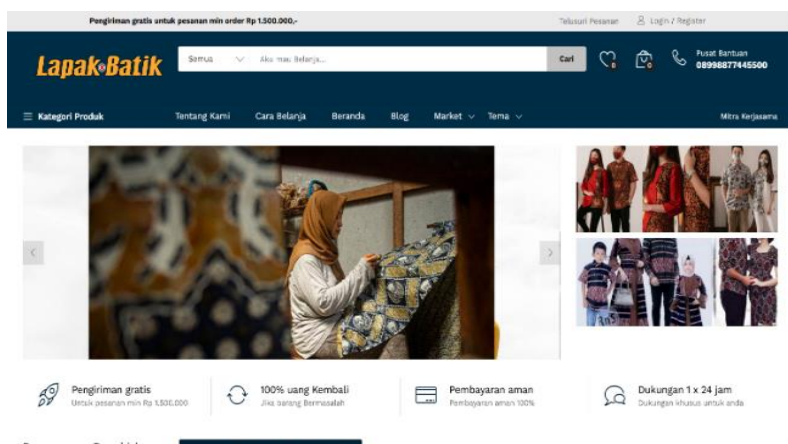


Figure 4 E-Commerce Portal Model Output

### Design:

This design step is to verify what type of product and marketing will be developed with appropriate test methods. In completing this design stage, researchers must be able to prepare a specific set of functions to close the gap in the implementation of batik MSME business performance in innovating their products and also marketing them online. This design stage sets the "Reference" for the progress of the next ADDIE stage. The reference points to the image line from the eye to the perception of the object. As an example of the consumer's reference concept in communicating with sellers in the form of visualization of features on an attractive E-commerce portal filled with visual images of batik products.

The varying levels of expertise among the stakeholders participating in the ADDIE process require maintaining Line of Sight throughout the entire process. The design management team and its development activities were influenced by these ideas from Line of Sight. This line of sight is biased by activities unrelated to the scope of filling performance gaps. Therefore, researchers must understand the strong connection between consumers and sellers through features developed both in terms of product innovation and e-commerce portals so that they can close the gap between consumers by giving trust to sellers during the buying and selling process.

For this reason, development both in terms of product innovation and online marketing through an E-commerce portal called "Lepak Batik" requires a trial of products that have been designed by distributing questionnaires to IT and economic experts or experts along with product examples to assessing the validity and feasibility of the product being developed.

### Development:

The Develop stage aims to produce and validate the development of the selected product both in terms of product innovation and online marketing by creating an E-commerce portal. The development needed to implement the performance of batik MSMEs Seberang Jambi City has been planned and must be identified by researchers to complete this development stage. After that, to implement the planned product development, select or develop all the necessary tools, then evaluate the product development output, and complete the remaining stages of the product development design series using the ADDIE method. The results of this stage are expected by researchers to produce a complete set of product developments, such as making innovative batik products into batik home decor products, appropriate online marketing strategies through e-commerce portals that are made with good and attractive features.

To support the development of product innovation and online marketing through e-commerce portals, input is needed from experts or experts in their fields, in this case economic experts to assess batik product innovation and IT experts or experts to assess e-commerce portals and a comprehensive set of directions for each product development and independent activities that provide a means of building the knowledge and skills of batik craftsmen. Researchers will also be helped by a comprehensive set of directions in guiding batik craftsmen at batik MSMEs across Jambi City during interactions in the planned product development process. Next, during the development stage, the researcher develops a formative evaluation design and validates it to produce a revision. Researchers must be able to focus on communicating product development well and giving

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their trust to batik craftsmen during the product development process with comprehensive sources presented, so as to fill the gap in MSME business performance regarding the lack of knowledge and skills of batik craftsmen. The result of the development of the e-commerce portal product is the "Lapak Batik" portal.

### Implementation:

This implementation stage aims for researchers to prepare the work environment and involve batik craftsmen well in the product development process. This implementation stage has general procedures, namely preparing researchers and preparing craftsmen. Researchers must adapt the actual work environment so that batik craftsmen can begin to build new knowledge and skills needed to close the performance gap of batik craftsmen in the product development process. Development and evaluation activities mark the final stage of the implementation phase. Most ADDIE approaches use the implementation phase to transition to evaluation activities and other strategies that implement the product development process. The result of this stage is an implementation strategy. The general component of the implementation strategy is the implementation of the revision results (field trial results) of batik craftsmen regarding the products that have been developed and based on the Field Trial Results, improvements to the final product are made. Researchers are required to really manage product development in order to convey implementation strategies well.

### Evaluation:

This evaluation stage aims to assess the quality of the product and the product development process, both before and after the implementation stage. Determining evaluation criteria, selecting appropriate evaluation tools, and carrying out evaluations are general procedures related to the evaluation stage. Researchers must identify the level of success of product development, recommend improvements for subsequent competencies of similar scope, stop all work, transfer all responsibility for project implementation and evaluation to an appointed administrator or manager, and focus on the evaluation phase. The result of this stage is an evaluation plan. A summary that outlines the objectives, data collection tools, timing, and person or group responsible for a particular level of evaluation, a set of evaluation criteria, and a set of evaluation tools become common components of an evaluation plan. Researchers focus on measuring the evaluation plan during the product development process with batik craftsmen. Performance gaps become a guiding reference point for assessment and evaluation decisions. Evaluation is carried out to determine the quality of the product developed through a questionnaire to experts or experts as a reference that the product is suitable for application by batik craftsmen to make it easier for batik craftsmen to market their products online.

### Feasibility Assessment Results

The following is the data from the feasibility assessment of the batik product innovation model and e-commerce portal and the evaluation results data:

#### Batik Expert Validation Data:

Batik expert validation was carried out to obtain information that will be used to revise batik product innovations into home decor batik products and improve the quality of the effectiveness of the product innovation model in supporting business sustainability for batik craftsmen in Batik MSMEs Seberang Jambi City. Validation results are obtained by assessing through a validation sheet. Evaluation of the results of validation trials and final validation from economic experts can be seen in table 4 below:

**Table 4 Assessment of Batik Product Innovation Validation Trial Results**

Aspect	Indicator	Score
<b>Batik Motif Design Innovation in the form of home decor</b>	The motif image matches the theme	4
	Batik drawings comply with the rules	4
	Exact motif repetition	4
	Consistent line size	4
	The line differences are clear	4
	The line strokes are precise and accurate	4
	No visible erasure marks	4
	No double lines	4
	The motif image is 100% clean	4
	The motif image is neat and strong	4
<b>The result of placing wax on</b>	Night scratch quality	4

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the material (line quality)	Night Scratches Neatness	4
	Evening scratch hygiene	4
Staining Results	Conformity with the theme	4
	Cleanliness and Neatness of Coloring	4
	Evenness of Coloration	4
Overall Batik Innovation Display	The combination of designs and colors is attractive and varied, not monotonous	4
	The appearance of the batik work results makes the overall home decor	4
	<b>Total Score</b>	<b>72</b>
	<b>Average</b>	<b>4</b>

After testing the validity of the instrument to assess the feasibility of a batik innovation product which was developed into a home decor batik product, a total score of 72 was obtained which was in the good category with an average of 4, which is in accordance with the assessment criteria that the average score is in the range 3.51 – 4.50 which is declared feasible. Even though there is advice from experts that this product can be used, it is necessary to clarify the term batik product innovation development regarding what type and some abstract terms such as home decor. This shows that the industrial sustainability-based batik product innovation validation assessment tool is effective and suitable for use in the batik product development process.

Based on expert advice, the researchers confirmed that the batik product innovation in question, namely home decor batik products, was declared worthy of development because it saw the sustainability of the future industry. Where, batik is not only limited to fabric, but can also be used as household equipment products such as home decor products, one example of which is pillows for sofas, wall decorations and so on. The results of the intended product revision were reassessed with a revised assessment of the validity of Sustainability Industry Based Batik Product Innovation, which can be seen in the following table:

**Table 5 Batik Product Innovation Validation Revision Assessment**

Aspect	Indicator	Score
Batik Motif Design Innovation in the form of home decor	The motif image matches the theme	5
	Batik drawings comply with the rules	5
	Exact motif repetition	5
	Consistent line size	5
	The line differences are clear	5
	The line strokes are precise and accurate	5
	No visible erasure marks	5
	No double lines	5
	The motif image is 100% clean	5
	The motif image is neat and strong	5
The result of placing wax on the material (line quality)	Night scratch quality	5
	Night Scratches Neatness	5
	Evening scratch hygiene	5
Staining Results	Conformity with the theme	5
	Cleanliness and Neatness of Coloring	5
	Evenness of Coloration	5
Overall Batik Innovation Display	The combination of designs and colors is attractive and varied, not monotonous	5
	The appearance of the batik work results makes the overall home decor	5
	<b>Total Score</b>	<b>90</b>
	<b>Average</b>	<b>5</b>

After revising the validity of the instrument to assess the feasibility of a batik innovation product which was developed into a home decor batik product, a total score of 90 was obtained which was in the very good category with an average of 5, which is in



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accordance with the assessment criteria that the average score is in the range of 4.51 – 5.00 which is stated to be very feasible. So this product is very worthy of being implemented in product development. This shows that the revision assessment tool for validation of industrial sustainability-based batik product innovation has been effective and suitable for use in the batik product development process.

### IT Validation Data (E-Commerce Portal)

Validation by IT experts (E-commerce Portal) is carried out to obtain information that will be used to revise the E-commerce portal model and improve the quality of the e-commerce portal model. Validation results are obtained by assessing through a validation sheet which covers two aspects, namely the quality aspect of Stickiness, Globalization and customization, Accessibility and Availability, Security, Privacy statement for all types of users, and advanced features. The assessment is carried out after the validator reviews the e-commerce portal model being developed. The results of the validation trial assessment scores from IT experts can be seen in the following table.

**Table 6 E-Commerce Portal Validation Trial Assessment Batik MSMEs Seberang Jambi City**

Aspect	Indicator	Score
Stickiness	The features a website has are good and interesting	4
	Nice and attractive design	4
	Nice and attractive layout	4
Globalization and customization	Language	4
	Payment Options	4
	Product Recommendations	4
	The product is out	4
	Policy	4
Accessibility and Availability	the extent to which a website has good accessibility, the extent to which Nurhayati, et al., Defining E-Commerce Business to Consumer (B2C) Website Evaluation Instruments 15 a website can accommodate user limitations (such as users who are visually impaired),	4
	the extent to which a website can accommodate the various technologies used by users (such as the use of different browsers and screen resolutions).	4
Security	the extent to which a website has paid attention to the security factors of transactions that occur on the website including authentication (e.g. login)	4
	The extent to which a website has paid attention to the security factors of transactions that occur on the website, including expiration time authentication	4
Privacy statement for all types of users	customization requirements through cookies	4
	customization requirements through spyware	4
	customization needs through other mechanisms	4
advanced features	product information sharing feature	4
	product deals feature	4
	Wish list feature	4
	Affiliate features	4
	<b>Total Score</b>	<b>76</b>
	<b>Average</b>	<b>4</b>

After testing the validity of the instrument to assess the feasibility of an online marketing development product for an e-commerce portal with the name "Lapak Batik", a total score of 76 was obtained which was included in the good category with an average of 4, which is in accordance with the assessment criteria that the average score The average is in the range 3.51 – 4.50 which is considered feasible. Even though there is advice from experts that this product can be used, the instructions for using the MSME Batik E-commerce portal need to be clarified. This shows that the e-commerce portal product validation assessment tool is effective and suitable for use in the process of developing online marketing for batik products.

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From expert advice, the researchers confirmed that to make it easier to use e-commerce portals, instructions on how to use e-commerce portals are needed. Where, the e-commerce portal can help consumers who want to find batik products and sellers who want to market them through this application. The results of the intended product revision were re-evaluated with an assessment of the revision of the validity of the e-commerce portal "Lapak Batik" UMKM Batik Seberang Jambi City, which can be seen in the following table:

**Table 7 E-Commerce Portal Validation Revision Assessment Batik MSMEs Across Jambi City**

Aspect	Indicator	Score
Stickiness	The features a website has are good and interesting	5
	Nice and attractive design	5
	Nice and attractive layout	5
Globalization and customization	Language	5
	Payment Options	5
	Product Recommendations	5
	The product is out	5
	Policy	5
Accessibility and Availability	the extent to which a website has good accessibility, the extent to which Nurhayati, et al., Defining E-Commerce Business to Consumer (B2C) Website Evaluation Instruments 15 a website can accommodate user limitations (such as users who are visually impaired),	5
	the extent to which a website can accommodate the various technologies used by users (such as the use of different browsers and screen resolutions).	5
Security	the extent to which a website has paid attention to the security factors of transactions that occur on the website including authentication (e.g. login)	5
	The extent to which a website has paid attention to the security factors of transactions that occur on the website, including expiration time authentication	5
Privacy statement for all types of users	customization requirements through cookies	5
	customization requirements through spyware	5
	customization needs through other mechanisms	5
advanced features	product information sharing feature	5
	product deals feature	5
	Wish list feature	5
	Affiliate features	5
	<b>Total Score</b>	<b>95</b>
	<b>Average</b>	<b>5</b>

After revising the validity of the instrument to assess the feasibility of an online marketing development product which was developed into an e-commerce portal, a total score of 95 was obtained which was included in the very good category with an average of 5, which is in accordance with the assessment criteria that the average score is. is in the range 4.51 – 5.00 which is stated to be very feasible. So this product is very worthy of being implemented in product development. This shows that the revision assessment tool for validation of the Batik Seberang UMKM e-commerce portal in Jambi City has been effective and suitable for use in the batik product development process.

### Product Development Evaluation Data

The stages of new product development in the stage gate model use stages starting from idea generation to market launch, at each stage of new product development it will be analyzed according to information from the provisions required in each stage of new product development after knowing the stages of new product development, then each The stages will continue with the stage gate evaluation stage based on predetermined criteria, starting from market, financial, product and process aspects. After

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that, the process continues to the next stage, and is evaluated using the next evaluation gate until the market launch evaluation stage which will evaluate the final results of all stages of new product development.

To focus evaluation of the entire performance process in the new product development stage, there are several dimensions of criteria starting from technical aspects, financial aspects, and based on marketing aspects (Craig & Hart, 1992; Hart, 1993) in Tzokas (2004) including: 1) *Idea Screening* : Market potential, product uniqueness, and technical feasibility, 2) *Concept Development* : Customer acceptance and technical feasibility, 3) *Business Analysis* : Sales objectives and market potential, 4) *Product Testing* : Product performance and product quality technical feasibility, 5) *Test Market* : Customer satisfaction, and product performance, than 6) *Launch Market* consisting of: *Short term* is Customer satisfaction, customer acceptance, and *Long term* is Customer satisfaction, customer acceptance

The results of the evaluation of batik product innovations into batik home decor which have been developed by economists can be seen in the following table:

**Table 8 Evaluation of Batik Home Decore Product Innovation Based on Sustainability Industry**

Aspect	Indicator	Score
<b>Idea Screening</b>	Filtering ideas related to batik home decor based on the potential of the increasingly innovative batik market	5
	The uniqueness of home décor batik products is a good idea	5
	The technical feasibility of creating batik home decor ideas is good	4
<b>Concept Development</b>	The development concept pays attention to customer acceptance regarding batik home decor	4
	The development concept pays attention to the technical feasibility of batik home decor	5
<b>Bussiness analiysis</b>	The purpose of selling home decor batik	5
	Business analysis related to the potential of the home decor batik market	5
<b>Product Testing</b>	Testimonial on the performance of batik home decor products	5
	Testimonials for good quality home decor products	5
	Testimonial on the technical feasibility of batik home decor	5
<b>Test Market</b>	Market test related to batik home decor customer satisfaction	5
	Market test regarding the performance of home decor batik products	5
<b>Luch Market</b>	Short term batik home decor customer satisfaction	5
	Short term for batik home decor customer acceptance	5
	Long term batik home decor customer satisfaction	5
	Long term acceptance of batik home decor customers	5
	Total Score	<b>78</b>
	Average	<b>4,875</b>

After carrying out an evaluation to assess the feasibility of a batik innovation product which was developed into a home decor batik product, a total score of 78 was obtained which was included in the good category or suitable for use in home decor batik as a product innovation from MSME batik craftsmen across Jambi City with an average number of The average score is 4.875, which is in accordance with the assessment criteria that the average score is in the range 4.51 – 5.00 which is declared very feasible. So this home decor batik product is very suitable for developing batik product innovation for batik MSMEs across the city of Jambi. This shows that the sustainability assessment tool for evaluating batik product innovation into batik home decor based on industry sustainability has been effective and suitable for use in the batik product development process.

Apart from evaluating in terms of product innovation, researchers also carried out developments in terms of online marketing, namely by carrying out product development by creating an E-commerce portal with the name "Lapak Batik". The following are the evaluation results of E-commerce portal product development based on IT experts:

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Table 9 Evaluation of the E-Commerce Portal "Lapak Batik"

Aspect	Indicator	Score
Idea Screening	Screening ideas related to the e-commerce portal "Lapak Batik" seen from the potential of the batik market which is increasingly being marketed online	5
	The uniqueness of the e-commerce portal "Lapak Batik" is a good idea	5
	The technical feasibility of creating the e-commerce portal idea "Lapak Batik" is good	4
Concept Development	The development concept pays attention to customer acceptance regarding the existence of the e-commerce portal "Lapak Batik"	4
	The development concept pays attention to the technical feasibility of the "Lapak Batik" e-commerce portal	4
Business analysis	Sales objectives using the e-commerce portal application "Lapak Batik"	5
	Business analysis related to online market potential using the e-commerce portal application "Lapak Batik"	5
Product Testing	Testimonial Performance of the e-commerce portal "Lapak Batik"	5
	Quality Testimonials for the e-commerce portal "Lapak Batik"	5
	Testimonial on the technical feasibility of the "Lapak Batik" e-commerce portal	4
Test Market	Market test regarding Customer Satisfaction with the use of the e-commerce portal "Lapak Batik"	5
	Market test regarding the performance of using the e-commerce portal application "Lapak Batik"	4
Luch Market	Short term customer satisfaction with the e-commerce portal "Lapak Batik"	5
	Short term customer acceptance of the e-commerce portal "Lapak Batik"	5
	Long term customer satisfaction with the e-commerce portal "Lapak Batik"	5
	Long term customer acceptance of the e-commerce portal "Lapak Batik"	5
	Total Score	75
	Average	4,687

After an evaluation was carried out to assess the feasibility of an e-commerce portal product "Lapak Batik" a total score of 75 was obtained which was in the good category or suitable for use as online marketing carried out by MSME batik craftsmen across Jambi City with an average of 4,687, which is in accordance with the assessment criteria that the average score is in the range 4.51 – 5.00 which is declared very feasible. So the e-commerce portal "Lapak Batik" is very suitable for developing online marketing for batik MSMEs across Jambi City. This shows that the "Lapak Batik" e-commerce portal evaluation assessment tool is effective and suitable for use in the online marketing product development process.

## DISCUSSION

### Batik Product Innovation

The etymology of innovation comes from the Latin letter innovation, which means making something new. Tracing the history of the establishment of a business, in general it always has basic features. Then as time goes by, day by day, the business grows with new features. This phenomenon can be called a weakness in business competition. For this reason, efforts are needed to be different from other businesses, by offering something different that other business actors do not provide. Ideas that introduce special offers can be called innovations (Mohd Zawawi et al., 2016).

A business is required to have innovation, so it has competitiveness compared to other competitors. There is a long history of innovation in human life. In the West around 1776 economist Adam Smith wrote in his book entitled The Wealth of Nations, about the problems of producer relations, markets, and lack of transportation efficiency (Donovan, 2004). Innovations

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in the form of the invention of the steam engine during the industrial revolution, innovations in the way cotton is produced into cloth, innovations in work management that gave birth to professional specialization, innovations in the distribution of products resulting from the industrial revolution throughout the world, continuing to innovations in EDI (Electronic Data Interchange) technology, storage innovations in containers, and various logistics innovations were discovered (Grawe, 2009). It can be said that all human endeavors are required to continue to innovate in order to survive.

Batik craftsmen at batik MSMEs Seberang Jambi City also carry out product innovation classifications up to the manufacturing process. Product innovation is related to product development, while process innovation is related to the way production or service operations are carried out. Product innovation aims to present new or better products, including services for customers. Meanwhile, process innovation changes or improves the way an organization carries out the production process. Included in product innovation during the pandemic, Batik makers at batik MSMEs Seberang Jambi City also carried out initiatives to make creative batik masks, batik clothes for working at home, and other innovative products. During the pandemic, sales of 2 – 3 layer batik masks proved to have increased significantly, followed by batik negligee dresses that are comfortable to wear at home, tengkuluk, and tracksuits. With this research, MSME batik craftsmen Seberang Jambi City can add product innovation variants to the realm of home decor batik in expanding market share beyond clothes and others. Batik home décor products from this research were developed, such as sofa cushions made from batik, wall decorations, and others.

Materials that are soft, smooth, comfortable to wear, but at prices affordable to the general public, are still in demand during the pandemic. Batik MSMEs Seberang Jambi City carry out process innovation by changing or improving the way the organization carries out the production process. This innovation is carried out in the form of creating a stamped batik process that uses a collection of certain stamps which are mixed and matched with other stamps, to produce new stamped batik creations and other products.

After the pandemic, batik craftsmen at batik MSMEs Seberang Jambi City took part in various exhibition activities showing various batik works that had been innovated. At this exhibition, the latest collections from batik craftsmen at batik MSMEs Seberang Jambi City were exhibited directly and consumers could see the work with the naked eye.

### **Portal E-commerce**

The "Lapak Batik" ECommerce Portal Website facility that was built has the following capabilities: 1) Can facilitate and manage batik MSMEs Seberang Jambi City in promoting and marketing the products they produce; 2) Providing useful information for customers in looking for the products they need, namely information about the products offered by batik MSME owners; 3) Make it easier and smoother the sales transaction process, because batik MSMEs and prospective buyers do not need to meet in person or face to face to carry out buying and selling transactions; 4) Make it easier for batik MSMEs Seberang Jambi City to create their own e-commerce website; 5) Having this E-Commerce portal software will run normally on the software specifications of the Windows Operating System and the Mozilla Firefox Web Browser.

After analyzing the design and design, this discussion will implement the results of the design into an e-commerce portal application system "Lapak Batik" which can be accessed via the page <https://lapakbatik.online/>. There are several things that must be considered when setting up the "Lapak Batik" e-commerce portal, including the following: 1) Hardware Identify Needs: Identifikasi kebutuhan hardware yang digunakan diantaranya Perangkat PC / laptop; Processor Core i3; RAM DDR3 ( 4 GB ); HDD 512 GB; Keyboard; Mouse; dan Modem; 2) Software Identify Needs: Identify the software requirements used including a Web browser (Mozilla Firefox, Google Chrome, etc.) and the e-commerce portal application system "Lapak Batik"; 3) Brainware Identify Needs: So that the implementation of the system can run smoothly, a user is needed who is able to run or operate a computer and run the system that has been created; 4) Program View: The E-Commerce Portal "Lapak Batik" is accompanied by several features or displays to make it easier to access the use of the portal. Some of the displays that appear on the "Lapak Batik" E-Commerce Portal are as follows:

#### **1) Initial Display**

The initial display has a menu, namely product categories, about us, how to shop, blog homepage, market, themes, help center (contact), collaboration partners, browse orders, login/register a portal account. The initial display can be seen in Figure below:

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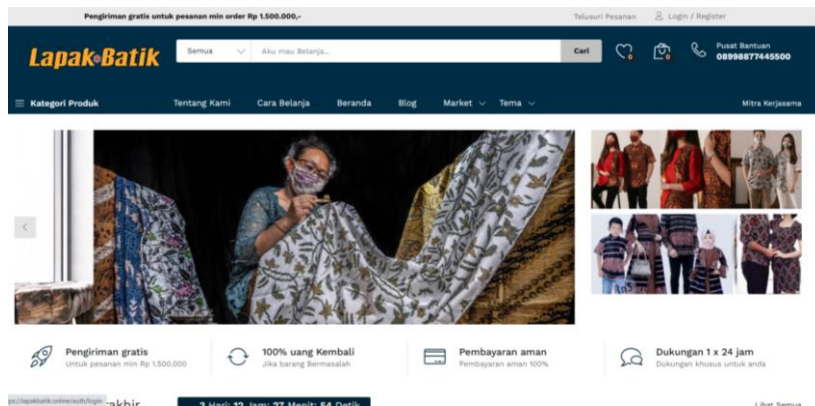


Figure 3 Initial Appearance of "Lapak Batik"

## 2) Product Display

The product display displays products produced by MSME Batik batik craftsmen Seberang Jambi City. The product appearance can be seen in the following image:

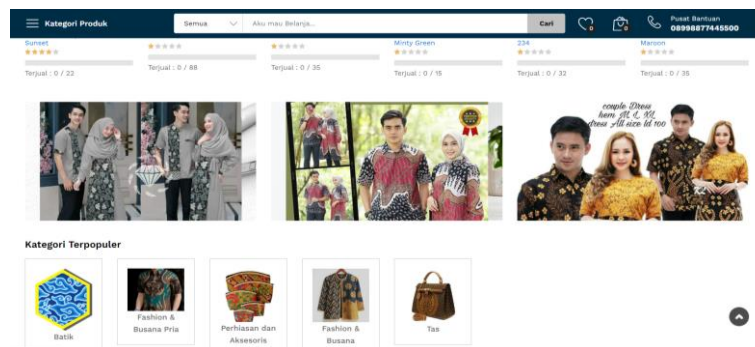


Figure 4 Product Display "Lapak Batik"

## 3) Footer Display

The footer display contains a list of recommended markets, best-selling products, premium quality shops and the newest products. The footer display can be seen in the following image:

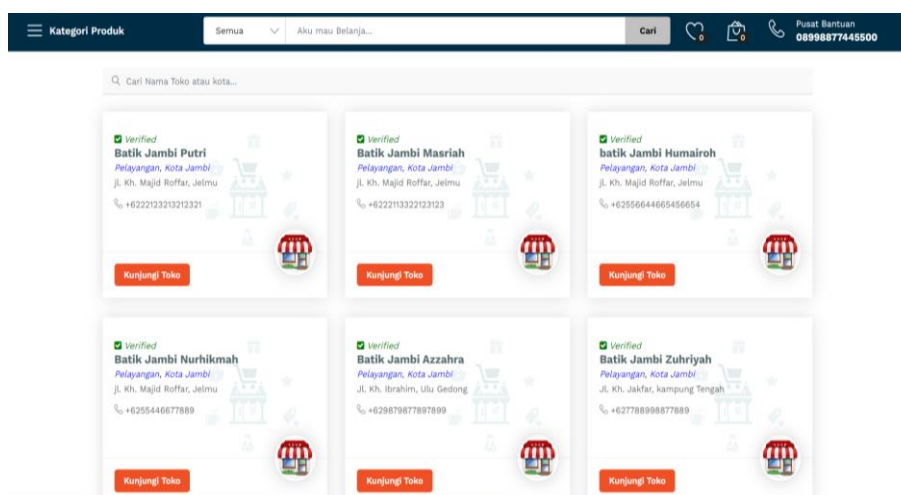


Figure 5 Footer Display "Lapak Batik"

## 4) Login/Register "Lapak Batik"

Login is used for craftsmen who already have an account so they can manage and market their batik products on "Lapak Batik". Meanwhile, the portal account registration display is used to register torso cloth craftsmen who wish to market their products



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on the portal at "Lapak Batik". Here, craftsmen can enter their full name, business name, business address, telephone number and email. The portal account login/registration display can be seen in the following image:

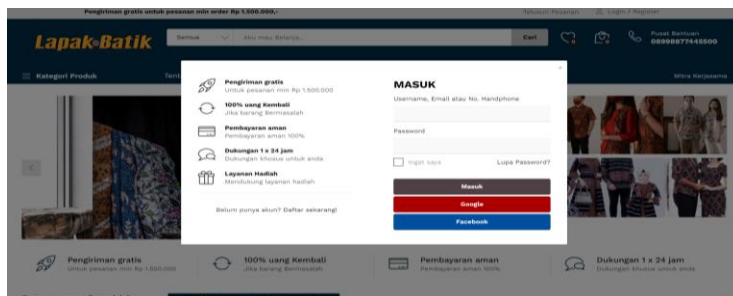


Figure 6 Login/Register "Lapak Batik"

### 5) How to Shop Display

Before shopping, consumers are required to register their account first, then are invited to fill in complete personal data according to the data on your identity card. After verifying your data, you can shop at our batik stall, happy shopping. A display of how to shop can be seen in the following figure:

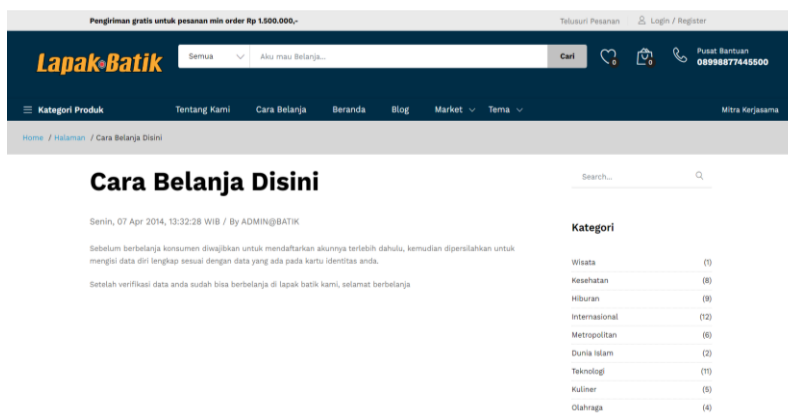


Figure 7 Hoe to Shop Display "Lapak Batik"

### 6) Contact Display

The contact display is used for visitors who wish to provide criticism, suggestions and comments regarding the "Lapak Batik" portal. The contact display can be seen in the following Figure:

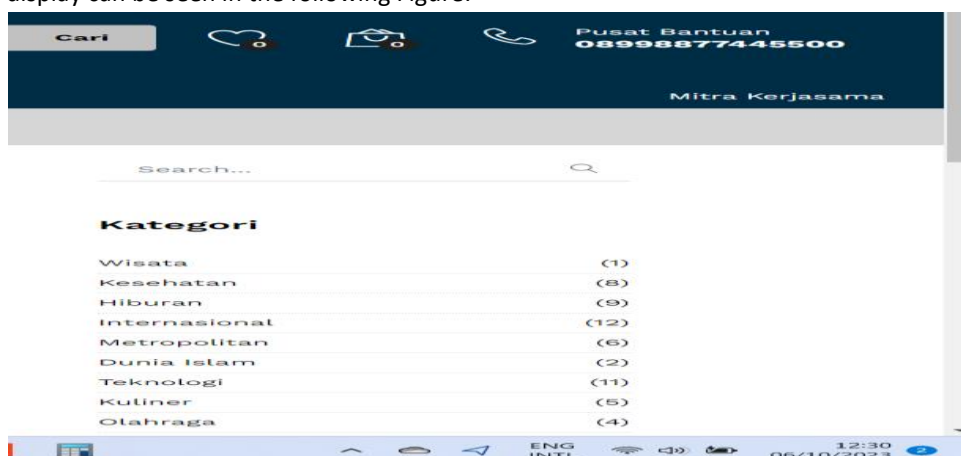


Figure 8 Contact Display

### 7) Blog Display

Blog display to provide the latest news information related to up-to-date batik products. The appearance can be seen in the figure below:

# Model Product Innovation and E-Commerce Portal in Management of Batik Craftsman MSMEs Based Industrial Sustainability

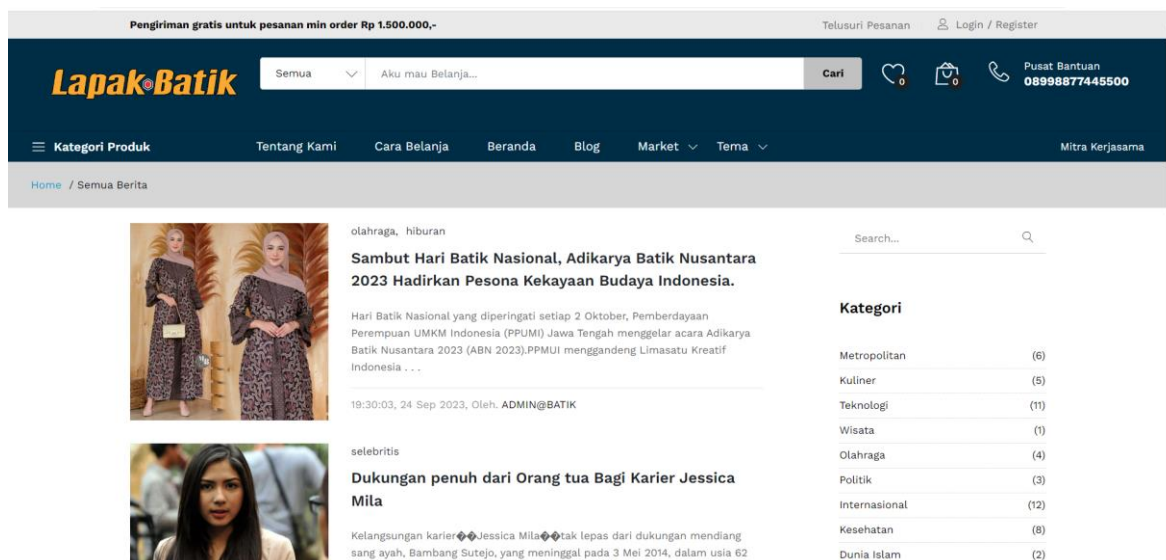


Figure 9 Blog Display

## Evaluation of Development Products

To see whether the e-commerce portal evaluation framework that has been developed previously can be said to be a good evaluation tool, the author created a survey. The survey contains questions as stated in the e-commerce portal evaluation framework. Economic and IT experts were asked to fill out the survey with the survey object being the e-commerce portal "Lapak Batik". It was found that the evaluation results related to the innovation of batik products into home decor batik were declared worthy products and also the e-commerce portal with the name "lapak batik" was also considered worthy as a product being developed.

The results of the evaluation of new product development were carried out based on the stages of new product development carried out by batik MSMEs in Seberang Jambi City consisting of 6 stages including: 1) Idea screening stage. The results of the research show that the criteria for market potential, product uniqueness and technical feasibility of the idea regarding batik product innovation into batik home decor are stated to be good. Likewise for the criteria categories of market potential, product uniqueness and good technical feasibility of ideas related to online marketing by developing e-commerce portal products with the name "Lapak Batik" were declared good; 2) Concept testing stage. The results of the research show that the customer acceptance criteria and the technical feasibility criteria of the concept received good marks; 3) The business analysis stage is seen from the sales objectives using the e-commerce portal application "Lapak Batik" and business analysis related to online market potential. The results of the research show that innovation of batik products into home dicore batik and the e-commerce portal application "Lapak Batik" is also assessed Good; 4) Product development stage. The results of the research show that the criteria for product performance, product quality and technical feasibility received good scores; 5) Market test stage. The results of the research show that the two criteria used obtained good scores; and 6) The launching stage is divided into 2 evaluations. Short-term evaluation is seen from the criteria for acceptance by customers and customer satisfaction is considered good. Long-term evaluation is seen after 6 months of the product being marketed based on customer satisfaction criteria which also gets good marks.

The results of this product evaluation are in contrast to research conducted by Chandra (2015) whose research showed that the evaluation of idea screening was good, starting from market potential, product uniqueness, and technical feasibility. Evaluation of concept testing, technical feasibility is good, while customer acceptance is not good. The product testing stage is also good in terms of product performance and product quality, while technical feasibility is still lacking. Evaluation of the market result analysis received good marks for each criterion used. The final evaluation, namely the short-term launch, was assessed both in terms of customer satisfaction and customer acceptance. The long-term launch scored well on customer satisfaction criteria.

## CONCLUSIONS

The innovation of batik products into batik home decor products such as sofa cushions, wall hangings and others) is considered worthy of development as a means of sustainability for the activities of the MSME Batik industry Seberang Jambi City. Likewise,

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the e-commerce portal product as an online market with the "Lapak Batik" application was declared worthy of development as a sustainability activity for the MSME Batik industry Seberang Jambi City.

Evaluation of product innovation and e-commerce portal development is based on 6 stages which show results 1) Idea screening stage, which is seen from the criteria of market potential, product uniqueness and technical feasibility of ideas both related to batik product innovation into home decor batik and e-commerce portals "Batik Stall" was declared good. 2) Concept testing stage. The results of the research show that the customer acceptance criteria and technical feasibility criteria of the concept received good marks; 3) The business analysis stage of the research results shows that the innovation of batik products into home dicore batik and the e-commerce portal "Lapak Batik" is also considered good; 4) Product development stage. The results of the research show that the criteria for product performance, product quality and technical feasibility received good scores; 5) Market test stage. The results of the research show that the innovation of batik products into home décor and the "Lapak Batik" e-commerce portal obtained good scores; and 6) The launching stage is divided into 2 evaluations, namely the short-term evaluation seen from the criteria for acceptance by customers and customer satisfaction regarding the innovation of batik products into home decor and the e-commerce portal "Lapak Batik" which is considered good and the long-term evaluation seen after 6 months of the product being marketed. Based on customer satisfaction criteria related to the innovation of batik products into home decor and the e-commerce portal "Lapak Batik" was assessed as good which also received good marks.

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