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Paper Authors

Nur Kholifah, Triyanto, Chytra Mahanani, Latifah, Vanesa Frisillia



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Diversification of Batik Products as an Effort for Economic Recovery in the Fashion Medium Sector (FMS): A Study of ABCD Approach

Nur Kholifah^{1*}, Triyanto², Chytra Mahanani³, Latifah⁴, Vanesa Frisillia⁵

^{1,2,3,4,5}Department of Food and Clothing Engineering Education, Faculty of Engineering, Yogyakarta State University, Yogyakarta, Indonesia

*Corresponding author: nur.kholifah@uny.ac.id

Abstract. Batik craftsmen in the medium-level fashion sector in Lendah, Kulonprogo have experienced serious economic and productivity problems during the COVID-19 pandemic. However, economic recovery must be carried out and batik craftsmen are able to survive. This study is a development and innovation through the diversification of batik products that are packaged in the form of training and mentoring. The approach method in the study is Asset Based Community Development (ABCD) by considering sources, methods, functions, and evaluations. The study was conducted in Lendah, Kulonprogo-Yogyakarta. A total of 37 batik craftsmen were involved in the study. Measurements carried out include satisfaction sheets, pre-test and post-test, and final product assessment based on Quality Function Deployment (QFD). The result of the product diversification training program is that workers feel satisfied with the material presented. This training contributes quite effectively and provides changes before and after being given learning, training, and production. QFD encompasses reliability, conformity, durability, and aesthetics. Furthermore, training is needed that can improve the capability of human resources in batik craftsmen.

Keywords: product diversification, batik, fashion medium sector, complementary products, ABCD, quality function deployment

Introduction

Since 2009 UNESCO [1], has designated Indonesian batik as a Masterpiece of The Oral and Intangible Heritage of Humanity [2], because it contains historical values that continue to this day. Several countries as the main markets for Indonesian batik are Europe, the United States and Japan. It was reported that from January to July 2020 it reached US\$ 21.54 million. This phenomenon reveals the potential of the batik craft industry in supporting the national economy. The Kulonprogo-Yogyakarta batik is famous for its main motif, "Gebek Renteng". This motif was developed from the natural wealth and conditions of the local community. The term "Gebek" is an authentic food typical of Kulon Progo and is now a regional identity which was officially announced on February 1, 2012 through the Indonesian Community Recreational Sports Federation. The fast economic rate for batik craftsmen is due to the strategic area that has the Yogyakarta

International airport in 2020. The main reason is that batik is in great demand by tourists.

However, since March 2020 the COVID-19 virus has been set to enter Indonesia [3], becoming a serious problem for batik craftsmen. This problem is felt at all levels, namely Micro, Small and Medium (MSM) in all Indonesian craftsmen, without exception the batik craftsmen in Lendah, Kulon Progo-Yogyakarta. At the medium level, they decided to survive and operate with limitations, while at the small and micro level, they stopped the production process because the products were difficult to sell and the sales proceeds as production capital required a long time to sell. This problem has an impact on batik craftsmen who have to stop production and even be dismissed from work while they have to support their families. Finally, in early 2022 the batik craftsman "sembung" ventured to operate. However, it is still low in demand and slowing in sales.

This study offers a solution, namely a batik product diversification training program

for batik artisans. Product diversification is product innovation that is in accordance with the abilities and needs of consumers to increase sales productivity [4], [5]. Previous studies revealed that product diversification is an effective strategy for increasing sales quantity [6]. Sembung batik artisans use a similar strategy and analyze consumer needs based on appropriate assets and product diversification. Finally, efforts to restore the economy of continuous batik artisans were carried out through a diversification training program for batik products.

Methods

The study of increasing the capability and capacity of batik craftsmen uses the Asset Based Community Development (ABCD) approach [7]. This approach is adopted globally that recognizes and builds strengths, talents, resources, and communities for development and sustainability [8]. In this study, the community of “sembung” batik craftsmen in Kulonprogo, Yogyakarta, was shaken by the economy during the COVID-19 pandemic. The ABCD process considers four elements, namely resources, methods, functions and evaluation.



Figure 1. Elements of the ABCD Process

This study was conducted from May to October 2022. A total of 37 batik craftsmen from various divisions, namely designing or making patterns, batik, coloring, plorodan, and marketing participated during the training. They are employees of a batik craftsman with the name "batik sembung" in Lendah village, Kulonprogo. The determination of the study subject was the result of initial observations that the activity of batik craftsmen had

decreased, most of the craftsmen were laid off due to priority health factors and reducing the spread of COVID-19, followed by sales turnover which decreased every day, while on the other hand batik craftsmen had to survive and support their families. So this study is intended to increase motivation, and economic recovery through the diversification of salable products that can be made by craftsmen as well as new innovations for professional services.

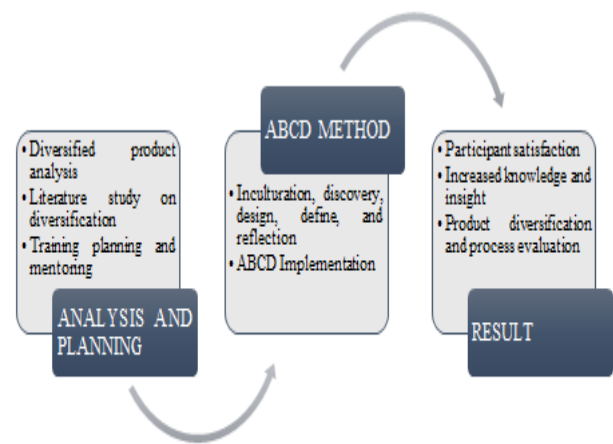


Figure 2. Stage of Study

The instruments used during the training included satisfaction sheets for resource persons covering aspects of material content as many as 3 (three) indicators, delivery of the material as many as 3 (three) indicators, discussion, and question and answer as many as 3 (three) indicators, facilities, and infrastructure supporting training as many as 3 (three) indicators. three) indicators, and 2 (two) product innovation indicators. Furthermore, cognitive assessment in the form of pre-test and post-test as many as 9 (nine) indicators including the definition of diversification, product definition, product type, benefits of diversification, diversification objectives, examples of diversification in batik, clothing section that has the potential to be diversified, and the balance of diversification. product. Furthermore, instruments on the quality of product diversification are designed and developed. To complement the existing studies, a focus group discussion (FGD) was provided to get input from all participants.

Data analysis includes the first is worker satisfaction (WS) = arithmetic score (f) / total score (n) x 100% [9]. Workers are categorized as successful if they get a score of 76-85% in the "Good" category and 86-100% in the "Very Good" category [10]. Furthermore, the effectiveness of the training program through the pre-test and post-test question sheets by calculating the N-gain score [11]. The Gain value (N-Gain) consists of 3 (three) levels, namely (1) $g < 0.3$ with the "Low" category; (2) $0.3 < g < 0.7$ with the category "medium"; and (3) $g > 0.7$ with the "high" category. Furthermore, it is declared effective if the percentage of N-gain is obtained by a score of 56-75 with the "effective enough" category and > 76 with the "effective" category.

Implementation of the Training Program and Discussion

1. The planning stage of the batik product diversification training program

The training program planning stage (TPP) uses the I3DR approach, namely Inculturation, Discovery, Design, Define, and Reflection. Inculturation is an initial study to see and observe the problems experienced by *sembung* batik craftsmen. At this stage, a focus group discussion (FGD) is conducted with the owner and workers. They told of the current conditions and the impact of COVID-19. The results of the observations explained that production activities were not running normally due to government regulations for worker restrictions and strict health protocols. Another problem described is that people's enthusiasm for purchasing products has decreased. The reason is that people do not focus on lifestyle or fashion and the transaction process can be one of the causes of vulnerable COVID-19 transmission. Finally, to maintain batik production, new innovations are needed to increase buyer interest, namely the

diversification of batik products. This innovation uses an asset-based approach, namely the potential of human resources working or being laid off and the potential of raw materials and recycled materials that have not been utilized.

Stage two is discovery, which is finding ideas or thoughts about diversifying batik products. The literature study was carried out to be used as study material on the definition, benefits, and types of products from diversification. Furthermore, the contribution of products that have been designed has added value and is sustainable. Stage three designs, namely designing activities based on needs and review studies. Activities are made in three stages, namely learning, training and production. The readiness required includes presenting material on batik product diversification, assessment sheets including training program participant satisfaction sheets, pretest, and posttest assessment sheets to see the success of the training program, and assessment of production results.

Stage four is defined, namely carrying out the activities that have been designed. This activity is carried out in stages, namely, learning is carried out in August 2022, training is carried out in September 2022, and Production is carried out by evaluating the process until the usefulness of the results in October 2022. Stage five is reflection, namely seeing the success and effectiveness of the stages that have been planned and implemented. The success of the training program is evaluated using satisfaction sheets and question sheets are given before and after participating in the learning. Furthermore, it is equipped with an assessment of the production and sustainability of the product. Overall, the implementation of the batik product diversification training program is presented in Table 1.

Table 1. Implementation of the I3DR-based Training Program

Stage	Goal	Activities	Methods/Material
Inculturation	Understanding and equating perceptions based on partner needs ("connected" batik craftsmen)	Face-to-face meetings with partners to analyze problems and produce solutions.	Observation, focus group discussion (FGD)
Discovery	Find and describe ABCD	Analyzing studies on batik product	Online media study,

Stage	Goal	Activities	Methods/Material
	processes for product development	diversification, studies on consumer needs during the COVID-19 pandemic, analyzing product sustainability. Planning training needs	literature study
Design	Designing training programs with ABCD in mind		
Define	Implement training programs and provide assistance in making batik products diversification	Carry out activities with partners and produce new products	FGD
Refelection	Evaluating the implementation of the training program and recommendations for further activities	Carry out evaluation of success in learning, training and production	Test

2. The implementation stage of the Batik product diversification training

The implementation of the diversification training program consists of 3 (three) core activities, namely the delivery of material on product diversification in batik including the preparation of product ideas, training programs and assistance in the manufacture of diversified products, and production or results (see Fig.3). The first step is education in the form of the definition of diversification, the benefits of diversification and product diversification. The results of this learning are new understandings and simple ideas that can be realized [12]. They propose materials that are not utilized to be recycled and made as markedness for buyers. For them, the presence of markedness can increase its own attractiveness, it can even be sold separately as a product sales service at weddings or seminar kits, namely handicrafts or souvenirs from batik materials [13]. There are 5 (five) ideas that are planned to be produced including masks, sembung wallets, necklaces (necklaces), key chains, glass mats, and brooches. The second step is training and monitoring. This activity continues from the initial idea in the first stage by utilizing available raw materials that have not been utilized optimally. The training and mentoring strategy are carried out by dividing into 5 (five) groups. Each group has the same job with the aim of each individual being able to see the work of other individuals. Enthusiasm

in work is also grown by giving appreciation for the best product. The third stage is production. At this stage, there is no mentoring process. They have been produced in large quantities.



Figure 3. Steps in a diversification training process

The results of the diversification of batik products include various necklaces, wallets, masks, coaster, and brooches made from batik and recycled materials (see Fig. 4). They reuse the remaining scrap materials to be used as complementary products or sold separately. Complementary products are intended as gifts for selling cloth or clothing products, while separate sales are intended for ordering wedding souvenirs or handicrafts, seminars, and other activities. This product is a concern for buyers of batik cloth or clothing and is perceived as an added value. Finally, sales through social media have increased. The batik

product diversification training program has provided benefits and is effective for batik artisans in the era of the COVID-19 pandemic. Until now, product diversification has been maintained and new types of products have been produced.

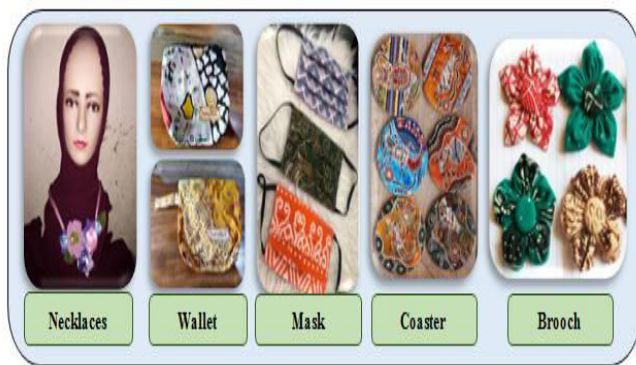


Figure 4. Results of Batik Product Diversification

3. Evaluation stage of the Batik product diversification training

Evaluation is conducted to measure employee satisfaction, the effectiveness of training programs, and analysis of product quality and sustainability. The evaluation of worker satisfaction was carried out after the resource persons conveyed their understanding of the diversification of batik products. There are 5 (five) components including contents, submission of material, discussion and Q&A, supporting facilities and infrastructure, and training results (See Table 2). Furthermore, the success of the vocational training program is measured by the effectiveness of its success using 9 (nine) questions given to batik craftsmen before and after participating in the program (See Table 3).

3.1. Batik Craftsman Worker Satisfaction

A total of 37 workers participated in learning activities about batik product diversification. They were given a satisfaction sheet consisting of 14 (fourteen) statement

items representing 5 (five) components, namely content, submission of material, Q&A discussion, supporting facilities and infrastructure, and training results (see Table 2). Based on the results of the analysis, it describes that the content component obtains 82.70% of results in the "Good" category. Workers' statements on content have a positive impact, including new insights. In addition, the material is easy to understand and relevant to the needs during the COVID-19 period. They expressed satisfaction in delivering the material with a score of 81.08% in the "Good" category. They say that presenters understand the material and psychology of workers as learners. For them, the material is attractive because it is equipped with pictures and easy explanations. Satisfaction in the discussion and Q&A aspects obtained a score of 78.82% in the "Good" category. Presenters provide opportunities for workers to ask questions directly. This strategy makes workers feel satisfied because they get service immediately. The answers given clarify the insights received and constructed. Aspects of supporting facilities and infrastructure obtained a score of 81.62% in the "Good" category. They describe that the facilities in the form of place, consumption, and location support the implementation of learning. And the last aspect is the training result obtained a score of 80.00% in the "Good" category. For workers, training contributes positively, especially by increasing insight into product diversification. Overall components include content, submission of material, discussion and Q&A, supporting facilities and infrastructure, and training results in the "Good" category which explains that the delivery of material can be accepted by all workers in the training program.

Table 2. Workers' satisfaction with the diversification of batik products

Components	Statement items	Total	Skor	A (A)	A (B)
Contents	The material about product diversification presented can add to my insight	185	158	85.41%	
	The material is organized and easy to understand	185	147	79.46%	82.70%
	The material is very relevant and fits my needs	185	154	83.24%	

Components	Statement items	Total	Skor	A (A)	A (B)
Submission of Material	The presenter really understands the material presented	185	152	82.16%	
	The presentation of the material in this training is interesting	185	148	80.00%	81.08%
	The presenter conveys the material well, it is easy to understand and implement	185	150	81.08%	
Discussion and Q&A	The allocation of discussion time increases my understanding	185	147	79.46%	
	The presenter provides answers to participants' questions clearly	185	148	80.00%	79.82%
	Overall discussions/questions and answers helped improve participants' understanding	185	148	80.00%	
Supporting facilities and infrastructure	Training room facilities	185	146	78.92%	
	Consumption given	185	157	84.86%	81.62%
	Easy to reach training location	185	150	81.08%	
Training result	This training can improve my skills innovation	185	148	80.00%	
	This training adds to my insight into batik diversification	185	148	80.00%	80.00%

3.2. Effectiveness of Study on batik product diversification

The effectiveness of the training program is measured by 9 (nine) questions covering the purpose of diversification, product types, benefits and objectives of product diversification, methods of diversification, examples of batik product diversification, parts of diversifying fashion products, and reasons for the importance of diversification (see Table 3). Testing is carried out before and after participating in learning and training. The pretest results obtained a score of 58.66% (227) while the posttest results obtained a score of 83.46% (323). The average value of N-gain is 0.57 at the moderate level with a percentage of 56.85% in the "Effective Enough" category.

Table 3. Effectiveness of Batik Product Diversification Training

No	Question Description	Pre-test	(%)	Post-Test	(%)	N-gain	(%)
1	What is meant by product diversification?	33	76.74%	38	88.37%	0.50	50.00
2	What is a product?	13	30.23%	30	69.77%	0.57	56.67
3	What are the types of products?	13	30.23%	36	83.72%	0.77	76.67
4	What are the benefits of product diversification?	24	55.81%	35	81.40%	0.58	57.89
5	What is the purpose of product diversification?	32	74.42%	39	90.70%	0.64	63.64
6	How to diversify batik?	32	74.42%	37	86.05%	0.45	45.45
7	What are examples of batik product diversification?	35	81.40%	40	93.02%	0.63	62.50
8	What are the parts of clothing that can be done with product diversification?	31	72.09%	35	81.40%	0.33	33.33
9	Why is it necessary to develop a product in a business?	14	32.56%	33	76.74%	0.66	65.52
Mean		227	58.66%	323	83.46%	0.57	56.85

Craftsmen have increased insight into the diversification of batik products and parts

of fashion that can be innovated or diversified products. Previously they did not think about

the materials that can be used or sold. While working from home (WHF) they can produce to add economic value during the COVID-19 pandemic.

3.3. Production Quality and Sustainability

Product quality is measured using the aspect of quality function deployment (QFD) by specifying the needs and desires of consumers [14]. The indicators used include reliability, conformity, durability, aesthetics, and diversification of batik products produced. There are 5 (five) products resulting from the learning and training stages, namely necklaces, bags, masks, glass mats, and brooches. Batik craftsmen use products in two functions, namely companion products, namely as gifts or handicrafts for every sale of clothing or cloth materials. The second function is a product that is sold separately for the purposes of weddings, seminars, and daily needs. Product diversification has benefits that can increase attractiveness and high selling value. Currently, the crafters maintain diversified products and increase in other types. The training program can be improved on product quality improvement and digital marketing-based sales strategies.

Conclusion

The batik product diversification training program implemented in Sembung batik craftsmen provides positive benefits and impacts, including (1) workers have insight into batik product diversification and feeling satisfaction in the good category; (2) increasing understanding of learning and training done by giving pre-test and post-test questions which obtained "N-gain of 0.57 with a percentage of 56.85% in the "Effective Enough" category; and (3) product quality based on QFD shows that the product has functioned as a companion product and a handicraft product for seminars, weddings or other activities. This training program can increase consumer interest and increase sales productivity. For workers, it can increase income and value efficiency to the environment through cloth waste. Furthermore, training is needed in the form of a digital marketing-based sales strategy.

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