




# Virtual tour-based digital batik village as a place for promotion of Bekasi city batik in the industry 4.0 era: Study on batik tiara

Agung Sudjatmoko <sup>a,1,\*</sup>, M. Maryani <sup>a,2</sup>, Azani Cempaka Sari <sup>a,3</sup>

<sup>a</sup> Management Program, Management Study Program, BINUS Business School Undergraduate Program, Bina Nusantara University, Jakarta 11480, Indonesia

<sup>1</sup>agung.sudjatmoko@binus.edu; <sup>2</sup>yanie@binus.edu; <sup>3</sup>acsari@binus.edu

\* Corresponding author

ARTICLE INFO	ABSTRACT
<p><b>Article history</b> Received: 2022-12-24 Revised: 2023-01-09 Accepted: 2023-02-04 Published: 2023-02-10</p> <p><b>Keywords</b> Batik village Community empowerment Promotion Training Virtual tour</p>	<p><i>The development of digital technology and virtual reality has also given birth to virtual tourism innovations that impact improving the community's economy through training. This program is carried out to create virtual tourist villages, mainly based on virtual batik tourism so that batik artisans have more time to promote their products and the tourist aspect. The virtual tour-based batik village aims to make the batik artisan community more active in utilizing digital application platforms to market their products and produce practical marketing applications. This digital application makes it easier for buyers to find out the promotions being carried out by Bekasi batik by utilizing gadgets and taking advantage of the digital world. The training method uses a case study approach, discussion, and lecture and ends with a training evaluation. The results of the study are based on the review of the user experience of Bekasi city batik artisans; out of 50 respondents, it is found that 55% strongly agree that training materials and virtual tour systems that are socialized are easy to access, can develop digital village web-based virtual tours as well as a forum for urban batik promotion Bekasi. In the aspect of the desired goals of the Bekasi city batik artisans participants, out of 50 respondents, the result was that 65% strongly agreed that the learning objectives of the training and virtual tour system met the expectations of the respondents. It is the hope of the training participants that the problem of marketing the virtual tour system will be a solution to expand the marketing of batik in the City of Bekasi.</i></p>
<p><b>Kata Kunci</b> Kampung batik Pelatihan Pemberdayaan masyarakat Promosi Virtual tour</p>	<p><b>Kampung batik digital berbasis virtual tour sebagai tempat promosi batik kota bekasi di era industri 4.0: Kajian Tiara Batik.</b> Perkembangan teknologi digital dan virtual reality juga melahirkan inovasi virtual tourism yang berdampak peningkatan ekonomi masyarakat melalui pelatihan. Program ini dilakukan untuk menciptakan kampung wisata virtual terutama berbasis virtual tourism batik, sehingga pengrajin batik memiliki waktu lebih banyak untuk mempromosikan produknya dan aspek wisatawan. Kampung batik berbasis virtual tour bertujuan memberdayakan komunitas pengrajin batik agar lebih aktif dalam memanfaatkan platform aplikasi digital untuk memasarkan produknya dan menghasilkan aplikasi praktis untuk pemasaran. Aplikasi digital tersebut memudahkan pembeli mengetahui promosi yang dilakukan batik Bekasi dengan memanfaatkan gadget dan memanfaatkan dunia digital. Metode pelatihan menggunakan pendekatan studi kasus, diskusi, ceramah, dan diakhiri dengan evaluasi pelatihan. Hasil dari penelitian yaitu berdasarkan hasil evaluasi user experience pengrajin batik kota Bekasi, dari 50 responden di dapatkah bahwa 55% sangat setuju dimana materi pelatihan dan virtual tour sistem yang disosialisasikan mudah untuk diakses, dapat mengembangkan kampung digital berbasis web virtual tour serta sebagai wadah promosi batik kota Bekasi. Pada aspek pencapaian tujuan para peserta pengrajin batik kota Bekasi, dari 50 responden di dapatkah hasil bahwa 65% sangat setuju bahwa tujuan pembelajaran training dan virtual tour sistem sesuai harapan responden. Harapan peserta pelatihan agar permasalahan pemasaran virtual tour sistem menjadi solusi untuk memperluas pemasaran batik Kota Bekasi.</p> <p>Copyright © 2023, Sudjatmoko et al This is an open access article under the <a href="#">CC-BY-SA</a></p> 

*How to cite:* Sudjatmoko, A., Maryani, M., & Sari, A. C. (2023). Virtual tour-based digital batik village as a place for promotion of Bekasi city batik in the industry 4.0 era: Study on batik tiara. *Journal of Community Service and Empowerment*, 4(1), 55-65. <https://doi.org/10.22219/jcse.v4i1.24028>

## INTRODUCTION

In the Industry 4.0 era, the internet and computers have become essential to everyday life, such as work, communication, study, entertainment, shopping, and others. Digital marketing is the primary management strategy of advertising or marketing (Philip, 2013). Almost all countries are competing to observe digital transformation quickly, so with industry 4.0, every economic actor will face challenges in business (Hafiar et al., 2020). Therefore, it must be watched out for and anticipated, especially by business people, where the millennial generation is predicted to take over many potential markets. Digital marketing is the primary strategy for management to carry out promotions or marketing (Philip, 2013). From several studies conducted by (Suhendar & Fernando 2016), (LD Hollebeek, et al., 2014), (Soegoto, Eddy Soeryanto, 2009), (Susanto, Wijanarto & WM 2014), One form of promotion offered in marketing digital use of virtual tours has positive effects in several places, for example: can be part of a more attractive advertising medium, can make users seem to see and walk around the area, can help someone shape the experience of visiting a place, can generate interest in visiting the business directly (Sri & Siti, 2018; Taryadi et al., 2019).

According to several studies, virtual tours have not been found through digital showrooms for creative industry products that also allow for interaction between creative industry players and consumers. If this is successful, it will positively impact the development of Indonesia's creative industries (Rizkiyanti et al., 2021; Wahyudi et al., 2021; Zahro et al., 2019). Therefore, this service has been carried out in a virtual tourism-based digital batik village as a platform to promote batik in Bekasi City in the industrial era 4.0. A virtual tour is a simulation of a real place or location, so a series of photos or videos are combined with sound effects, music, text, or comments (Rastati, 2020; Yang et al., 2021). A virtual tour, also known as a panorama, can be interpreted as an uninterrupted view because sight is a collection of elongated photographs or a video that captures camera rotation/movement (Sulaiman et al., 2020). Virtual tourism can be called a multimedia field. Virtual tour has a mix of multimedia elements: text, images, sound, animation, and video. Bekasi City is one of the cities in West Java Province, Indonesia. The name Bekasi comes from the word bagasse which has the same meaning as candrabaga, which is found in the inscription on the Tarumanegara royal monument, namely the name of the river that flows through the city. As of 2020, the city of Bekasi has a population of 2,464,719 (Wikipedia 2021), and the town is part of the Jabodetabek metropolitan area, the most populous satellite city in Indonesia.

The area of the city of Bekasi is around 210.49 square kilometers, and the boundaries of the town of Bekasi are North, Bekasi Regency, East, Bekasi Regency, South, Bogor Regency, and Depok City and West, DKI Jakarta Province. In ancient times, people in Bekasi already had the habit of making batik. Along with increasingly sophisticated progress and developments, the impact of this habit is gradually disappearing; however, there are people in Bekasi City who are still consistent in slaughtering, for example, in Rawalumbu (Nurjanah & Rahman, 2021). The development of Bekasi batik is currently not well known in Indonesia. In contrast, batik centers are widely known in several cities/regencies in Indonesia, including Batik Solo, Pekalongan, and Yogyakarta (Sutono & Latifah, 2019). However, this Bekasi Batik has a unique pattern that comes from cultural diversity, both the characteristics of flora, fauna, Betawi culture, and other icons appointed as a cultural heritage and customs of the City of Bekasi. The values of struggle and patriotism from the City of Patriot are also the distinctive features of Bekasi City batik. These characteristics of Bekasi batik are not shared by other batik styles in Indonesia (Chiao et al., 2018; Perdana et al., 2019) s. One of the places used as the location for the Digital Batik Village Based on the Virtual Tour as a Place for Bekasi City Batik Promotion is Tiara Batik Bekasi.

Tiara Batik Bekasi started its journey in February 2019. They were founded under the auspices of CV. Tiara Arunika Dimitry, based on Deed Number 04 dated 18 April 2019 made by Notary Shintawaty Meirindrasari, SH., M.KN domiciled in Bekasi City, which has obtained approval from the Minister of Law and Human Rights of the Republic of Indonesia Directorate General of Public Law Administration based on a Decree No. AHU0028281-AH.01.14 the Year 2019 April 22, 2019. Tiara Batik Bekasi always pushes itself to grow and develop to contribute more to the creative industry, especially batik products in Bekasi City. The creative sector is one of the fastest-growing industries in Indonesia (Amaliyah et al., 2022). Therefore, Tiara Batik Bekasi aims to preserve and develop Batik in Bekasi City. Through cooperation among batik artisans in Bekasi. Tiara Batik Bekasi continues to hone creativity and work hard to present unique and superior motifs suitable for all market segments. Tiara Batik Bekasi also expands the identity of batik by introducing regional standards, which we combine so that the market is more colorful and for the sake of advancing the domestic creative industry (Tosida et al., 2022).

Problems of Human Resources Human resources are fundamental to increasing productivity for entrepreneurs Tiara Batik Bekasi. Currently, Tiara Batik has an administrative workforce of 4 employees, namely 2 SMK and 2 SMA. 4 artisans in Bekasi are, on average, 50 years old and above, making batik takes about 2-4 months, so making batik is expensive, between seven hundred thousand to 5 million depending on the level of difficulty, motives and length of time for the work (Andria et al., 2022). The workforce possesses limited knowledge, so current promotion methods are still limited to the basic knowledge possessed by the staff at Tiara Batik Bekasi. The current number of batik artisans is 4. To invite the surrounding community to preserve the culture of batik, it is necessary to expand and educate the public, especially homemakers, to assist so that later they can increase the family's economic income from the production of batik (Prasetya et al., 2022).

This activity has the following objectives: 1) Providing educational services to the public in the form of training and mentoring to increase operations in the Tiara Bekasi batik business for Batik craftsmen, especially homemakers, to be given training on how to make written batik so that the number of assisted artisans will increase. 2) Providing assistance and training on Marketing management that utilizes digital technology, especially social media and free digital applications that can be used to help with batik marketing. One way that can be used to help market batik in Bekasi City is through the Batik Tiara Bekasi virtual tour program as well as a marketing strategy. 3) Building motivation and a clear business vision. The businessman who Has high motivation and a clear business vision. Building innovation and creativity in entrepreneurship and marketing goods. Entrepreneurs who have entrepreneurial Innovation and creativity and Goods marketing. Partners have not been able to maximize information updates product. So that the operational human resources of partner businesses need assistance updating methods for information-rich batik products, and 4) Assistance on how to carry out promotions to improve outcomes and companion marketing management for batik artisans (Argyriou et al., 2020; Mah et al., 2019).

Marketing management so far has been carried out through social media, Facebook, WhatsApp, Instagram, and direct marketing by visiting housing and offices to offer batik to employees. Due to scale restrictions, the existing outlets are also rarely visited by consumers, so buyers prefer to shop online. Consumers are challenged to shop for clothes online, and buyers cannot see all the batik clothing outlets offered. These conditions allow buyers to need a different experience, to see outlets virtually. Marketing carried out by partners currently needs to be improved so that they can take advantage of online media through currently developing technology, namely virtual tours that can provide information on all batik products in Tiara Batik Bekasi and provide a different experience for visitors or consumers (Kurniartuti & Triastuti, 2017; Widiastuti & Santoso, 2022). The PKM program is expected to motivate and elevate the dignity of batik crafters and support local MSMEs to improve the economic welfare of the community, especially those in the Bekasi city area. Many of the Bekasi batik motifs are inspired by local wisdom around them, such as the snakehead fish motif, Bekasi's struggle monument, natural appearances, and agricultural products. Based on the background of the problems above, there is an identification of issues that are the material of Batik Tiara Bekasi's assistance, namely: 1) the lack of knowledge of the Bekasi community regarding Bekasi typical batik. 2) the lack of media that informs knowledge about Bekasi batik. 3) the information that already exists and is circulating in online media is still incomplete and detailed, and 4) the number of Batik Craftsmen in Bekasi is still tiny and old, so batik education is needed so that it can be preserved and passed on to the younger generation and homemakers as well as the surrounding community so that the typical Bekasi batik is increasingly recognized by the public (O'Neil, 2019; Roziqin & Fajrina, 2021).

The development of Bekasi City batik motif designs that give nuances to culture and historical values and the development of Bekasi City have not been appointed as a distinctive pattern of Batik that can be developed by batik artisans (Nuvriasari et al., 2022). This is an obstacle because of the limited references to the distinctive pattern of Bekasi batik, which is a differentiator from other regions' batik and provides educational and competitive value. Capital constraints as small business actors are a latent problem faced by SMEs. Tiara batik Bekasi is also experiencing this condition. Still, with steps continuously carried out with the community of batik artisans, this capital problem can be solved with various strategies following the capabilities of Batik Tiara Bekasi. Problem solutions are carried out by inviting stakeholders to work together for product development, distribution, marketing, and others (Mamangan, 2021; Setiyo et al., 2022). The aim of this training is that the training provided on a virtual tour basis as a means of promotion that has been carried out can increase the knowledge, attitudes, and skills of the participants and take advantage of the promotion platform to carry out broader marketing. This activity is expected to improve the skills of the community in virtual tour-based digital batik villages. This activity aims to empower the community of batik artisans to be more active in utilizing digital application platforms to market their products and produce practical marketing applications. This digital application makes it easier for buyers to find out the promotions being carried out by Bekasi batik by utilizing gadgets and taking advantage of the digital world. In addition, this dedication will be able to complete one of the Sustainable Development Goals (SDGs) to act to end poverty and ensure that by 2030 all people enjoy peace and prosperity. The existence of this dedication can create creativity, knowledge, technology, and community resources from all societies needed to achieve the SDGs in every context. One of the areas of the SDGs is technology. The technology in this court is in the form of a virtual tour which can create broader marketing so that it can increase income from the surrounding community; this is one of the goals of sustainable development (SDGs).

## METHOD

This service is based on practice through training. Creation research usually integrates creative processes and aesthetics as part of research (Arikunto, 2002). The uniqueness of a work of art and design cannot be equated with theoretical concepts in other research places, although the idea may be used but within certain limits. There are three general factors in creating and designing such art; initial inspiration, information gathering, selection, experimentation, articulation, perfection, generalization, human response, and the result of works of art in a work of art or design (Timotius, 2017).

This service is carried out using the training method for increasing the capacity of virtual tour-based batik crafts. They were training to advance the understanding of artisans and stakeholders related to implementing batik business

development activities. Coaching and mentoring activities for batik artisans are carried out to take advantage of the digital virtual tour of the batik village. The training has been carried out with a total of 4 participants employees, that is, 2 SMK and 2 SMA. Four artisans in Bekasi are, on average aged 50 years and over; processing batik writing needs time around 2-4 months, so makes batik write this price is high, between seven hundred thousand to 5 million depending on the level of difficulty, motive, and ever time 50 participants, consisting of a community of batik artisans, batik designers, cultural observers, batik business supervisors, and some of the millennial generation. Participants are recruited through collaboration with social organizations, recommendations from government agencies, professional organizations, and communities related to the batik business.

The training method uses a case study approach, discussions, and lectures and ends with a training evaluation to determine an understanding of the training material and evaluation of training activities (Moleong, 2017). The program implementation approach method is formulated in Figure 1 and Figure 2.

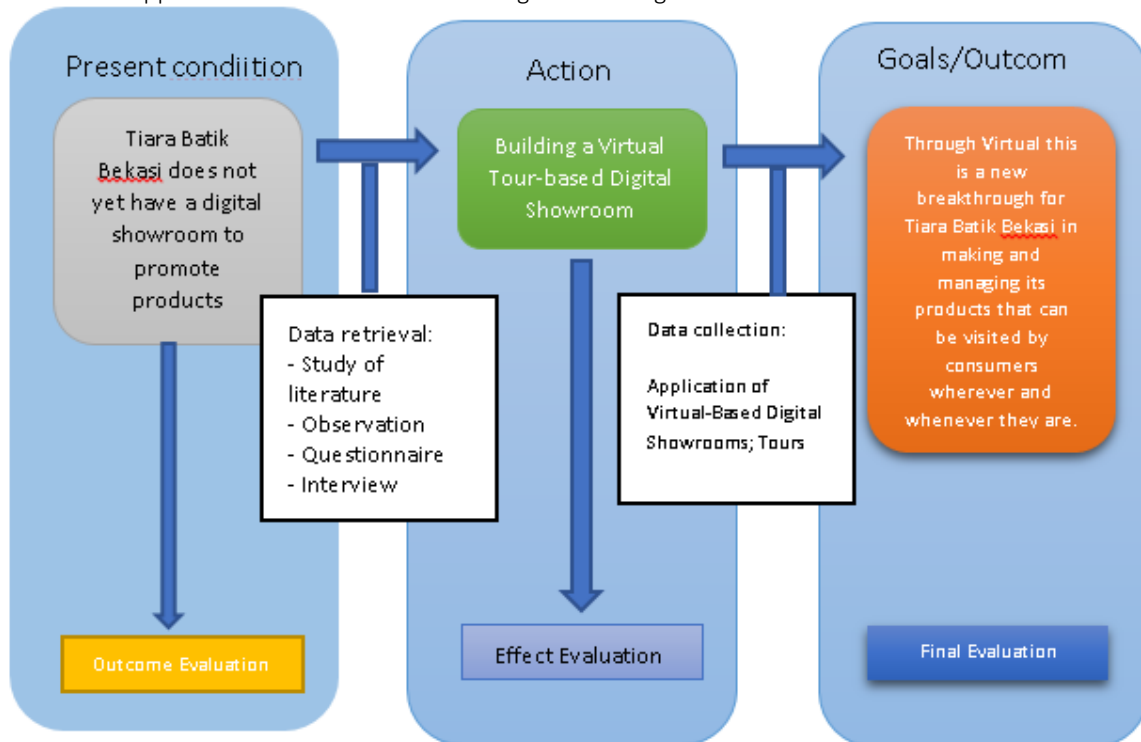


Figure 1. Advanced Development Phase 2: Digital batik village application

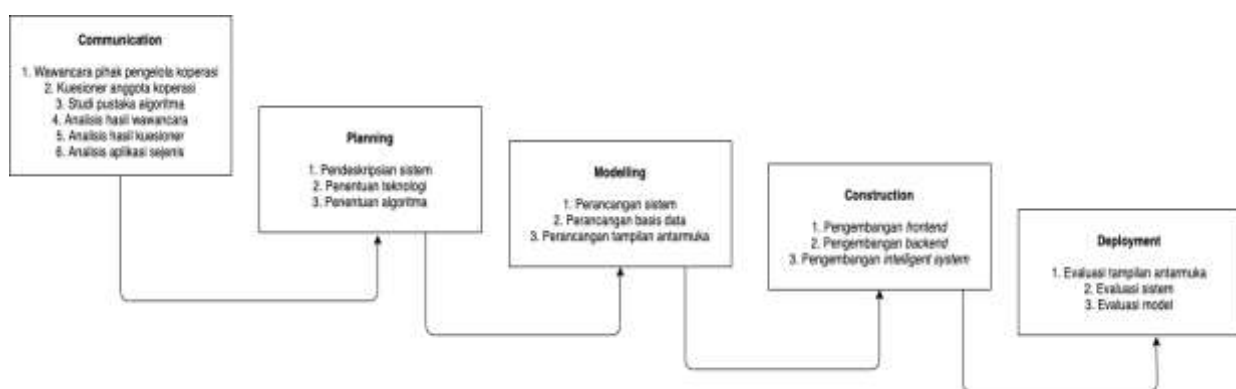


Figure 2. Waterfall system development model

## RESULTS AND DISCUSSION

The training aims to increase participants' knowledge, attitudes, and skills. The training materials provided include marketing management, business management strategies, financial management for SMEs, HR management for SMEs, promotion of batik products, and socialization of virtual tour-based products. In Figure 3 it can be explained that the training is carried out in a way how to manage the digital batik village application via a smart phone, in the application a virtual tour from Tiara Batik Bekasi Digital Batik Village can be displayed. Through this application, people can explore it like

visiting Kampung Batik Bekasi, people can see as if they were in a batik village, like in actual conditions. Unlike the other virtual tours, the Digital Batik Village Based Virtual Tour application can display links or online addresses of marketing media from batik artisans in Kampung Batik Bekasi (marketplaces, online stores, personal web, social media, showrooms).



**Figure 3.** Participants in the virtual tour-based digital batik village as a platform promotion of Bekasi City Batik (Tiara Batik Study) in the industrial revolution era 4.0.

In order to understand how the knowledge, attitudes and actions of the trainees change, it is known that the results of filling out the questionnaire are known as the following results (Figure 4). The learning objectives and the virtual tour system according to the expectations of the batik.



**Figure 4.** Learning Objectives and Expectation percentage

In Figure 4 it can be explained that the results Learning Objectives Met Expectation percentage. Of the 50 respondents, 65% strongly agreed that learning or seminars met the expectations of the respondents, 15% agreed, 15% quite agreed, and 5% strongly disagreed. So it can be concluded that the Learning Objectives Met Expectation percentage carried out by 65% strongly agrees that learning or seminars are in line with expectations.

As for learning materials and virtual tours, the system can be applied to the work of batik craftsmen (Figure 5).

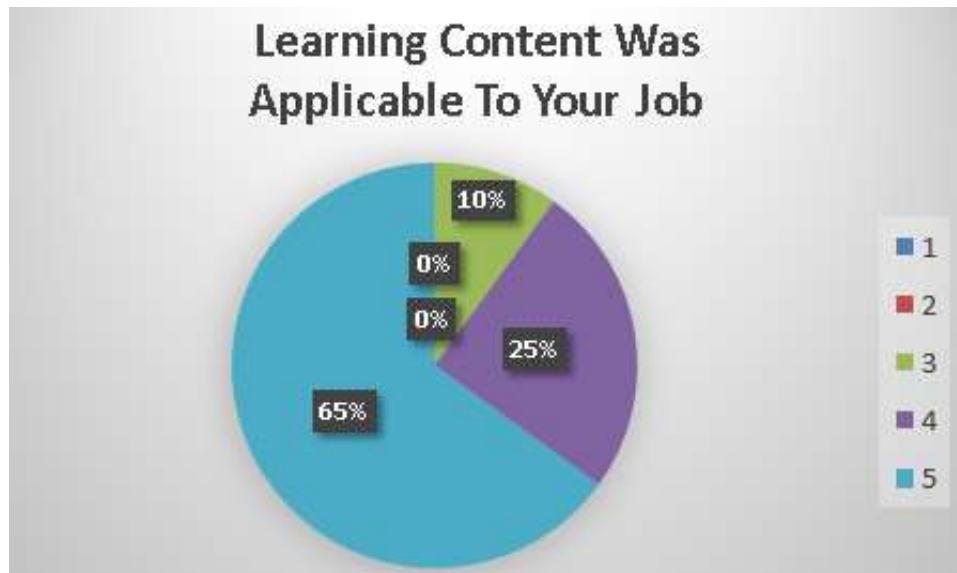


Figure 5. Learning content and the job percentage

In Figure 5 it can be explained that Learning content was applicable to job percentage As many as 50 respondents, 65% strongly agreed that learning or seminars were in accordance with the expectations of respondents, 25% agreed, and 10% quite agreed. It can be concluded that the training participants with the highest filling, namely 65%, strongly agreed that learning or seminars were in accordance with the expectations of respondents.

Learning materials and virtual tours as a system presented are interactive and easy to understand (Figure 6).



Figure 6. The learning material presentation

In Figure 6 it can be explained that the learning material presented is interactive and easy to understand with a percentage of 50 respondents, it was found that 55% strongly agreed that the learning material presented was interactive and easy to understand, 25% agreed, 15% quite agreed and 5% strongly disagreed. It can be concluded that the training participants with the highest filling, namely 55%, strongly agreed that the learning material presented was interactive and easy to understand.

The results of processing data about skilled facilitators help participants understand learning materials and virtual tour systems (Figure 7).



Figure 7. The facilitator skillfully and the learning content percentage

In Figure 7 it can be explained that the Facilitator skillfully helped you to comprehend the learning content percentage of 50 respondents. It was found that 55% strongly agreed that the facilitator skillfully helped you understand the learning material, 25% agreed, 15% quite agreed and 5% strongly disagreed. So it can be concluded that the highest filling, namely 55%, strongly agree that the facilitator is skilled at helping you understand the learning material,

Regarding the length of time learning and virtual tour training systems are used effectively for the learning process (Figure 8).



Figure 8. Learning time and the learning process percentage

In Figure 8 it can be explained that the percentage of learning time was used effectively for the learning process 50 respondents, obtained 55% strongly agree 2 Learning duration is used effectively for the learning process, 25% agree, 10% quite agree, 5% disagree and 5% strongly disagree. So it can be concluded that the highest filler, namely 55%, strongly agrees 2. Learning duration is used effectively for the learning process.

Participants provide an overview of the ease of accessing learning materials and virtual tour systems (Figure 9).

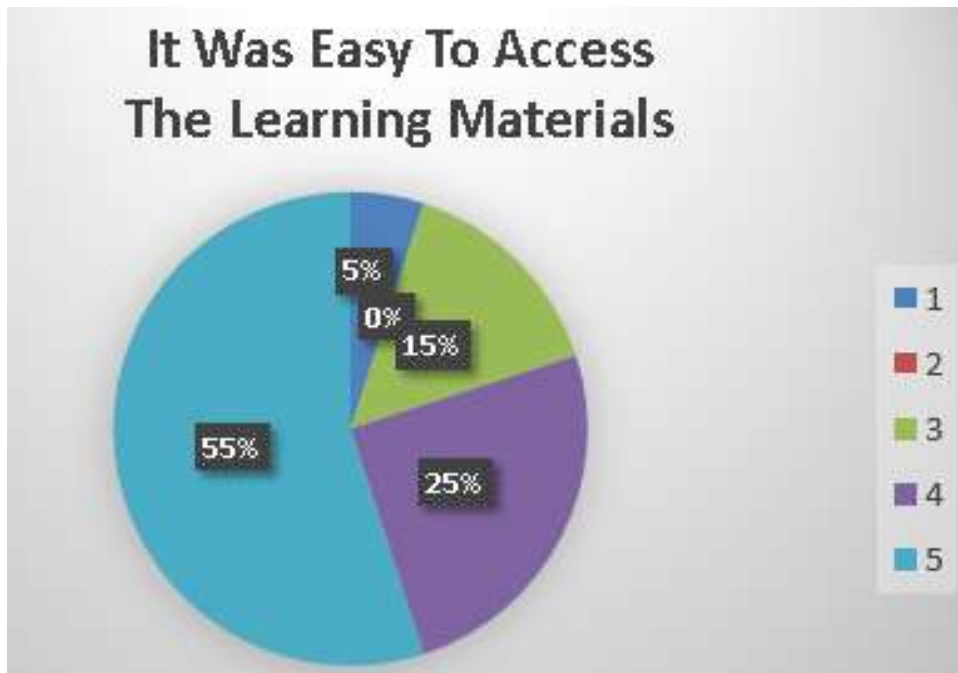


Figure 9. Accessing the learning materials presentation

In Figure 9 it can be explained that it was easy to access the learning materials percentage of 50 respondents, it was found that 55% strongly agreed that it is easy to access learning materials, 25% agreed, 15% quite agreed, and 5% strongly disagreed. So it can be concluded that the highest filling 55% strongly agree Easy to access learning materials

Regarding all the facilities (content, material delivery, and resource persons) in the training that was carried out, the results were in accordance with the needs of the community (Figure 10).

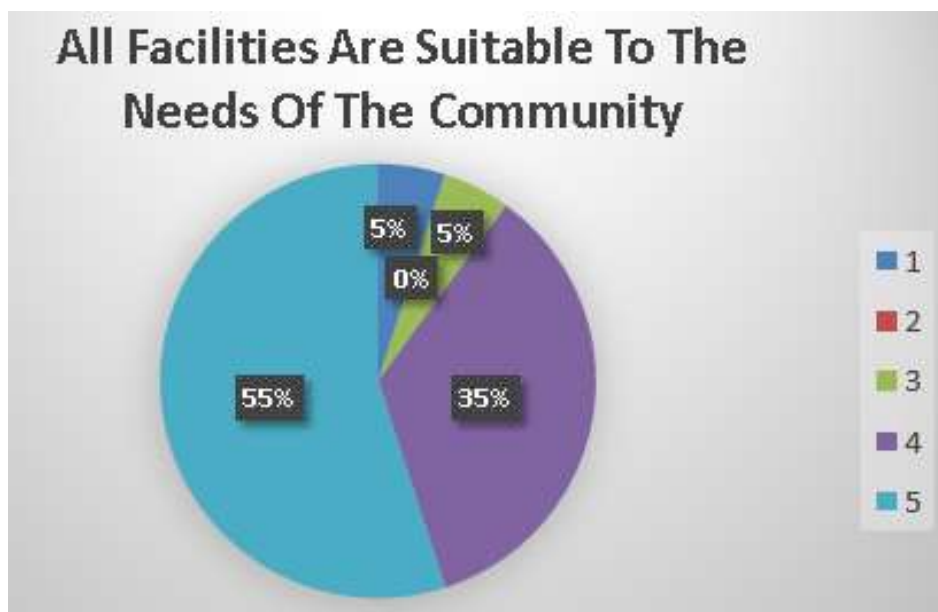


Figure 10. Facilities suitability with the needs of the community percentage

In Figure 10 it can be spelled out that from data processing from 50 respondents, it was found that 55% strongly agreed that all facilities (content, material delivery, and resource persons) were in accordance with the needs of the community, 35% agreed, 5% quite agreed, and 5% strongly disagreed. So, it can be concluded that 55% strongly agree that all facilities (content, material delivery, and resource persons) are in accordance with the needs of the community.

To understand how the knowledge, attitudes, and actions of the trainees change, it is known that the results of completing the questionnaire are known to the various impacts of the Learning Objectives Met Expectation percentage 65% strongly agree that learning or seminars align with the respondents' expectations. So that the learning objectives and virtual tours that have been carried out follow the expectations of the batik maker. So that the training participants can carry out the training properly and apply the movement to the fullest. Attitudes and actions that are carried out optimally



can improve human resources' technical, theoretical, conceptual, and moral abilities so that their work performance is good and achieves optimal results (Mah et al., 2019). In addition to the following attitude, namely the material used in training provided. Based on the movement, filling out the highest questionnaire, namely learning material from the virtual tour, the system can be applied to the work of batik artisans, namely learning content used to job percentage 65% strongly agree that learning or seminars are in line with the expectations of the respondents. Exciting content will tend to increase the interest of the target participants in the training so that the participants can focus on the training provided (Argyriou et al., 2020).

Furthermore, based on the learning material presented being interactive and easy to understand percentage, it can be concluded that 55% strongly agree that it is interactive and easy to understand. Materials are arranged systematically to help carry out more focused training activities. The data processing results about facilitators skillfully assisting participants in understanding learning material and the virtual tour system show that 55% strongly agree facilitators competently help you understand learning material. In this case, training participants are drawn to understanding each training taking place so that trainees can focus on carrying out the maximal exercise. Furthermore, the length of time for learning and virtual tour system training are used effectively for the learning process. So it can be concluded that the highest filler, 55%, strongly agrees. Learning duration is used effectively for the learning process. The course used in training is not boring and does not make the trainees sleepy so that the specified time can be categorized as effective and optimal in carrying out this training. Participants provide an overview of the ease of accessing learning materials and virtual tour systems. So it can be concluded that the highest filling, 55%, strongly agree easy to access learning materials. In this training, it is easier for participants to access the material provided and easy to obtain so that it can enable training participants to return to their studies at home (Bennett & Saunders, 2019; Lu et al., 2021). Furthermore, the results regarding all the facilities ( content, material delivery, and resource persons ) in the training that was carried out showed that the results were following the needs of the community (Chiao et al., 2018; García-Fernández et al., 2020; Perdana et al., 2019). So it can be concluded that 55% strongly agree that all facilities (content, material delivery, and resource persons) follow the community's needs.

In this case, the training follows the facilities provided in terms of content, delivery, material, and resource persons according to the expectations of the training participants. The program evaluation lasts for one month. Observations were made on the Batik virtual tour-based promotion Quality Improvement program at CV. Tiara Arunika consists of planned to stay for one month. The activities carried out in this implementation are batik promotion innovations that the community has carried out. Does the change in virtual tour-based promotions, especially adding descriptions to batik promotions sequentially, affect increasing turnover or sales volume (Mardiana et al., 2020). The program evaluation lasts for one month. Observations were made on batik promotional innovations carried out by the community. Does the change in digital promotion, especially adding sequential descriptions of batik, affect increasing turnover or sales volume (Bhatti et al., 2018; Rachmawati et al., 2018).

## CONCLUSION

Based on the evaluation results of the user experience of batik artisans in the city of Bekasi, out of 50 respondents, it was found that 55% strongly agreed that socialized training material and virtual tour system are easy to access, and can develop web virtual tour-based digital villages. As a forum for promoting batik in the city of Bekasi Tiara Batik as a pilot project, this program can potentially increase the socialization of batik products, marketing, and production capacity according to market demand. In the aspect of achieving the goals of the Bekasi city batik artisans' participants, out of 50 respondents, the result was that 65% strongly agreed that the training and virtual tour system's learning objectives met the respondents' expectations. The hope the training participants answered was a marketing problem, where the virtual tour system was a solution to expand the marketing of batik in the City of Bekasi.

Advanced Development Phase 2 digital batik village application based on the website or mobile apps, from a dashboard and user interface (UI) side that is more user friendly. Stakeholder collaboration to create a batik village with cash characteristics in Bekasi City as a cultural preservation area and industrial town and empowering the community's creative economy can be carried out on an ongoing and sustainable basis.

## ACKNOWLEDGEMENT

Thank you to the Directorate General of Higher Education of the Ministry of Education and Culture for providing grants. Thanks to the Chancellor of Bina Nusantara University for allowing us to obtain and implement this grant. Thanks also for your CV. Tiara Arunika, who has facilitated this dedication.

## REFERENCES

- Amaliyah, A., Dimisyqiani, E., Apriliyani, L., & ... (2022). Improving the MSME Capability of the Madurese Community Through Mobile Series Applications and Digital Marketing Training. *Indonesia ...*  
<https://www.ukinstitute.org/journals/ib/article/view/3449>

- Andria, F., Nuramanah, S., Sunarzi, M., & ... (2022). Optimization of Modern Style Marketing in the Era of Disruptive Technology at SME's Batik New Normal Bogor. *International ....*  
<http://journal.rescollacom.com/index.php/ijbesd/article/view/201>
- Argyriou, L., Economou, D., & Bouki, V. (2020). Design methodology for 360 immersive video applications: the case study of a cultural heritage virtual tour. In *Personal and Ubiquitous Computing*. Springer.  
<https://link.springer.com/article/10.1007/s00779-020-01373-8>
- Arikunto, S. (2002). *Metodologi Penelitian Suatu Pendekatan Proposal*. PT. Rineka.
- Bennett, J. A., & Saunders, C. P. (2019). A virtual tour of the cell: Impact of virtual reality on student learning and engagement in the STEM classroom. *Journal of Microbiology & Biology ....*  
<https://journals.asm.org/doi/abs/10.1128/jmbe.v20i2.1658>
- Bhatti, Z., Waqas, A., & Malik, H. A. M. (2018). Multimedia based learning and virtual tour for performing Hajj. *Journal of Information & ....* <http://jjct.ilmuniversiti.edu.pk/arc/Vol12/i1p5>
- Chiao, H. M., Chen, Y. L., & Huang, W. H. (2018). Examining the usability of an online virtual tour-guiding platform for cultural tourism education. *Journal of Hospitality, Leisure, Sport & ....*  
<https://www.sciencedirect.com/science/article/pii/S1473837617301715>
- García-Fernández, J., Gálvez-Ruiz, P., & ... (2020). The promotion of physical activity from digital services: Influence of e-lifestyles on intention to use fitness apps. *International Journal of ....* <https://www.mdpi.com/831778>
- Kurniartuti, U. K., & Triastuti, R. (2017). Peran PT Telkom dalam Program Kampung UKM Digital di Kampung Batik Laweyan sebagai Wujud Corporate Social Responsibility. *Educitizen*.  
<https://jurnal.fkip.uns.ac.id/index.php/civic/article/view/11941>
- Lu, W., Harncharchai, A., & ... (2021). Social Media Strategy For Batik SMEs Using Customer Knowledge Management. ... *on Digital Arts, Media and ....* <https://ieeexplore.ieee.org/abstract/document/9425748/>
- Mah, O. B. P., Yan, Y., Tan, J. S. Y., Tan, Y. X., Tay, G. Q. Y., & ... (2019). Generating a virtual tour for the preservation of the (in) tangible cultural heritage of Tampines Chinese Temple in Singapore. *Journal of Cultural ....*  
<https://www.sciencedirect.com/science/article/pii/S1296207418307787>
- Mamangan, J. I. S. (2021). ... *STRATEGY OF WRITTEN BATIK AS A CULTURAL HERITAGE (CASE STUDY OF GUNAWAN SETIAWAN BATIK IN KAUMAN BATIK TOURISM VILLAGE, SOLO ....* [media.neliti.com](https://media.neliti.com/media/publications/555097-the-preservation-strategy-of-written-bat-394b25cd.pdf).  
<https://media.neliti.com/media/publications/555097-the-preservation-strategy-of-written-bat-394b25cd.pdf>
- Moleong, L. J. (2017). Metodologi penelitian kualitatif (Revisi). *Bandung: PT Remaja Rosdakarya*.
- Nurjanah, M. K., & Rahman, A. (2021). The Preservation Strategy of Written Batik as a Cultural Heritage (Case Study Of GunawanSetiawan Batik in Kauman Batik Tourism Village, Solo–Central Java .... *Jurnal Ilmu Sosial Mamangan*.  
<https://ejournal.upgrisba.ac.id/index.php/jurnal-mamangan/article/view/4772>
- Nuvriasari, A., Candrawati, K., & ... (2022). Development of Education-Based Tourism and Expansion of Marketing Networks in Kampung Batik Giriloyo. *IMPACTS ....*  
<https://jurnal.ustjogja.ac.id/index.php/IMPACTS/article/view/13061>
- O'Neil, I. (2019). *Digital Health Promotion: A Critical Introduction*. [books.google.com](https://books.google.com/books?hl=en&lr=&id=7pazDwAAQBAJ&oi=fnd&pg=PT6&dq=promotion+digital&ots=Y4J9LfVajU&sig=b7_Two_LvgeF8OvAoOiBfuE3hCw).  
[https://books.google.com/books?hl=en&lr=&id=7pazDwAAQBAJ&oi=fnd&pg=PT6&dq=promotion+digital&ots=Y4J9LfVajU&sig=b7\\_Two\\_LvgeF8OvAoOiBfuE3hCw](https://books.google.com/books?hl=en&lr=&id=7pazDwAAQBAJ&oi=fnd&pg=PT6&dq=promotion+digital&ots=Y4J9LfVajU&sig=b7_Two_LvgeF8OvAoOiBfuE3hCw)
- Perdana, D., Irawan, A. I., & Munadi, R. (2019). Implementation of a web based campus virtual tour for introducing Telkom university building. In *International Journal if Simulation ....* [ijssst.info](https://ijssst.info/Vol-20/No-1/paper6.pdf). <https://ijssst.info/Vol-20/No-1/paper6.pdf>
- Prasetya, P., Widyanti, W., Rosdiana, R., & ... (2022). Optimization of digital marketing strategy through e-commerce is increasing SME sales Batik Cikadu, Tanjung Lesung, Pandeglang. *Priviet Social ....*  
<https://journal.privietlab.org/index.php/PSSJ/article/view/174>
- Rachmawati, R., Hapsari, S. A., & ... (2018). Virtual space utilization in the Digital SMEs Kampongs: Implementation of Smart City and Region. In ... *--Journal of Studies & ....* [humangeographies.org.ro](http://humangeographies.org.ro).  
[http://humangeographies.org.ro/articles/121/a\\_121\\_3\\_rachmawati.pdf](http://humangeographies.org.ro/articles/121/a_121_3_rachmawati.pdf)
- Rastati, R. (2020). Virtual tour: tourism in the time of corona. *6th International Conference on Social and Political ....*  
<https://www.atlantis-press.com/proceedings/icosaps-20/125949696>
- Rizkiyanti, I., Harsritanto, B. I. R., & ... (2021). Batik Production Village's Adaptation on the Pandemic COVID-19. *E3S Web of ....* [https://www.e3s-conferences.org/articles/e3sconf/abs/2021/93/e3sconf\\_icens2021\\_01064/e3sconf\\_icens2021\\_01064.html](https://www.e3s-conferences.org/articles/e3sconf/abs/2021/93/e3sconf_icens2021_01064/e3sconf_icens2021_01064.html)
- Roziqin, A., & Fajrina, A. N. (2021). Will Creative Industries Survive in Industrial Revolution 4.0? An Experience from Batik Tulis Lasem, Indonesia. *1st International Conference on Law and ....* <https://www.atlantis-press.com/proceedings/iclhr-20/125956204>
- Setiyo, J., Mukhlis, I., & Murwani, F. D. (2022). Product Branding Training Model for MSMEs in Probolinggo Regency. ... *and Accounting Journal*. <https://mahamerupublisher.org/index.php/ibmaj/article/view/6>
- Sri, K., & Siti, H. A. (n.d.). THE INFLUENCE OF SOCIO-ECONOMIC DEVELOPMENT ON ENTREPRENEURIAL BEHAVIOR: A STUDY OF WOODEN BATIK CRAFTSMEN IN KREBET .... In *scholar.archive.org*.

[https://scholar.archive.org/work/jzce7igf2zccplqmec4ox66za4/access/wayback/https://rjoas.com/issue-2020-11/article\\_22.pdf](https://scholar.archive.org/work/jzce7igf2zccplqmec4ox66za4/access/wayback/https://rjoas.com/issue-2020-11/article_22.pdf)

- Sulaiman, M. Z., Aziz, M. N. A., Bakar, M. H. A., & ... (2020). Matterport: virtual tour as a new marketing approach in real estate business during pandemic COVID-19. ... *of Innovation in ....* <https://www.atlantispress.com/proceedings/imdes-20/125947186>
- Sutono, S., & Latifah, N. (2019). The Strategic Orientation of Entrepreneurship on The Small and Medium Business At Batik Kudus As A Heritage Culture. *Proceeding of the 2nd International Conference ....* <https://eudl.eu/doi/10.4108/eai.20-8-2019.2288123>
- Taryadi, T., Binabar, S. W., & Siregar, D. (2019). Geographic information system for mapping the potency of batik industry centre. In *journal of information systems engineering ....*
- Timotius, K. H. (2017). *Pengantar Metodologi Penelitian: Pendekatan Manajemen Pengetahuan untuk Perkembangan Pengetahuan*. Penerbit Andi.
- Tosida, E. T., Andria, F., Warnasih, S., & ... (2022). The Academic Triangle Implementation in Bogor New Normal Batik Village as a Collaborative Learning Center. ... *Journal of Ethno ....* <https://journal.rescollacomm.com/index.php/ijeer/article/view/236>
- Wahyudi, M., Parastowo, I. A. D., & ... (2021). Modernisasi" Kampoeng Batik" Di Desa Suratn Rw 03 Kelurahan Kranggan Kota Mojokerto. ... *Dan Inovasi (Jurnal ....* <https://ejournal.stiesia.ac.id/kreanova/article/view/4859>
- Widiastuti, C. T., & Santoso, A. (2022). SWOT Analysis of Batik Semarangan Competitiveness in The Disruption Era. *Indonesian Journal of Business and ....* <https://jurnal.ipb.ac.id/index.php/ijbe/article/view/40806>
- Yang, T., Lai, I. K. W., Fan, Z. B., & Mo, Q. M. (2021). The impact of a 360 virtual tour on the reduction of psychological stress caused by COVID-19. *Technology in Society*. <https://www.sciencedirect.com/science/article/pii/S0160791X20313178>
- Zahro, N. I., Sutono, S., & Latifah, N. (2019). *The Strategic Orientation of Entrepreneurship on The Small and Medium Business At Batik Kudus As A Heritage Culture*. books.google.com. <https://books.google.com/books?hl=en&lr=&id=grEIEAAQBAJ&oi=fnd&pg=PA364&dq=training+digital+batik+village&ots=kSSV6-2Rpg&sig=bkb7ePJ8h2w8Q08FzXlz2xHACKI>