



Assistance of *Batik Tulis* in Nurul Huda Islamic Boarding School Situbondo through E-Commerce to Improve Socio-Economic Levels

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Abstract: *Situbondo Regency is one of the regencies in East Java Indonesia that is thick with Madurese culture and its religious community. In this area, it is also the center of Islamic boarding schools. Interestingly, although in this regency is a pesantren base, there is one pesantren which is quite old and a pioneer in the development of the creative economy through a handicraft called batik (batik tulis). By using the participatory action research (PAR) approach, this community assistance aims to visualize the reality of batik tulis as well as to build awareness in the pesantren community to adopt technology in marketing management, considering that problem lies in marketing. Through the support of E-Commerce system, the results of community assistance show that there are greater prospects in improving the socio-economic level of Islamic boarding schools in the creative economy business of batik tulis with supported by information technology.*

Introduction

Situbondo Regency is one of the regencies in the horseshoe area whose territory stretches on the north and east coast of East Java Province, the majority of whose population is Madurese cultural background. According to Ayu Sutarto¹ the Situbondo community also commonly called the horseshoe area, is a community that lives in the horseshoe area, which is an area in East Java Province that forms a curve like a horseshoe or iron foot. Administratively, the horseshoe area covers Pasuruan, Probolinggo, Situbondo, Bondowoso, Jember, and Lumajang Regencies.

¹ Ayu Sutarto, "Sekilas Tentang Masyarakat Pandalungan" (Yogyakarta: Pembekalan Jelajah Budaya 2006, 2006).

This area has certain characteristics and has long been a pocket of supporters of cultural Islam². Supporters of cultural Islam are driven by muslim scholars (called *Kyai* on Bahasa). Thus, the strong character lies in religious culture and high adherence to community leaders, especially *Kyai* caregivers in Islamic boarding schools. So, it is not surprising if this area is an area where Islamic boarding schools are their social bases. There are at least 160 Islamic Boarding Schools scattered in Situbondo Regency. In Bahasa, Islamic boarding schools called are *pesantren* or *pondok pesantren*. This is inseparable from the genealogy or family lineage and lineage originating from Madura Island, where the path of inheritance of Islamic teachings is also from Madura, through Islamic Boarding Schools. *Santri* --students on *pesantren* terminology-- who have graduated *nyantri* (schooling) in Madura go home or are sent to the horseshoe area to preach and build a cottage there.

In its development the role of *pesantren* which was originally only to teach the knowledge and teachings of Islam, gradually developed in the broader sector of social life. *Pesantren* influences the preferences of the political choices of the community. In some Islamic boarding schools, they have hospital facilities to manage formal education up to the tertiary level. In the economic sector, it can be seen from the success story of Sidogiri Islamic Boarding School in Pasuruan, East Java, which has a minimarket network throughout Java under the brand name "Toko Basmalah"³. In addition, there are also many other *pesantren* that develop creative economics to assist operational management of Islamic boarding schools, both by making travel guidance services to the holy land (Umrah and Hajj) as well as other business ventures, including Nurul Huda Islamic Boarding School in Panarukan Situbondo District which is the object of community assistance. In addition to managing formal education levels from pre-school to tertiary education, this *pesantren* manages business ventures in the form of hand-made *batik*. This condition is the basis for providing assistance in this location.

The *batik tulis* craft of *santri* has the potential to benefit the *pesantren* and *santri* and the surrounding community. The process of making *santri batik* is still manual with *canting* --tools for create of *batik*-- and relies on simple *batik* patterns. This is typical or more value related to the specialty of *batik tulis*. The marketing aspect is one of the most important aspects in making a business plan. Because the company is expected to market its products to consumers. For that we need a good strategy and can make these products sell well in the market. This strategy has been supported in line with current developments in information technology. It can be said that the development of information technology has explored various places in the world. Internet users in the

² Akhmad Siddiq, Leonard C Epafra, and Fatimah Husein, "Contesting Religion and Ethnicity in Madurese Society," *Religió: Jurnal Studi Agama-agama* 8, no. 1 (March 11, 2018): 57-81, <http://jurnalfuf.uinsby.ac.id/index.php/religio/article/view/733>.

³ Pambudi, Rizal Bagus, and Achsanía Hendratmi. "Pengembangan Bisnis oleh Pondok Pesantren Sidogiri Pasuruan". *Jurnal Ekonomi Syariah Teori dan Terapan* 7, no. 1 (June 11, 2020): 87-99. Accessed June 6, 2022. <https://e-journal.unair.ac.id/JESTT/article/view/11037>

current era have increased from year to year⁴. The rapid development of the internet can have a significant influence on life. In the modern era, the use of information technology is very influential in line with technological developments. The use of the internet in a business is very important, which is marked by the many businesses that use e-commerce as an alternative in their business processes⁵. By using E-Commerce in the business of *batik* products will be the stage of change. This stage will be aligned with the development of current information technology that is more practical in all respects. E-Commerce can be relied on in the current era because it has various benefits. These benefits such as, consumers do not need to come directly to the place of sale of products and save costs incurred, reduce promotional costs, ease of transactions and reduce the risk of human error. These benefits can be a factor to increase product sales. In addition, *batik tulis* products will be known by wide consumers so that it will cause attraction. E-Commerce can increase product marketing and win product competition and sales.

In the marketing side of *batik* there are also obstacles, other than related to the previous *batik* motifs that have relatively not met the demand elements of the market share. This happens because the marketing pattern that has been done using traditional models. So that tends to be in demand the market share of *batik tulis* is relatively street and only rely on orders manually. By looking at the development of existing information technology, it is very appropriate to utilize the web as a medium to promote an E-commerce based product. However, in terms of technology implementation such as E-commerce, it is also not free from obstacles. One obstacle is skills and infrastructure⁶. In terms of skills, the object in question is technical personnel where technical personnel have limited skills in solving an issue regarding increasingly dynamic technology. So the possible solution is to improve the quality of technical personnel or use external personnel. While in infrastructure, maintenance and financial issues are one of the factors. With these limitations, E-commerce managers are required to maintain the quality of technology and customer satisfaction.

The development and advancement of information technology now causes the world economy to continue to move towards increasing integration, trade barriers continue to decrease, so big opportunities for small businesses will emerge from their ability to participate in regional and international markets. Adoption of information technology is considered as a means that allows these businesses to compete on a global

⁴ Wicaksono Febriantoro, "Kajian dan Strategi Pendukung Perkembangan E-Commerce bagi UMKM di Indonesia," *Jurnal MANAJERIAL* 17, no. 2 (July 4, 2018): 184, <http://ejournal.upi.edu/index.php/manajerial/article/view/10441>.

⁵ Shabur Miftah Maulana, Heru Susilo, and Riyadi, "Implementasi E-Commerce Sebagai Media Penjualan Online (Studi Kasus pada Toko Pastbrik Kota Malang)," *Jurnal Administrasi Bisnis (JAB)* 29, no. 1 (2015): 1-9.

⁶ Nir Kshetri, "Barriers to E-Commerce and Competitive Business Models in Developing Countries: A Case Study," *Electronic Commerce Research and Applications* 6, no. 4 (December 2007): 443-452, <https://linkinghub.elsevier.com/retrieve/pii/S1567422307000105>.

scale by increasing efficiency and closer relationships with customers and suppliers⁷. The marketing and sales strategy of *batik tulis* can be adopted based on existing information technology, namely the E-commerce strategy. Micro businesses such as *batik* can be used as a great opportunity in Islamic boarding schools. Islamic boarding school as the main gate in the *batik* business has its own charm. Moving from learning to make *batik tulis* together and supported by the role of the development of information technology will make tangible and measurable changes. This change originated from the *batik* business as a small business that has been a driving force for economic growth, job creation and good competitiveness in the scope of the domestic and global markets⁸.

There is some previous research by Ihsaniyati, Wijianto, Suminah, & Anantanyu, 2017 on empowering women farmers' groups in the *batik tulis* business by maximizing the potential of available resources⁹. The strategy is carried out by offering *batik* products to consumers and by participating in exhibitions to increase sales of *batik tulis*. Whereas in this study possess the same sales product namely *batik tulis*, but with a marketing strategy based on E-Commerce. In addition, there is also another research by Nurcahyanti & Affanti, 2018 about the development of contemporary *batik* designs based on regional potential and local wisdom¹⁰. It is focused on the development of designs both in terms of color, design, shape exploration and so on, especially in contemporary *batik* which involves a series of considerations, processes, needs, tastes and materials used. Whereas in this study *batik tulis* is still relatively simple and in accordance with consumer demand which is supported by the development of information technology in its marketing strategy. Furthermore, there were also previous studies by Dewi, Dewi, & Noviasari, 2019 on the design and implementation of the E-Commerce system on *batik* products in Jombang. Thus, there are differences from previous studies¹¹.

This research will use the PAR (Participatory Action Research) approach. PAR is an approach taken in service in terms of research, action, and participation (MacDonald, 2012). The PAR method begins with understanding the problems that occur in society.

⁷ Nurhadi Nurhadi, *Adopsi Electronic Commerce Teori Praktek Dan Implikasi Pada Usaha Kecil Dan Menengah*, 2015.

⁸ Henry Ongori and Stephen O. Migiro, "Information and Communication Technologies Adoption in SMEs: Literature Review," *Journal of Chinese Entrepreneurship* 2, no. 1 (March 2, 2010): 93–104, <https://www.emerald.com/insight/content/doi/10.1108/17561391011019041/full/html>.

⁹ Hanifah Ihsaniyati et al., "Pemberdayaan Kelompok Wanita Tani pada Usaha Batik Tulis: Upaya Peningkatan Pendapatan dan Kemandirian," *E-DIMAS* 8, no. 1 (May 18, 2017): 44, <http://journal.upgris.ac.id/index.php/e-dimas/article/view/1373>.

¹⁰ Desy Nurcahyanti and Tiwi Bina Affanti, "Pengembangan Desain Batik Kontemporer Berbasis Potensi Daerah dan Kearifan Lokal," *Jurnal Sositoteknologi* 17, no. 3 (December 30, 2018): 391–402, <http://journals.itb.ac.id/index.php/sostek/article/view/6779/3825>.

¹¹ Renny Sari Sisfor, Oki Anita Candra Dewi, and Rizky Noviasri, "Perancangan Dan Implementasi Sistem E-Commerce Pada UMKM Batik Di Kabupaten Jombang," *Dinamisia : Jurnal Pengabdian Kepada Masyarakat* 3, no. 1 (June 20, 2019): 36–43, <http://journal.unilak.ac.id/index.php/dinamisia/article/view/2061>.

The problem must be understood in depth and in detail so that it can be known with certainty the cause of the problem. These problems are analyzed which results in alternatives in solving the problem. The intended alternative is a form of action in solving the problem. Implementation of the realization of these alternatives by involving all components of society to participate together so that it will solve various existing problems. In addition, this research also conducts training and assistance to improve the quality and skills of *batik* making of students. Thus, the students at Nurul Huda Paowan Islamic Boarding School have new hard skill that can be used after graduating from the cottage. Furthermore, this research adopts technologies such as E-commerce to be used as a marketing tool. The use of e-commerce is considered relevant to the current business situation where with the internet and technology can reach a wider market.

The problem is that over the last few years, the marketing turnover of *batik tulis* has not been able to grow rapidly, from a target sales value of 20 to 30 percent per year. Marketing is only done based on orders from within the region or a number of requests from outside the region by phone. Marketing has not been able to be massive in many areas both at home and abroad. This has an impact on the amount of production based on ordering goods. Therefore, this service is focused on marketing assistance through the adoption of E-Commerce system technology. Through this media, a management can market their product items to be displayed and informed on online media along with detailed information about the product¹². In addition to marketing factors, another thing that is assisted is the quality of production through standardized *batik* skills.

Based on the background above, this article aims to provide assistance and training in making *batik* and train students' entrepreneurial skills at the Nurul Huda Islamic Boarding School. In addition, this article also aims to implement E-commerce technology as a marketing and sales strategy for *batik* produced by students from the Nurul Huda Paowan Islamic Boarding School. With this article, it is hoped that it can contribute as a step to preserve and maintain the culture of native Indonesian *batik* and foster creative economy by students by utilizing E-commerce in the 4.0 industry revolution era. Through the assistance process, in generally we hoped that there will be an increase in the socio-economic level of the area of the boarding school.

Methods

This research uses the Participatory Action Research (PAR) method. PAR is a qualitative research methodology that requires further understanding and

¹² Ratnadewi Novie Theresia Br. Pasaribu et al., "Pendampingan Komunitas Women Entrepreneur Melalui Literasi Marketing Online Di Jawa Barat," *Engagement : Jurnal Pengabdian Kepada Masyarakat* 3, no. 2 (2019): 193–208.

consideration¹³. Further consideration here means, PAR requires a democratic atmosphere, which is fair where individuals or research targets have "freedom" in expressing their souls and feelings. Research objectives are not only 'research objects' in the real sense, but they also have a critical awareness and awareness of where the desired social improvement is going.

The purpose of this method is to describe and understand, not just predict or control ¹⁴. PAR focuses on the overall human experience and the meaning understood by the individual subject from his experience ¹⁵. As an action research method (action research), PAR integrates data collection and analysis for the purpose of taking action and making changes by producing practical knowledge ¹⁶. In some academic texts, PAR is referred to by several different names, for example: participatory research, community-based participatory research, action research and other terms, which in essence use a participatory approach or involve research subjects (individuals or communities studied)¹⁷. PAR was first developed by Kurt Lewin in 1944, a German psychologist. In general, PAR steps or paths begin with steps to know, to understand, to action and end with to reflection for the next improvement step.

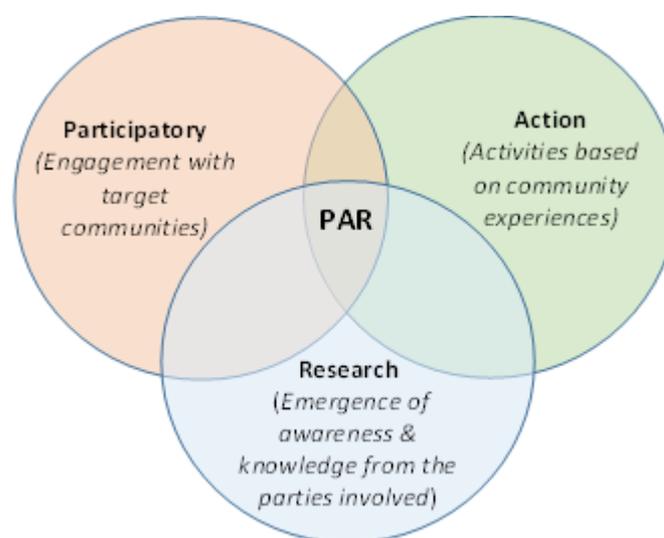


Figure 1. The Derived Model of PAR

¹³ Cathy Macdonald, "Understanding Participatory Action Research: A Qualitative Research Methodology Option," *Canadian Journal of Action Research* 13 (2012): 34-50.

¹⁴ Helen J. Streubert and Dona Rinaldi Carpenter, *Qualitative Research in Nursing: Advancing the Humanistic Imperative* (Philadelphia: J. B. Lippincott Company, 1995).

¹⁵ Macdonald, "Understanding Participatory Action Research: A Qualitative Research Methodology Option."

¹⁶ Angela Gillis , Jackson, Winston., "Research for Nurses : Methods and Interpretation" (Philadelphia, PA: F.A. Davis Co., 2002), <https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=82216>.

¹⁷ Davydd J. Greenwood and Morten Levin, "Action Research, Science, and the Co-Optation of Social Research," *Studies in Cultures, Organizations and Societies* 4, no. 2 (September 1998): 237-261, <http://www.tandfonline.com/doi/abs/10.1080/10245289808523514>.

The target of assistance is students, educators and managers of the Nurul Huda Islamic boarding school in Situbondo, East Java Province. The relevance of PAR in this program because so far positivistic or mainstream research emphasizes research objectives as research objects. In accordance with the principle of PAR, this research emphasizes research objectives not objects but as research subjects. Therefore, the strength of this research lies in the participation of the community in organizing and developing the community. In terms of data collection, data was obtained from participatory focus group discussions (Participatory FGD), in-depth interviews and also observation. The data obtained are analyzed and reported according to the rules of action research that emphasizes participation in terms of to know, to understand, to act and to reflect collectively. Technically, the flow of community service activities is described in the following flowchart:

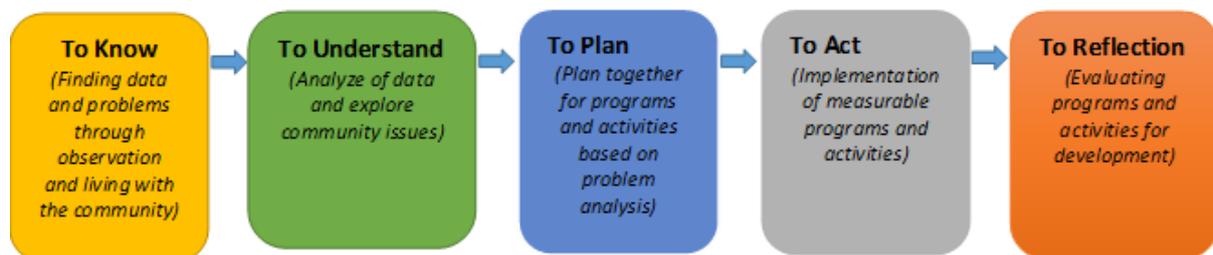


Figure 2. The Assistance Process Flow

Result

Situbondo regency has more than 160 boarding schools spread in its area. The outbreak of the number of Islamic boarding schools in Situbondo Regency was also affected by the distribution of families and descendants of Madura Island, which in fact are of a muslim majority. Islamic boarding school in Situbondo Regency which has the characteristics of Islamic culture which was pioneered by the *kyai* or muslim scholars, one of which is Nurul Huda Paowan Islamic Boarding School. Nurul Huda Paowan Islamic Boarding School is one of more than 160 Islamic boarding schools in Pawoan village, Situbondo regency, East Java. Nurul Huda Islamic Boarding School was founded in 1862 by a Madura-born *kyai*, namely Kiai Maryam or known as Kiai Pecarron. There are several levels of education available at the Nurul Huda Paowan Islamic Boarding School, which starts from playgroup, kindergarten, elementary school, junior high school, vocational school until islamic higher education. Today, Islamic boarding schools are synonymous with intensive religious studies so that Nurul Huda Paowan Islamic Boarding School innovates to compete in the 4.0 industrial revolution era and improves the skills and independence of students by establishing extracurricular activities, one of which is *batik tulis*.

Nurul Huda Islamic Boarding School in starting the beginning of *batik* emphasizes internal factors first with the aim of strengthening competent human resources related to *batik tulis* expertise. The role of students and the community around the lodge makes some variations in *batik* motifs more varied. In addition, the geographical location of the Nurul Huda Paowan Islamic Boarding School in the coast also influences the shape of the *batik* motifs it produces. Nearly the majority of Situbondo *batik* is patterned with seafood and shellfish. So that the *batik* motifs produced tend to be nuanced by marine life. *Batik Enha* is the name of the product branding given by the boarding school, the purpose of the name of the product is to further facilitate the circulation of the *batik tulis* market. The product name is very important as a characteristic of a product's identity to show its quality and legality. *Batik Enha* is more familiar for pronunciation and recall of product names. So, on the basis of choosing the name of the product is a challenge for boarding schools to strengthen the market share of *batik tulis*. Thus, the *santri batik tulis* brand can become famous in its region. In addition, the involvement of the Situbondo Regency Government also had a positive impact on the *santri batik tulis*. The Situbondo Regency Government is also trying to assist and fulfill the needs of *batik tulis* craft based on Islamic boarding schools. So that the Government of Situbondo Regency has launched a *batik* usage program that is characterized by Situbondo. Over time the existence of the production of *batik tulis* is at the peak point stage. Thus, it affects the types of motives that are in accordance with market share.

In the to understand stage –on PAR process, it was found that the sale of *batik tulis* produced by Nurul Huda Paowan Islamic Boarding School experienced sales stagnation and even decreased. In addition, another problem faced is the regeneration of students every year. So human resources or students empowered by Islamic boarding schools often change which causes fluctuations in the quality of *batik* production. Financial problems and human resources are essentially able to make a business out of business. This was obtained from the results of joint discussions between researchers and the community. Therefore, this issue is very important to be understood by researchers and Islamic boarding schools. Basically, problems regarding stagnation and decline in sales are caused by several factors such as quality management, production and marketing systems. The standardization of the quality of *batik tulis* produced by Islamic boarding schools has not yet been considered. Hand-made *batik* is still following the traditional way. So that there is still no guarantee of quality from *batik tulis* that has been produced. In addition, the production system currently in operation is still underdeveloped. As a result, the amount of *batik* production did not increase. This is caused by a lack of increase in production assets due to a lack of management accountability and availability of funds. In addition, the marketing methods carried out by the community are still traditional in nature and rely on the role of the government. To realize a sustainable business, Islamic boarding schools must have an independent marketing system. In addition, if viewed from the development of a very massive

technology today, the boarding school should be able to capture, implement and utilize these changes. One example of the utilization of technological developments for marketing is to use E-commerce.

With the analysis of the problems that have been discussed by the community and researchers, both parties are aware of the importance of proactively building and developing a joint business to create a sustainable business. The essence of a sustainable business is due to increased sales, cash flow and good product quality, a sophisticated marketing system and customer loyalty. Therefore, the assistance provided is expected to increase these factors. To supposedly create a sustainable business, Islamic boarding schools must have an independent marketing system. In addition, if viewed from the development of a very massive technology today, the boarding school should be able to capture, implement and utilize these changes. One example of the utilization of technological developments for marketing is to use of E-commerce. So this problem needs to be followed up so that the *batik tulis* business that is echoed by Islamic boarding schools can increase the number of sales and also empower students to become stock of entrepreneurship knowledge.

In the to act phase, there are several steps in the implementation of assistance activities at Nurul Huda Islamic Boarding School. First, the presentation of material, related to the material presented included knowledge of *batik tulis*, especially models and motifs characterized by local culture, the introduction of tools for making *batik tulis*, and techniques for making *batik tulis*. The material was presented by expert speakers of *batik* art and assisted by the community service team. Second, the assignment of making, in the activity of material presented in relation to the theory, the next step participants were given practical assignments directly. In this stage, students are given the task to make *batik* on cloth that has been provided by making motifs on the cloth. Motifs that have been designed and made are then used as a reference to be thickened using the night through canting tools. After that, it will go into the coloring process in the Mori cloth. Thirdly, the reflection of the activity, at the end of the making of students' *batik tulis* pattern, the training team along with *batik* experts to reflect on the assessment of *batik* motifs that are worthy of market share. The stages are carried out to provide direction for motives that are worth selling and deserve to be displayed in E-Commerce based marketing services. Fourth, evaluation of activities, evaluation of training assistance activities carried out in two ways, including evaluation of the process and evaluation of results. The evaluation of the process focused on the perseverance and seriousness of the training participants in making *batik*. Similarly, related to the evaluation of results. An assessment is carried out where the results of the ready-made *batik* motif can have a sale value and enter the market share in E-Commerce services.

In the training activities, the boarding school invited several experts and practitioners in the process of making *batik* regularly and gradually. There are several

processes carried out by *santri* in the production of handmade *batik*, such as cutting cloth that is intended for manufacturing, cleaning the glue in a cloth with washing, planning *batik* designs, painting in cloth, covering the white part, giving color to the fabric, painting to maintain color, removing wax, making *batik*, boiling cloth to washing *batik* cloth. In the first stage of training in making *batik*, the existing *mori* cloth is cut to the desired size. Then, the *mori* cloth that has been cut is washed first to clean the glue layer found on the *mori* cloth.

The next stage is to designs of *batik* that will be depicted on *mori* cloth. *Mori* cloth is the basic material for *batik* cloth. *Batik* design planning is one of the important things in the production of *batik tulis*. Design planning allows consistent motif results when depicted on actual *batik* fabric. Basically, motive planning also pays attention to the characteristics and characteristics of the surrounding area. Thus, making an added value in the sale of *batik*. The next process is the implementation of the *batik* design planning that has been made namely painting the actual fabric motif. This process must be done carefully so that the motifs painted have the same results as previously planned. This *batik* painting process is likened to a foundation or framework in the production of a *batik tulis*. Fabric painting is done by first drawing a motif in a pencil and then melting the wax and thickening it using a *canting*.

Next thing to do is to close the white part. The meaning of the white part is the part that will not be colored with coloring. This is done because in the process of coloring the layer given the wax is not exposed to color. So that when the color dyeing process, the parts that are made are not exposed to color can produce perfect results. After the color dyeing process has been carried out, the next is to dry the fabric. Then the dried fabric is painted again so that the color given in the first coloring stage becomes stronger.

The next process is removing the wax found in *batik*. The process of removing wax is done by soaking *batik* cloth in hot water. Soaking *batik* cloth in hot water is done until the wax attached to the *batik* cloth is clean. After that, the next step is to make *batik*. The process of *batik* aims to maintain color in the first and second coloring stages. Depends on how many colors there are in the *batik* cloth later. The next stage is the stage of boiling the fabric using hot water in which the fabric has changed color. With the aim of removing wax and fabric motifs will be clearly seen. After all stages are completed, the last is the washing stage. Washing *batik* cloth is done until dry.



Figure 3. Mencanting Process

The development focuses on *batik* designs or motifs that are worth selling and entering the market share. Motive itself is a form, line, or element that is influenced by the surrounding environment. At first the *batik* motifs of the Islamic Boarding School students of the Nurul Huda Islamic Boarding School still had two motifs which described the state of the surrounding environment. With effective and on-target assistance, new designs or motifs of *batik tulis* and selling value. One example of the development of *batik* designs can be seen in *batik tulis* with starfish motifs.



Figure 4. Starfish Batik Motifs

After the creation of a product is complete, the next step is to market the product to consumers. The marketing model used by *Batik Enha* to prepare the *batik tulis* of the Nurul Huda Islamic Boarding School students is a proactive approach to potential consumers. The identification of potential consumers can be based on the characteristics of consumers, especially consumers who have a high interest in *batik* and often use *batik* in every event. To follow the development of the industrial revolution, the role of information technology must also be utilized to maximize profits. One technology that is widely used in marketing strategies is e-commerce. By using e-commerce, *batik tulis* produced by students can penetrate various circles whoever, wherever and whenever. Thus, that e-commerce is considered suitable to be used as a tool for marketing *batik* Nurul Huda Islamic Boarding School. Furthermore, to reach a wider range of *Batik Enha* marketing, E-commerce technology must be clearly implemented. With the use of the E-commerce web page, customers can practically

order the desired *batik*. The following in Figure 5 is an example of E-commerce implementation in *Batik Enha*.

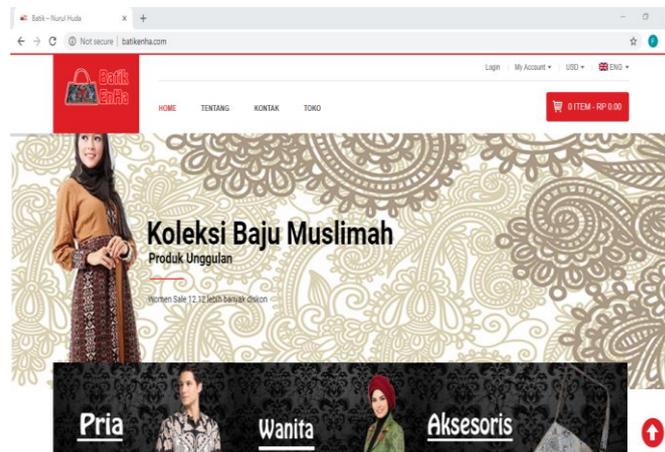


Figure 5. Batik Enha Homepage

At the stage to reflect, there are several important points. First, there is a shared awareness about the need to adopt information technology in supporting business sustainability. Figure 5 reflects the implementation of adoption of E-commerce technology as a marketing facility for *batik tulis* produced by Pondok *Pesantren* Nurul Huda. With the use of E-commerce, it is expected to be able to reach the wider *batik* market and increase sales quantity. Secondly, Islamic boarding schools as social institutions that have been involved in religious education also broaden the spectrum of business including the creative economy sector. This is deliberately done so that students have a soft skill about entrepreneurship after graduating from Islamic boarding school. The hope is that when students do not get a chance to work, students can open their own businesses by utilizing the surrounding community and also influence the nation and country in combating unemployment and poverty. Third, the portrait of the Madurese community, which in part still refers to traditional culture, is apparently open to the pace of technology utilization and awareness of professional management culture. This has become a uniqueness and excellence in which most people who still adhere to traditional culture are less open in utilizing technology and professionalism. Thus, there is acculturation of traditional culture with a few touches and a modern approach.

Discussion

Basically, assistance in the production of *batik tulis* carried out by Pondok *Pesantren* Nurul Huda Paowan is a preventive step when students are confused about looking for work opportunities to build an entrepreneur to improve the economy in the surrounding area. But in its development across generations, the production of *santri batik* slowly has decreased in production and turnover. Due to the large number of

students who graduated and the sustainability of the surrounding community who took over the profession. This makes the initial goal to provide assistance to students and the surrounding community to improve *batik* making again. So that there is a need for regeneration and facilitation of students so that the production of *batik* that has been entrenched in the Nurul Huda Islamic Boarding School can survive in competition and change of students in each class. Assistance to develop students' skills and independence is not limited to the ability to produce *batik tulis*, but also to students' soft skills on management, technology and entrepreneurship in order to strengthen the business they made in the era of the industrial revolution 4.0 today.

The rapid development of technology today also influences and transforms existing business opportunities and processes. Quickly changing traditional business processes to become more modern by utilizing information technology such as the internet, e-commerce, digital advertising and so on. Opportunities that arise as a result of technological developments must be felt, implemented and transformed into a business in order to get a competitive advantage¹⁸, especially by entrepreneurs from among the students. With the implementation of these capabilities in utilizing information technology opportunities for business, it will make a differentiation and utilization of business opportunities more effectively and efficiently. Along with the changing times, technological improvements have caused a shift in communication patterns between producers and consumers. Consumers will find information about products to be purchased by comparing similar products using information technology tools without having to go directly to the field such as online sales. The solution to the lack of proper technology is to work with what you have. The terms "online business" and "technopreneur" are now widely used in the internet world. Positive opportunities for fascinating prospects can be found on a variety of websites on the Internet. Consumers, merchants, and other business partners now have a new avenue for interactive contact thanks to the internet. This enables firms to communicate and collaborate in real time on product development, marketing, shipping, customer care, and technical assistance.

Large and small producers, as well as retail sellers in general, are increasingly turning to e-commerce. This is due to the fact that reaching consumers through internet media is easier in terms of introducing or selling things. Furthermore, E-commerce facilitates interactions between customers and producers. E-commerce is an electronic business mechanism that focuses on individual-based business transactions using the internet (digital network-based technology) as a medium for exchanging goods or services between two institutions (business to business) and direct consumers (business to consumer), bypassing the previously dominant space and time constraints.

¹⁸ David J. Teece, "Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance," *Strategic Management Journal* 28, no. 13 (December 2007): 1319–1350, <https://onlinelibrary.wiley.com/doi/10.1002/smj.640>.

The internet has a transformative impact in the business field, resulting in a new business paradigm. The internet provides a number of appealing characteristics for both consumers and businesses. The internet is the most recent electronic medium to facilitate e-commerce, and it is rapidly improving. Students must be resourceful in order to take advantage of this chance to foster a creative economy. The creative economy generated by students must be based on the Qur'an and Hadith, so that the ideal society according to Islam has been followed by *pesantren*.

Assistance and empowerment of students and the surrounding community to develop a creative economy is considered to have a positive impact on social change. This is in line with previous research that discusses the impact of empowering women to create social change such as economic improvement and social freedom¹⁹. This change is because every individual has skills that can be utilized to contribute to opening new jobs and eradicating poverty. So that the activity needs continuous development in order to continue its positive impact. But it must also be supported by community participation as an end or object where the community must be active, dynamic and have a personal awareness to realize business sustainability and positive impacts²⁰. In addition, the existence of entrenched empowerment will make acculturation impact on the creation of these cultural characteristics and characteristics²¹. But in terms of technical support for business sustainability, adoption of information technology is also a prerequisite for increasing financially and non-financially. One of the technology adoptions used in this article is e-commerce. E-commerce is considered to have a positive effect on a company's financial performance²². This is because the use of E-commerce makes the range of marketing undertaken by companies more extensive²³. So, it is very important for every business to realize and adopt the advancements in technology that exist today. The results of this assistance are also in line with what was done by Ratnadewi et al²⁴ that by adopting an information technology system, it will have the potential to improve sales performance.

¹⁹ G. Laverack, "An Identification and Interpretation of the Organizational Aspects of Community Empowerment," *Community Development Journal* 36, no. 2 (April 1, 2001): 134–145, <https://academic.oup.com/cdj/article-lookup/doi/10.1093/cdj/36.2.134>.

²⁰ Hedayat Nikkiah and Ma'rof Redzuan, "Participation as a Medium of Empowerment in Community Development," *European Journal of Social Sciences* 11 (November 1, 2009): 170–176.

²¹ Michael Odei Erdiaw-Kwasie and Michael Yaw Acheampong, "Empowerment and Community Salience in Multi-Party Collaboration: Empirical Lessons for Development Planning," *Development in Practice* 28, no. 7 (October 3, 2018): 932–942, <https://www.tandfonline.com/doi/full/10.1080/09614524.2018.1486805>.

²² Agnes L. DeFranco, Cristian Morosan, and Nan Hua, "Moderating the Impact of E-Commerce Expenses on Financial Performance in US Upper Upscale Hotels," *Tourism Economics* 23, no. 2 (March 21, 2017): 429–447, <http://journals.sagepub.com/doi/10.5367/te.2015.0510>.

²³ Gary D. Gregory, Liem Viet Ngo, and Munib Karavdic, "Developing E-Commerce Marketing Capabilities and Efficiencies for Enhanced Performance in Business-to-Business Export Ventures," *Industrial Marketing Management* 78 (April 2019): 146–157, <https://linkinghub.elsevier.com/retrieve/pii/S0019850117301864>.

²⁴ Ratnadewi Novie Theresia Br. Pasaribu et al., "Pendampingan Komunitas Women Entrepreneur Melalui Literasi Marketing Online Di Jawa Barat."

In practice, the practice of this study also has limitations. In terms of methodology, participatory action research is a qualitative method that has no validity in practice. So, there is a need for a quantitative approach to validate these results. In terms of objects, Situbondo which is located on the island of Java which incidentally still has access to information technology that is very adequate. Therefore, it is necessary to develop empowerment in Indonesian regions that still have low human development indexes such as remote and outermost regions of Indonesia. So that with this development makes an idea of equitable quality of life in Indonesia. In addition, in terms of research subjects, it is not only limited to students in Islamic boarding schools. Indonesia, which consists of various tribes, cultures, customs, languages, religions, races, needs equality to realize national unity.

Conclusion

Situbondo Regency - East Java Province has a strong religious culture, where there are many Islamic boarding schools. One of the Islamic boarding schools that do not only teach religious education is the Nurul Huda Islamic boarding school. Here, the students are also taught *batik* skills and marketing management in supporting the creative economy. However, there are obstacles in terms of marketing whose turnover is relatively stagnant. Through a participatory action research approach, community assistance activities are carried out in order to find joint solutions to problems that occur. To find out and understand the root of the problem, observations were made where the companion team lived for a certain time with the community. Interact and collaborate with him.

From this process, the analysis results that the problem that occurs is that there is no technology adoption to help improve marketing performance. So based on the PAR model phasing flow, the follow-up action stage is how to adopt an e-commerce system. This finding is in line with what was conveyed by Ratnadewi, et.al above that online marketing or e-commerce can help increase sales value. A critical reflection of this assistance process is the shared awareness by the community about the importance of adopting information technology. However, it is still necessary to continue assistance and evaluate its effectiveness of this process. In the future, it is necessary to evaluate or research the effectiveness of the adoption of the e-commerce system, for example by using a quantitative measurement model.

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