

Participation of Business Actors in Implementing Circular Economy on Batik Products in Kauman Batik Kampung, Pekalongan City

Partisipasi Pelaku Usaha dalam Penerapan Ekonomi Sirkular pada Produk Batik di Kampung Batik Kauman, Kota Pekalongan

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Abstract: This research explores the application and potential of batik business actors in the implications of the circular economy (CE) model in Pekalongan, Indonesia. As a prominent cultural heritage, the batik industry is essential to the regional economy. However, conventional linear production and consumption practices have resulted in environmental challenges, resource depletion, and waste generation. By embracing CE principles that emphasize resource efficiency, waste reduction, and closed-loop systems, the batik industry in Pekalongan can develop sustainable and environmentally responsible practices. This study examines critical aspects of CE implementation, starting with community participation in the batik, drawing insights from successful CE implementation in other industries. The implementation of CE in other industries is the role of business actors in the business chain outside Kampung. This paper analyzes the potential benefits and challenges of implementing CE in the Pekalongan batik industry and the role of stakeholders in promoting circularity. By highlighting the feasibility of the CE model, the results of this research are that the level of community participation in implementing a CE has not been maximized with the potential remaining production output so that this aspect of the condition becomes a sustainable opportunity to encourage sustainable practices in the Pekalongan batik industry.

Keywords: Circular Economy, Kampung, Batik

INTRODUCTION

Based on data obtained from the Directorate General of Waste, Waste and B3 Management of the Ministry of Environment and Forestry (*KLHK*), the condition of waste volume in Indonesia was recorded in 2021 at 68.5 million tons, then increased in 2022 to 70 million tons (Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia, 2023). The total waste volume, 24% or around 16 million tonnes of waste in Indonesia must be managed. The increasing volume of waste in Indonesia can have a negative impact on humans and the environment if it is not handled. Therefore, efforts need to be made to deal

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with the waste problem in Indonesia. One effort to reduce the problem of waste can be made by implementing and shifting community behavior patterns which originally applied the concept of a linear economy with cycles (take-production-consume-throw-away-waste) to a circular economy with cycles (take-production-consumption-turned into waste-reprocessed reused) (Islami, 2022).

A circular economy can be easily recognized by the 5R principle (Reduce, Reuse, Recycle, Recovery, and Repair), which aims to maximize efficiency and effectiveness in the use of resources to provide sustainable benefits and reduce the volume of wasted waste. In general, the circular economy is a concept for integrating economic activities and the environment in a sustainable manner where the circular economy framework focuses on closing the production-to-consumption cycle so that the life of the product can be extended, reused, recycled into the same product or other products (Munaro et al., 2020; Franco-García et al., 2019; De Kock et al., 2020).

In the context of development and spatial planning, the focus of circular economic development is mainly carried out in urban areas, especially to overcome the problem of waste in dense environments (Pomponi & Moncaster, 2017). One of the denser environments in urban areas is the urban village; not only do people develop, but also the cultural history that underlies this urban village (Setiawan, 2010). This condition requires the community as the actor to manage using the economic participation model, understood as an alternative economy that generates employment and income, as a response to demands for social and labor inclusion. This development resembles an innovative, more humane, inclusive development model compared to the capitalist market-driven economic development model (Gutberlet et al., 2020).

Creative economic development activities in Indonesia that have a history and influence on city planning are the batik industry, generally a small and medium industry (IKM), which is the livelihood of some rural and urban communities (Wijaya et al., 2020). Characteristics of batik businesses in Indonesia include bosses/business owners and batik workers/laborers. Business owners have large profit margins in this system, while batik workers or laborers are still below standard. This condition makes the regeneration of batik business actors and batik workers/laborers still a challenge (Phelps & Wijaya, 2020). This condition influences production development: if workers carry out their activities efficiently, production will improve. Obtaining skilled labor in the batik industry takes a lot of work. This is all due to the view of young men and women in the workforce that batik work (batik stamping) is a job for parents (Tamamudin, 2016). The trend of the young generation's low interest in being involved in the development of the batik industry is that currently, the workforce for the batik industry is getting older, and it isn't easy to find replacements. On the one hand, this is caused by the minimum wages for workers due to the inequality of the subcontracting system in the batik business.

The existence of Batik is undoubtedly not fading; it is increasing because Batik is one of the cultural works of the Indonesian people, which has been passed down from generation to generation. The development of the batik business in Indonesia has positively impacted economic growth in several regions. One of the cities in Central Java Province, nicknamed "Batik City," is located in Pekalongan City. Pekalongan City is famous for the art of Batik; the work of Pekalongan City batik artisans attracts local and foreign tourists to buy and sell at more economical prices and various types of batik motifs. It is fitting that Pekalongan City continues to experience development so that it becomes the largest batik center in Java. One of the well-known locations for typical Pekalongan City batik is in Kauman Batik Village, East Pekalongan Sub District, Pekalongan City (Wijaya et al., 2020).

The development of Batik in the village has grown in various communities with different religious, educational, cultural, and creative economic backgrounds (Phelps &

Wijaya, 2016). Kampung Kota, like Kauman, which is famous for its high density, has a positive impact, as is often seen from an economic perspective related to productivity and population density, where Kampung Kauman causes density, or conversely, skilled people prefer to live in high-density environments like a creative crafter (Hadi & Rudiarto, 2018). Looking at the other side of the advantages of batik, the production process certainly has a negative impact on the environment in the form of waste resulting from batik production.

The batik business, of course, produces batik products and has waste in the form of solid, gas, or liquid. Solid waste can be leftover wax or candles and also rags or excess cloth that cannot be recycled naturally quickly. Waste gas is in the form of heating fumes and wax vapor, which form during painting motifs and colors on batik cloth. The generation of liquid waste is in the form of liquids contaminated by acid solutions, oils, dyes, chemical solutions, detergents, synthetic dyes, and so on, which are dangerous if they flow into rivers or the sea. Waste from the batik industry will be challenging to recycle naturally, so a process is needed to provide sustainable benefits and add economic value. If batik waste is not managed correctly, it can cause problems for the surrounding environment. Therefore, it is necessary to manage it so that it does not cause impacts on humans and the environment. One example of how business actors implement a circular economy in managing batik waste is that the batik industry produces solid waste, one example of which is rags or leftover cloth.

This research is a development of participatory planning research in urban economic sustainability, starting with identifying the economic potential of Batik, where Pekalongan City is experiencing a change in the value chain pattern from producers to marketing, such as tourism (Wijaya et al., 2020; Phelps & Wijaya, 2020; Damayanti & Latifah, 2017). From business actors, identification with the social learning possessed by business actors results in adapting business actors to their needs (Wijaya et al., 2021). Meanwhile, urban planning and sustainability of village areas with cultural preservation are essential elements that business actors must carry out (Hadi & Rudiarto, 2018; Sukmawati & Yuliasuti, 2016; Roychansyah, 2010). Meanwhile, applying a circular economy in the batik business, especially in batik products, has potential that has yet to be widely researched. This research discusses the participation of business actors in implementing a circular economy on batik products in the Kauman Batik Village, Pekalongan City, so that they know the characteristics of business sustainability and city development.

METHOD

This section describes the experimental and methodological details used to prove the accuracy and usefulness of the approach proposed in this paper. This analytical study uses a spatial data analysis method, which was carried out to determine the physical conditions in Kauman Village, East Pekalongan District, Pekalongan City.

Method of Collecting Data

Data was collected through secondary surveys with institutional data, followed by primary data from informant sources in the form of notes and interview results, field observation results, and data regarding informants. The population in this study is all Batik MSMEs in Kauman Batik Village, Pekalongan City, in 2023. In this study, to reduce the population, the number of Batik MSMEs in Kauman Batik Village, based on the calculations above, the number of samples that were respondents in this study was 18 MSMEs or around 25.7% or 26% of Batik from the total number of Batik MSMEs in Kauman Batik Village, Pekalongan City. Sample calculations are carried out to simplify the processing of the data that has been obtained.

Method of Data Analysis

Quantitative descriptive aims to create a picture or describe the condition of the characteristics of batik business actors. In preparing this paper, a quantitative descriptive technique was used to analyze the weighted results regarding applying a circular economy in the batik waste management process in Kauman Batik Village. Continued with spatial analysis using Geographic Information System data processing to identify the distribution of batik products. This spatial data analysis results depend on the place and object being analyzed. The spatial analysis function can be used systematically and correlated with spatial data using techniques or calculation approaches. The function of spatial analysis, among other things, refers to spatial data, which points to an inseparable network. The analysis continues by describing questionnaire data to identify the implementation of circular economy in the study location.

RESULT

Characteristics of Batik MSMEs, Kauman Batik Village, Pekalongan City

Pekalongan City is one of the cities in Indonesia which produces Batik. Batik has become the main superior product in Pekalongan City, based on Mayor's Decree Number 530/216 of 2002, issued on May 1, 2002. The people in Pekalongan City, the majority of whose residents, have their livelihoods in the industrial sector, both the batik industry, convection, handloom weaving, and ATMs, as well as other industries spread throughout all sub-districts in Pekalongan City. This condition is shown by data for 2023 based on KBLI investment potential of 58.67% in textiles and textile products and 8% in ready-made clothing (DTPMTSP, 2023).



Figure 1. Map of Location Distribution of Batik Patchwork Fabric Managers

Actors who manage and utilize Batik solid waste (patchwork) are convection or tailors who work in the batik production process. The batik production process at the Batik cloth sewing stage produces patchwork. Based on the results of the questionnaires for batik business actors, most of the patchwork is handed over to convection or tailors. This is because the quantity and the size are relatively small in the view of batik business actors, so they cannot be reused. Actors who manage and use patchwork, to find out more about the use of patchwork, took 3 examples of convection or tailoring, which is the informal sector in several batik MSMEs in Kauman Batik Village. The three convections or tailors are located in Tirto District, Pekalongan Regency.

From the data obtained by convection parties or tailors, there are those who sell patchwork cloth for use by other parties. Apart from that, convections or tailors also manage and utilize patchwork as children's nightgowns, bed sheets, pillowcases, bags, accessories, trouser pockets, children's nightgowns, and wallets for resale. According to respondents, the use of patchwork was based on the personal innovation of the tailors. The needs to be organized no training regarding the use of patchwork. The training was held at the village hall, and cooking and using plastic packaging (coffee, floor cleaners, detergents, etc.) were discussed. The advantages obtained from products resulting from the use of patchwork are that the prices are more affordable, the motifs are more diverse, have their uniqueness, can increase the income of convection or tailors, can hone the creativity of convection or tailors, and most importantly reduce wasted waste and reduce environmental pollution.

Product Distribution Patterns and Locations of Utilization of Batik Solid Waste (Patchwork)

The batik business, of course, produces batik products and also produces waste in the form of solid, gas, or liquid. This research focuses on solid waste, which can be leftover wax, candles, rags, or leftover cloth that cannot be recycled quickly. The types of waste produced by 19 respondents, namely 58% or a total of 11 respondents, have only fabric waste, 26% or a total of 5 respondents make rag and wax waste, 11% or a total of 2 respondents, do not produce waste, and 5% or a total of 1 respondent has only nighttime waste. Thus, the solid waste from batik production is mainly found in patchwork waste. The volume of batik solid waste generation in the form of patchwork is 37%, or 6 respondents produce batik waste less than (<) 1 Kg/Production, 22% or 5 respondents do not know the volume of waste generated, 21% or 4 respondents produce batik waste is 1 Kg/Production, 11% or 3 respondents have more than (>) 1 Kg/Production, and 10% or 1 MSME does not produce batik waste. This shows that of the 19 respondents, 13 produce patchwork waste. In this case, management is needed; if rags become discarded waste that is not used, it will have a destructive impact on the environment because rags will be challenging to recycle naturally quickly. This does not indicate that waste has gone through the consumption stage and is then managed, utilized, and generated selling value by business actors. Figure 2 is a more detailed explanation of the circular economy flow.

The linear economy concept is taking - produce - consume - becomes waste. The recycling economy is taking - create - consume - recycle - become waste. The circular economy concept is taking - make - consume - becoming waste - reprocessing - reusing. The circular economy stage requires a consumption process. Still, the reality in the field is that the process of managing and utilizing Batik solid waste in patchwork does not carry out the consumption stage. The reduction stage through reuse, repair, recycling, and return is carried out by convection or tailoring, which is the informal sector (Koszewska, 2018).

In the questionnaire statement, "Companies have received used and unused goods for recycling," the response was 100%, and 19 respondents answered, "Strongly Disagree". In this case, how far does the circular economy application in the management of batik

waste in Kauman Batik Village, which is the circular economy, still need to be implemented? The results found are innovations to utilize solid batik waste in the form of patchwork so that it becomes a business idea to increase income and hone the creativity of informal workers sectors.

In this case, an example of implementing a circular economy in managing batik waste can be done by selling, sorting, or distributing patchwork to home industries that can work patchwork into accessories, floor mats, bed sheets, carpets, etc. If the patchwork has been managed and can be reused for a new product, it has become a product with economic value, so it can be redistributed to the batik industry and remarketed. This can reduce solid waste generation from the batik industry and provide added economic value.

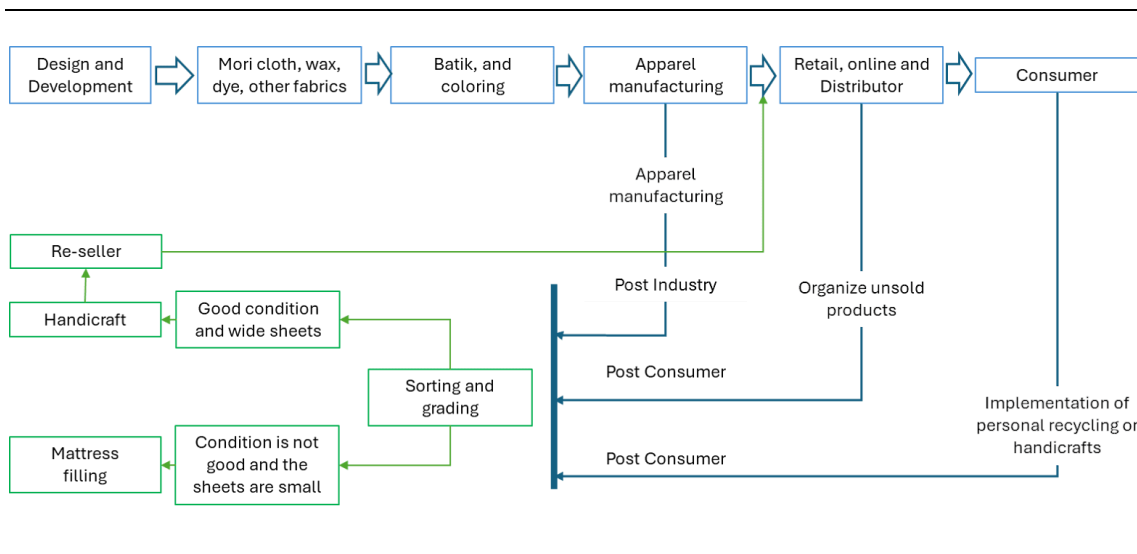


Figure 2. Batik Recycling Process

There is the generation of batik waste, which can have a destructive impact on the environment. Then, I saw the current condition of rubbish/waste in Indonesia, which has increased. Some still need to be managed; it is necessary to deal with the problem of batik waste in Kauman Batik Kampong by implementing a circular economy as a form of local economic development, reducing the volume of waste, and utilizing batik production waste. The analysis that will be discussed aims to find out how far the batik business actors in Kauman Batik Village, Pekalongan City, are handling, managing, and implementing a circular economy.

Participatory Role of Batik Business Actors

Circular cities involve various stakeholders, including public administration, research institutions, the business world, and society. Stakeholder engagement is critical, emphasizing global responsibility, information transparency, open dialogue, and joint problem-solving (Paoli et al., 2024). The participation process involves citizens, representatives of groups or associations, and relevant governments. In this research, the people of Kauman Batik Kampong and business actors in Kauman Batik Kampong were involved. The participatory role of batik business actors in implementing a circular economy. Individual performance is influenced by knowledge, local wisdom, and action plans. Organizational capacity is affected by programs, information, leadership, local knowledge, and facilities (Nugraha et al., 2016).

Participation through empowerment explains that there are 4 empowerment processes (Wilson, 1996): awakening, understanding, harnessing, and using. The participation of business actors in empowering batik makers is identified as follows. The first is awakening: in this stage, the community is made aware of the skills, attitudes, and abilities they have and plans and hopes for better and more effective conditions. Conditions in Kauman Batik village, Pekalongan City, related to the circular economy, are not yet fully aware of the potential for waste to be processed into other goods. Next is the opportunity for batik recycling, which has yet to be implemented because the market still needs to be fully formed. The current condition concerns awareness of recycling only using wax waste left over from the batik-making process.

Second, understanding, in this stage, the community is given a new perception and learning about themselves, their aspirations, and other general conditions. The Kauman Batik Kampong business cluster, as an institution in this business, has carried out business by providing training on processing waste products from the production process, such as wax and patchwork, for both the government and other stakeholders. However, implementing this process takes time, and resources are not available, so the process is given to other parties outside the village.

The next stage of participation in empowerment, such as the third, is harnessing: After the community understands and is aware of empowerment, the time for them to determine how to use it for the benefit of their group has not yet occurred for batik business actors. The next stage, the fourth part, is Using Abilities and skills as part of daily life that have not yet been implemented.

DISCUSSION

This discussion will be divided into 3 parts: where the first part is the internal batik industry, the second is batik production and its impact on the circular economy, and the last is the participation of business actors in the circular economy. The first is the influence of batik business actors in Kampong Batik Kauman on space. As explained at the beginning, batik business actors impact the development of villages/business locations, and secondly, they impact the surrounding area (outside Pekalongan City). Based on (Wijaya & Buchori, 2022; Wijaya & Buchori, 2023), The push and pull factors for urban growth are a result of the economy, and this also happens in Pekalongan City and the surrounding areas where batik has a role in the development of the Greater Pekalongan area. In general, the results from the remaining batik production will also impact the sustainability of the surrounding area because Pekalongan Regency and Pekalongan City have limitations in providing waste facilities.

Second is the concept of a circular economy is gaining increasing prominence in scientific and political discussions, especially in the European context. Circular cities, as ecosystems, require the involvement and participation of various key actors, including public administration, research institutions, the business world, and society. The role of business and society (Paoli et al., 2024; Dyer et al., 2021) in Indonesia, the implementation of a circular economy and circular cities is something new. It is being developed to sustain cities from waste or production waste, especially for micro, small, and medium enterprises. Regarding batik product data from the Ministry of Industry's Center for Crafts and Batik (BBKB), 3,159 batik business units are recorded throughout Indonesia. Large-medium scale batik industries number 208 units (in 2021), and micro-small and medium-scale batik businesses number 2,951 units (in 2018). This is important because batik products are spread throughout Indonesia (BKKB, 2022).

Batik is one of the superior products of MSMEs in Indonesia, and Pekalongan City is part of its history. There are 70 craft and micro, small, and medium enterprises (MSMEs)

spread across the Kauman Batik Kampong area. From 70 MSMEs, a representative sample was calculated so that 18 respondents were needed to represent the total number of MSMEs in Kauman Batik Village. Kauman Batik Kampong is a batik tourism village that produces various types of batik, such as stamped batik, written batik, printed batik, and combination Batik. The batik production process requires workers from batik craftsmen and workers other than batik craftsmen who are needed to help business actors manage the business, such as in the marketing department, both online (admin) and offline (shopkeeper). After the production process, batik products enter the marketing stage. Product marketing can be done offline or online. Offline marketing is a direct buying and selling process between producers and consumers at specific locations. Meanwhile, online marketing takes the form of a buying and selling process through intermediaries or indirectly; marketing products can be online marketing on marketplaces, e-commerce, and through online conversations (WhatsApp, Line, telephone, etc.).

Management of batik solid waste (patchwork) in Kauman Batik Village, Pekalongan City, it can be seen that of the 19 batik respondents there are 13 respondents whose solid batik waste arising from the production process is managed by convection or tailors (informal sector), 3 respondents do not know whether convection or tailors collect batik waste, 2 respondents do not manage batik waste at all, and 1 respondent manages batik waste by business actors. In this case, most of the batik business actors who are in the formal sector in Kampung Batik Kauman, Pekalongan City do not manage batik (patchwork) solid waste, but convections or tailors which are in the informal sector actually manage Batik (patchwork) solid waste.

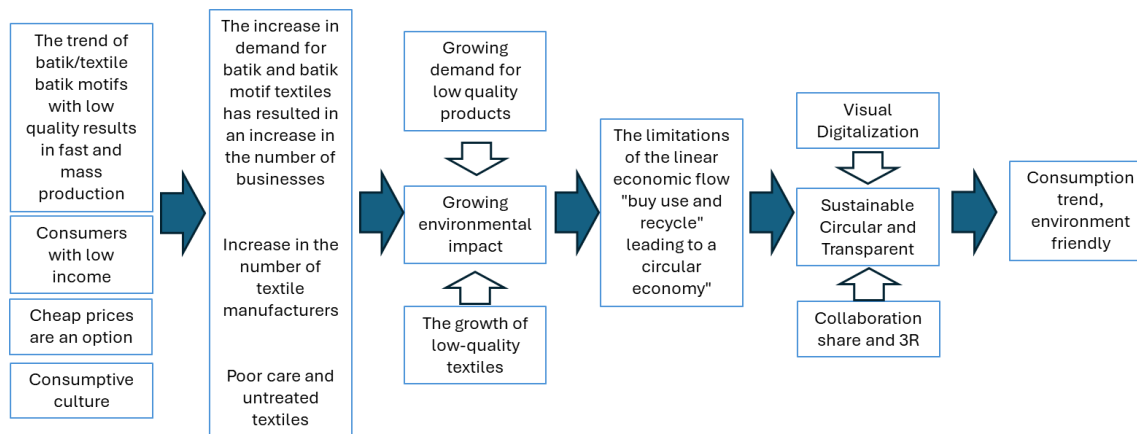


Figure 3. Development of Circular Economy Understanding and Participation in Textiles and Batik

The circular economy stage requires a consumption process, but the reality in the field is that the process of managing and utilizing Batik solid waste in the form of patchwork does not carry out the consumption stage. The reduction, reuse, repair, recycling, and return stages are carried out by convection or tailoring, which is the informal sector. In this case, the results found from the extent to which circular economy has been implemented in the management of batik waste in Kauman Batik Kampong are that circular economy has not been implemented. Instead, there has been innovation in utilizing solid batik waste as patchwork. Convections or tailors manage and use patchwork as children's negligees, bed sheets, pillowcases, bags, accessories, trouser pockets, children's

negligees, and wallets for resale so that it becomes a business idea to increase income and hone the creativity of tailors.

Third is the circular economic paradigm and participation from business actors. If we look at the spatial and sustainability of the city, the circular city paradigm is an embodiment of the principles of the circular economy, which is in line with the goals of the 2030 agenda (Paoli et al., 2024). However, implementing these principles requires significant effort in terms of planning, economic analysis, and geographic analysis. For economic and geographical analysis, batik business actors can form regions in the production process but have not yet implemented a circular economy. Meanwhile, a circular city must go beyond economic and engineering concepts (such as waste reduction) and build an organic and spatial vision encompassing various urban priorities. The involvement of business actors is insufficient because circular cities involve various stakeholders, including public administration, research institutions, the business world, and society.

CONCLUSION

Participatory involvement in the circular batik economy in Kampung Batik Kauman stakeholders is very important, emphasizing principles such as global responsibility, information transparency, open dialogue, and joint problem-solving. The participation process involving residents, representatives of groups or associations, in this case, the Kampung Batik Kauman cluster, and related governments has been carried out but has not yet targeted the concept of a circular economy. Follow up in participation planning with mapping related to sustainability and circularity because with the implementation of this concept, the sustainability of the socio-economic conditions of urban village communities and batik culture will develop well.

Actionable strategies for advancing circular economy practices in Kampung Batik Kauman, first understanding circular economy In the context of batik production, embracing circular practices can lead to sustainable growth and positive impacts on the community. Second, in local context and challenge, Kampung Batik Kauman is known for its rich cultural heritage and traditional batik craftsmanship. Challenges include water scarcity, waste generation, and economic disparities, so the strategies for community empowerment with skill development programs for artisans. Strengthen women's participation (as most batik crafters are women). For cultural preservation strategies to celebrate the cultural significance of batik and educate tourists and buyers about the heritage. Link batik production to local tourism initiatives to a circular economy.

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REFERENCES

- BKKB. (2022). Data Pelaku Usaha Batik Indonesia.
- Damayanti, M., & Latifah, L. (2017). Strategi Kota Pekalongan dalam Pengembangan Wisata Kreatif Berbasis Industri Batik. *Jurnal Pengembangan Kota*, 3(2), 100–111.
- De Kock, L., Sadan, Z., Arp, R., & Upadhyaya, P. (2020). A Circular Economy Response to Plastic Pollution: Current Policy Landscape and Consumer Perception. *South African Journal of Science*, 116(5–6), 1–2.
- DTPMTSP. (2023). Data Investasi Kota Pekalongan.
- Dyer, M., Wu, S., & Weng, M.-H. (2021). Convergence of Public Participation, Participatory Design and NLP to Co-Develop Circular Economy. *Circular Economy and Sustainability*, 1(3), 917–934. <https://doi.org/10.1007/s43615-021-00079-0>
- Franco-García, M.-L., Carpio-Aguilar, J. C., & Bressers, H. (2019). Towards Zero Waste, Circular Economy Boost: Waste to Resources. In M.-L. Franco-García, J. C. Carpio-Aguilar, & H. Bressers (Eds.), *Towards*

- Zero Waste: Circular Economy Boost, Waste to Resources (pp. 1–8). Springer International Publishing. https://doi.org/10.1007/978-3-319-92931-6_1
- Gutberlet, J., Besen, G. R., Morais, L. P., & others. (2020). Participatory Solid Waste Governance and the Role of Social and Solidarity Economy: Experiences from São Paulo, Brazil. *Detritus*, 13(13), 167–180.
- Hadi, M. I., & Rudiarto, I. (2018). The Role of Social Entrepreneurship on Kampong Development in the City of Semarang. *The Indonesian Journal of Planning and Development*, 3(2), 76–83.
- Islami, P. Y. N. (2022). Penerapan Ekonomi Sirkular Pada Pengelolaan Sampah Pesisir: Studi Kasus Pengelolaan Sampah Pulau Pasaran Bandar Lampung. *The 4th International Conference on University Community Engagement (ICON-UCE 2022)*, 4, 512–520.
- Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia. (2023). *Penanganan Sampah Indonesia*. <https://sipsn.menlhk.go.id/sipsn/#>
- Koszewska, M. (2018). Circular Economy - Challenges for the Textile and Clothing Industry. *Autex Research Journal*, 18(4), 337–347. <https://doi.org/doi:10.1515/aut-2018-0023>
- Munaro, M. R., Tavares, S. F., & Bragança, L. (2020). Towards Circular and More Sustainable Buildings: a Systematic Literature Review on the Circular Economy in the Built Environment. *Journal of Cleaner Production*, 260, 121134. <https://doi.org/https://doi.org/10.1016/j.jclepro.2020.121134>
- Nugraha, J., Nugraheni, F., & Kurniawan, I. N. (2016). Model Kapasitas Masyarakat Dalam Menghadapi Bencana Menggunakan Analisis Regresi Logistik Ordinal. *Eksakta*, 16(1), 17–26.
- Paoli, F., Pirlone, F., & Spadaro, I. (2024). A Participatory Mapping for Planning a Circular City. In A. Marucci, F. Zullo, L. Fiorini, & L. Saganeiti (Eds.), *Innovation in Urban and Regional Planning* (pp. 36–45). Springer Nature Switzerland.
- Phelps, N. A., & Wijaya, H. B. (2016). Joint Action in Action? Local Economic Development Forums and Industry Cluster Development in Central Java, Indonesia. *International Development Planning Review*, 38(4), 425–448. <https://doi.org/10.3828/idpr.2016.24>
- Phelps, N. A., & Wijaya, H. B. (2020). Growth and Growth Constraints in Craft Industry Clusters: The Batik Industries of Central Java. *Singapore Journal of Tropical Geography*, 41(2), 248–268. <https://doi.org/https://doi.org/10.1111/sjtg.12311>
- Pomponi, F., & Moncaster, A. (2017). Circular economy for the built environment: A research framework. *Journal of Cleaner Production*, 143, 710–718. <https://doi.org/https://doi.org/10.1016/j.jclepro.2016.12.055>
- Roychansyah, M. S. (2010). Kampung as a Creative Density: Fluidity of Linier Traditional Markets in High Density Urban Kampung. *Arte-Polis 3 International Conference*, 129.
- Setiawan, B. (2010). Naskah Pidato Pengukuhan Jabatan Guru Besar dalam Ilmu Perencanaan Kota Universitas Gadjah Mada: 'Kampung Kota dan kota Kampung: Tantangan Perencanaan Kota di Indonesia. 1996.
- Sukmawati, A., & Yuliasuti, N. (2016). Eksistensi Kampung Lama Melalui Kearifan Lokal di kampung Bustaman Semarang. *Tataloka*, 18(2), 108–117.
- Tamamudin, T. (2016). Perilaku Produksi Industri Batik Kota Pekalongan Menurut Etika Produksi Islam. *Jurnal Hukum Islam*, 14(2), 97–114. DOI: <https://doi.org/10.28918/jhi.v0i0.671>
- Wilson, T. (1996). *The Empowerment Manual*. London: Grower Publishing Company.
- Wijaya, H. B., & Buchori, I. (2023). The Origin of Industrial Workers and Rural in Situ Urbanization in Temanggung Regency, Indonesia. *International Journal of Urban Sciences*, 27(1), 112–128. <https://doi.org/10.1080/12265934.2022.2097119>
- Wijaya, H. B., & Buchori, I. (2022). Reclassification of Urban Growth in Rural Area, Temanggung Regency, Indonesia. *Geoplanning: Journal of Geomatics and Planning*, 9(1), 1–16. <https://doi.org/10.14710/geoplanning.9.1.1-16>
- Wijaya, M. I. H., Artiningsih, A., & Wijaya, H. B., Ariani, N.M., Priambudi, B. N. (2021). Identifikasi Pembelajaran Sosial dalam Pengembangan Batik di Kota Pekalongan. *Jurnal Litbang Kota Pekalongan*, 19(1), 12–19. <https://doi.org/10.54911/litbang.v20i.139>
- Wijaya, M. I. H., Ariani, N. M., & Priambudi, B. N. (2020). Identifikasi Peran Kewilayahan Dalam Pengembangan Produk Unggulan Batik di Kawasan Pekalongan. *Kajen Jurnal Penelitian dan Pengembangan Pembangunan*. 4(02), 112–122. <https://doi.org/10.54687/jurnalkajenv4i02.4>