

CONCEPTUAL MODEL ON CREATIVE ECONOMY DEVELOPMENT OF WATERFRONT CITIES IN INDONESIA: LESSON LEARNED FROM PALEMBANG AND SURABAYA

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This article introduces a conceptual model aimed at nurturing the creative economy within waterfront cities, spotlighting Palembang and Surabaya in Indonesia as case studies. The model seeks to uncover underlying trends that fortify creative economic endeavors in these localities, presenting them within a conceptual framework diagram. The research underscores the significance of establishing a conceptual model for optimal practices in creative economy development, specifically tailored to fortify the waterfront areas of Palembang and Surabaya. This study utilized qualitative methods in a sequential approach to assess current field conditions, develop a conceptual model, and integrate diverse data sources, including literature, focus group discussions, and in-depth interviews. The article explores the crucial contributions of various stakeholders – academia, businesses, communities, government, and media – in driving the growth of the creative economy within waterfront cities. It also emphasizes essential dimensions such as human resources, technology, geography, policy, and sustainability as pivotal factors in strengthening programs that foster the creative economy in waterfront city areas in Indonesia.

Key words: conceptual model, creative economy, waterfront city, Palembang, Surabaya.

INTRODUCTION

The current economic changes of the 21st century are deeply intertwined with technological advancements that are crucial in addressing contemporary challenges. The creative economy emerges as a sector focusing on high-value product creation, production, and distribution

through expertise and creativity. It heavily relies on human ingenuity as the primary production factor (Brouillette, 2014; Florida and Adler, 2020) and thrives on novel, unique, and innovative ideas. Backed by creative industries, this sector progresses and flourishes, emphasizing human resource-based creativity, ideas, and knowledge (Fazlagić and Skikiewicz, 2019). The concept of development in the creative economy aligns with economic development goals, aiming to enhance community life quality through resource

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utilization and social participation principles (Chollisni *et al.*, 2022). Developing the creative economy plays a strategic role in fostering sustainable changes within the economic ecosystem. Empowering creativity promotes innovative, environmentally friendly solutions, bolstering national image and cultural identity. In Indonesia, the creative economy sector has experienced rapid growth, buoyed by the National Master Plan for Creative Economy Development 2018 - 2025 aimed at driving the national economy.

The presence of waterfront cities serves as a potential economic source for the local community within a region. Palembang, as the capital city of South Sumatra Province, holds significant potential in its waterfront areas for creative economic development. With a rich historical and cultural background, strategically located along the Musi River, Palembang boasts various attractions such as Pempek Palembang, Fort Kuto Besar, Lake Ranau, and traditional Palembang music. Several waterfront areas, including the Ampera and Musi River regions, have been actively developed. Recognizing its culinary excellence, the Creative Economy Agency honored Palembang as the 2019 Creative City, particularly in the culinary subsector.

Meanwhile, Surabaya, Indonesia's second-largest metropolitan city after Jakarta, has been a trade and transportation hub since the Dutch colonial era, prominently positioned in Java's eastern region. The Kalimas River serves as a vital water transportation access point, significantly contributing to Surabaya's economic growth. The Surabaya City Government envisions transforming the Kalimas River into a thriving waterfront city and creative economy center. This development aims to enhance environmental quality while maximizing the region's potential. Collaborating with the Creative Economy Agency in 2018, the Surabaya City Government has undertaken initiatives to bolster the city's creative economy.

However, the optimal development of the creative economy in Palembang and Surabaya's waterfront areas faces challenges. This is attributed to various factors, including the absence of a comprehensive conceptual model outlining best practices, inadequate supporting facilities, and low-quality products and services. Developing a conceptual model for the creative economy in waterfront areas serves as a governance compass, fostering national economic empowerment. This model is envisioned to guide policy formulation for creative economy development in Indonesian waterfront cities, facilitating better governance practices. This conceptual model differs from other common models by linking the penta helix, the degree of relationship (3C phases) between the actors, and the development of five dimensions based on the governance and characteristics of the creative economy in waterfront city locations.

This study's outcomes aim to offer valuable insights and recommendations to local governments and stakeholders involved in advancing the creative economy within waterfront city areas. Additionally, it endeavors to contribute to the broader research and development landscape of creative economy initiatives and waterfront city development in Indonesia.

LITERATURE REVIEW

Creative economy

In recent years, there has been a significant emphasis on fostering cities with a creative economy approach (Segovia and Hervé, 2022; Sonobe *et al.*, 2022; Arcos-Pumarola *et al.*, 2023). Particularly in developing countries, these efforts stem from an abundance of cultural resources, aimed at capitalizing on these assets for economic growth (Chollisni *et al.*, 2022; Sonobe *et al.*, 2022). Studies on the creative economy's development across various nations highlight differing models (Fahmi *et al.*, 2015), with developed countries, where the concept originated, differing notably from their developing counterparts (Rodríguez-Insuasti *et al.*, 2022). Perić and Maruna (2022) highlight some of the challenges in waterfront development that require specialized regulations. The findings by Pratomo *et al.* (2021) also emphasize the impact of geographical location on the creative economy's development model. Additionally, the local community is important in developing creative tourism (Souca, 2019).

For Indonesia, as the largest country in Southeast Asia, boasting a diverse cultural heritage, there is a vital need to formulate and coordinate policies that harness the extensive potential of the country's creative economy (Jewell, 2019). President Joko Widodo's establishment of the Indonesian Creative Economy Agency (BEKRAF) in 2015 underscores Indonesia's recognition of the creative economy's pivotal role in spurring economic growth and preserving cultural diversity.

Waterfront city

The concept of a waterfront city encompasses various spatial categories including riversides, lakesides, coastal areas, and wetlands. Isra *et al.* (2020) classify the waterfront city concept into two types: based on development (conservation, redevelopment, development) or function (mixed-use, recreational, residential, working). City waterfront areas hold promising potential for creative economy development due to their unique appeal and suitability for activities like culinary arts, fashion, crafts, and tourism. Almost half of Indonesia's 516 cities and districts are surrounded by water bodies, with several local governments implementing the waterfront city concept.

In Indonesia, the focus on developing waterfront city areas has grown, and they have been recognized for their economic potential and enhanced tourism allure (Woo *et al.*, 2017; Isra *et al.*, 2020; Nandana *et al.*, 2021; Ghareeb *et al.*, 2023). These areas, often situated near beaches, rivers, or lakes, feature a variety of amenities such as recreational spaces, dining establishments, and shopping centers (Evans *et al.*, 2022). Their economic development requires a tailored approach that aligns with their resources (Zaki and Hegazy, 2023). Alongside this, there is a growing need for a creative economy development model tailored for waterfront cities, considering their distinct identities (Manteiro and Kabu, 2019; Ayu *et al.*, 2022; Üzümcüoğlu and Polay, 2022). Research findings regarding Belgrade, Serbia, highlight how a city's waterfront identity profoundly influences its urban structure (Petrović Balubdžić, 2017).

Penta helix-based model

Multi-sector cooperation involves collaboration between the government, civil society, academia, media, international organizations, research institutions, and other stakeholders to exchange perspectives, information, financial resources, and technology in finding solutions (Rosyadi *et al.*, 2020). This cooperative concept synergizes to cultivate an entrepreneurial spirit known as the penta helix (Sukarno *et al.*, 2020). Initially an evolution from the triple helix introduced by Etzkowitz and Leydesdorff (1997), the penta helix, or quintuple helix, was further developed by Carayannis and Campbell (2010). Collaboration within the penta helix framework plays a pivotal role in nurturing the creative economy, addressing challenges related to innovation and promotion to enhance competitiveness. Therefore, the penta helix approach is highly recommended to provide external input for creative economy actors, improving the quality of innovative and creative products (Rosyadi *et al.*, 2020).

The penta helix comprises five primary groups: academia, business sector, community, government, and media (A, B, C, G, M). In a program or activity, these groups collaborate through the three phases of 3C - Connect, Collaborate, and Commerce/Celebrate to achieve shared objectives (Satari and As'ad, 2018). During the 'Connect' stage, the focus is on fostering networks among the penta helix groups. 'Collaborate' emphasizes their cooperation in developing innovative ideas or initiatives, while 'Commerce/Celebrate' highlights joint efforts in marketing or project implementation, and celebrating successes collectively. This research aims to delve deeper into the penta helix model previously introduced by Satari and As'ad (2018).

The creative economy model encompasses the development of creative industries, community empowerment through training and education, and enhanced market access for local products. Putra (2017) conducted research to explore the potential of creative economic development at the Sikayan Balumuik tourist attraction, aiming to boost its allure. Effective tourism management requires paying attention to meeting the needs of tourists, local communities, and the preservation of biodiversity. Utilizing the penta helix strategy, Sutrisno and Anitasari (2019) found that the community and business entities wield the most influence as economic drivers, with the government facilitating collaboration among stakeholders. Acting as regulators, governments aim to safeguard community activities and foster regional ecosystems (Papatheochari and Coccossis, 2019).

METHODOLOGY

In this study, we pursued an approach involving sequential stages. Initially, we collected preliminary data, encompassing an overview and assessment of the existing state of the creative economy in the waterfront city areas at Palembang and Surabaya along with the pertinent data, regulations, and technical documents related to waterfront city management. Subsequently, a qualitative descriptive analysis was undertaken. This involved conducting in-depth interviews and offline focus group discussions (FGDs)

with 14 key stakeholders in Palembang and Surabaya. In Palembang, we held an FGD with 1 representative from the central government, 2 from local governments, and 1 university involved in programs and activities related to the creative economy and waterfront city initiatives. Additionally, we conducted interviews with 3 creative economy entrepreneurs who also members of communities in the culinary, crafts, and fashion subsectors. In Surabaya, a similar FGD took place, involving 1 representative from an independent non-profit institution specializing in craft arts, 2 from local governments, and 1 university engaged in activities related to the creative economy and waterfront city development. We also interviewed 3 creative economy entrepreneurs leading communities in the culinary, crafts, and fashion subsectors. Our methodology involved utilizing a set of qualitative descriptive questions specifically tailored to the development of the creative economy at the waterfront city. Following data collection, it was interpreted based on discerned patterns and themes, thereby providing valuable insights into the creative economy dynamics within waterfront city areas.

In the next stage, we centered on conceptual model development, focusing on analyzing variable interactions within the system to identify distinct patterns using the role of the penta helix, degree of relationship (3C phases) between the actors, and employed the development of five dimensions (human resources, technology, geography, policy, and sustainability). This phase culminated in the creation of a comprehensive conceptual model that encapsulates the identified patterns and strengths within creative economic activities in waterfront city areas. The final stage involved integration and decision-making support. We integrated primary and secondary data findings into the conceptual model. This model was utilized as a pivotal tool for informed decision-making in governance practices, with the ultimate goal of fostering the ideal development of the creative economy within waterfront city areas. Figure 1 shows the framework used in this study.

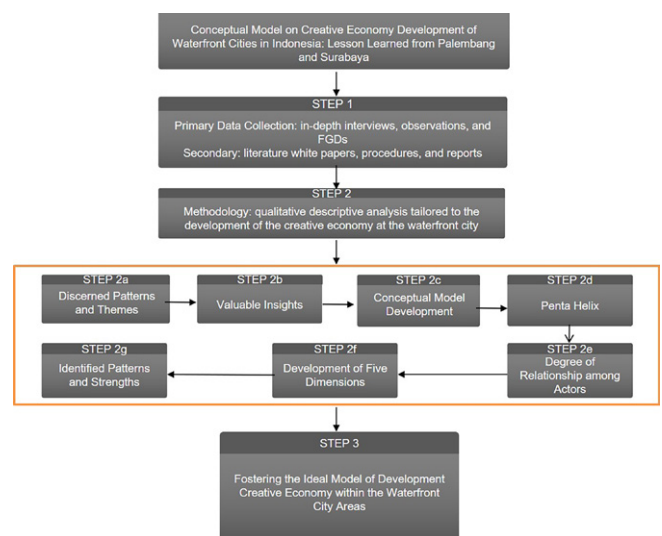


Figure 1. Conceptual framework model on the creative economy in waterfront city area (Source: Authors, 2023)

RESULTS AND DISCUSSION

Identify the role of the penta helix in Palembang and Surabaya

In the field findings, the relationships between academics (A), business (B), community (C), government (G), and media (M) are elucidated as follows:

- Academics (A) act as catalysts and creators of concepts, employing a scientific approach derived from research and innovation. They also collaborate with MSMEs/ industry in implementing creative programs.
- Business (B) serves as an enabler, transforming creative ideas into economically valuable products and offering policy input on product development. Additionally, it provides business mentoring and assesses product competitiveness.
- The Community (C) accelerates the marketing of creative economy products, fosters business entities through knowledge sharing, and strengthens cooperation, forming a creative economic community.
- The Government (G) functions as a regulator, formulating policies for creative economy development and enhancing the capacity of creative human resources. It also plans promotions and facilitates relationships between industry and investors for capital access.
- Media (M) acts as a facilitator, aiding MSMEs in business image building, fostering a favorable business climate, and supporting digital product development opportunities. It assists in digital innovation through publications, promoting products and their advantages.

The relationships between the actors are illustrated in Table 1.

Analyzing the growth of the creative economy in the Musi River in Palembang and Kalimas River in Surabaya areas, which synergistically work together, is highly intriguing and could serve as a model for driving the creative economy

in waterfront city areas. Through implementation and field research, there are discernible relationships between actors within the penta helix collaboration – academics (A), business (B), community (C), government (G), and media (M) – each playing a crucial role in fostering innovation, be it in the product, process, marketing, or organizational aspects, as well as establishing collaborations with each other. The interrelation of these sectors forms a vital linkage and synergy, contributing to the development of the creative economy across various sectors. This collaborative process, from upstream to downstream sectors, holds significant importance in achieving growth and impacting regional economic progress. Further analysis of the penta helix relationship involves describing the connectivity through business processes entwined within the 3C phases – connect, collaborate, and commerce/celebrate.

Identify the linkage of penta helix with 3C phases

In this stage, the 3C phase-based analysis aims to see the extent of linkage between the actors in both locations. In the case of Palembang, the connect phase can be interpreted as meaning that the implementation of creative economic development in the waterfront city area in the city of Palembang has been clearly described and refers to the local government program in the medium-term regional development plan, which has been carried out in the form of building relationships and networks between stakeholders within the penta helix. However, the positioning is still weak and does not even appear to be well-integrated between the actors within the penta helix. The collaborative phase can be interpreted as a relationship with creative economy actors through sustainable collaboration. This can be seen from the role of local governments in building cross-sector communications that are interrelated with planned programs. However, in its implementation, it cannot be said to have a strong relationship, where the assigned roles still appear to be running on their own and are not

Table 1. The role relationships between actors

Actor's Role	Palembang	Surabaya
Academic (A) – Business (B)	<ul style="list-style-type: none"> • Academics (A) are focusing on preparing experts and skilled personnel both in terms of skill development (vocational) and providing majors that suit needs in the creative economy. • Business (B) provides employment opportunities according to the skills (soft and hard skills) needed. Business is also a producer that commercializes innovative products as a pillar of driving a creative economy. 	<ul style="list-style-type: none"> • Academics (A) initiated the development of a creative millennial community at Kayoon. • Business (B) provides corporate social responsibility (CSR), offering support such as infrastructure assistance or training.
Academic (A) – Community (C)	<ul style="list-style-type: none"> • Academics (A) are exploring knowledge, fostering innovation to strengthen local products, provide solutions for community-related issues in creative economy development, education, and enhance community skills through necessary training. • The Community (C), comprising both civilians and community groups, identifies issues in creative economy development, actively engaging in marketing innovative products to bolster the local economy. 	<ul style="list-style-type: none"> • Academics (A) established a design center, serving as a collaborative and creative coworking space. • The Community (C), as creative millennials, actively participate, engaging in discussions, forming groups, and exchanging ideas to generate innovative concepts.

<p>Academic (A) – Government (G)</p>	<ul style="list-style-type: none"> Academics (A) offer scientific input for policies, innovative product development, and knowledge transfer, acting as catalysts in local creative economy development. Government (G) plays a strategic regulatory role by formulating policies, facilitating, and providing financial incentives to support R&D for innovative product development. 	<ul style="list-style-type: none"> Academics (A) contributed to the conceptualization of Kalimas River development and design of a tourist boat. The local government (G) initiated a revitalization and development program for Kalimas River to promote boat tourism.
<p>Academic (A) – Media (M)</p>	<ul style="list-style-type: none"> Academics (A) are creating innovations based on research and development (R&D), disseminating research results, and also publishing research findings. Media (M) publishes and disseminates spatial information through existing platforms, influencing public opinion based on current circumstances. 	<ul style="list-style-type: none"> Academics (A) have developed a branding center in Kayoon to support the creative economy. Media (M) disseminate information about the results of academic research and the facilitation provided by academics to the public.
<p>Business (B) – Community (C)</p>	<ul style="list-style-type: none"> Business (B) fosters an investment-friendly climate, innovative business prospects, and job creation, bolstering the local economy. The Community (C) supports the creative economy by engaging as business actors and participating in corporate social responsibility (CSR) initiatives to enhance skills, fostering greater involvement in the creative economy as SMEs and MSMEs. 	<ul style="list-style-type: none"> Business (B) such as state-owned enterprises/private companies provide corporate social responsibility (CSR) to support the facilitation of infrastructure to aid community activities. The Community (C) organizes engaging events and encourages community participation.
<p>Business (B) – Government (G)</p>	<ul style="list-style-type: none"> Business (B) undertakes the development of limited tourist destinations and recreational parks. Government (G) facilitates land preparation, permits, and creates an environment conducive to fostering creative economic growth. 	<ul style="list-style-type: none"> Businesses (B) leverage and utilize the location in Kalimas River for culinary activities, hosting festivals, and boat rentals. The local government (G) facilitates boat tourism activities, music performances, gift shops, and floating dining venues.
<p>Business (B) – Media (M)</p>	<ul style="list-style-type: none"> Businesses (B) foster competitiveness, contributing significantly to the growth of the creative economy through business, investments, and serving as the primary source of local business and creative economy news. Media (M) conducts promotions, enhances partnerships for product promotion, and explores opportunities for collaboration with various entities. 	<ul style="list-style-type: none"> Business (B) assists in facilitating infrastructure and supporting activities by incorporating branding and promotional elements. Media (M) cover and disseminate information about the activities of entrepreneurs and businesses involved in the development of the Kalimas River.
<p>Community (C) – Government (G)</p>	<ul style="list-style-type: none"> The Community (C) acts as the primary participant in government-led events, strengthening the creative economy with a focus on MSMEs. Government (G) is organizing community events and continually enhances the creative village area through ongoing facilitation. 	<ul style="list-style-type: none"> The Community (C) participates in diverse activities, gatherings, sports, and local economic empowerment initiatives. Government (G) is organizing and improving the surroundings of the Kalimas riverbanks and the adjacent parks, making them orderly and accessible for the community.
<p>Community (C) – Media (M)</p>	<ul style="list-style-type: none"> Community (C) actively participates in the preparation, production, and commercialization of local product. Media (M) disseminates information regarding local issues, amplifies awareness of local potential, advocates for and markets local products. 	<ul style="list-style-type: none"> The Community (C) is developing creative tourism to boost the local economy, along with its marketing initiatives. Media (M) shares community activities and news with the public.
<p>Government (G) – Media (M)</p>	<ul style="list-style-type: none"> Government (G) provides information on programs and potentials for enhancing the creative economy. Media (M) disseminates and promotes local programs and development potentials at both local and national levels. 	<ul style="list-style-type: none"> Government (G) offers information on the creative economy’s development in the Kalimas area and its related activities. Media (M) produces regular content about Kalimas and conducts media blasts.

yet well-coordinated. Thus, synergy has not been created in developing the creative economy in the waterfront city area of Palembang. The commerce phase can be interpreted through follow-up cooperation activities in implementing the marketing process and developing superior products. This is closely related to the function of downstream products until they reach markets that have sales value and are competitive. In terms of implementation and findings in the field, this has not been fully coordinated, so creative MSMEs still operate independently. The lack of programs that MSMEs can participate in means that the product marketing process has not been developed that is expected to increase economic value in the city of Palembang. The overview of the linkage results for Palembang can be seen in Figure 2.

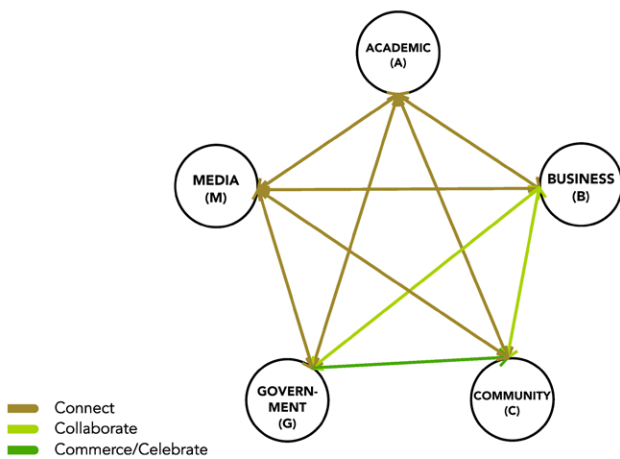


Figure 2. The linkage of the penta helix with 3C phases in Palembang (Source: Authors, 2023)

The growth of the creative economy in Palembang, especially around the Musi and Sekanak rivers, iconic areas of the city, is still ongoing. Various collaborations between parties have been carried out. Infrastructure development and the maintenance of existing infrastructure are also carried out continuously. However, the presence of these facilities is still considered inadequate for strengthening the local creative economy. From a policy perspective, the implementation of the creative economy in various sectors has also been defined. Policy development and the determination of spatial and regional planning are also carried out in both the Ulu and Ilir areas. The determination of permits and tourist locations has also been made by the local government. However, the sustainability of this policy’s implementation needs further attention, so that existing policies continue to be implemented even if there is a change in leadership.

Linkage between actors has generally been carried out well, although in certain stages it still needs to be developed. The connect phase is still dominant in current linkage. In this case, strengthening the linkage between actors is very important, due to the existence of the Musi and Sekanak rivers as strategic locations for strengthening tourist locations, which still need to be developed further. Other infrastructure support, for example the presence of the Ampera Bridge as an icon of Palembang, which is also integrated with the MRT transportation system, is still considered unable to increase local tourism competitiveness

(local wisdom). The main attraction that can be used as a commodity and has the potential to strengthen the local creative economy is the presence of creative villages that carry local products characteristic of Palembang City. This potential needs to be accommodated and developed so that the products can become better-known nationally. Existing promotions and mediation still need to be developed further to expand products awareness. The investment climate in strengthening local products and brands also needs to be considered more.

In Surabaya, the development of the creative economy specifically focuses on nurturing creative communities, particularly among millennials. Collaboration among stakeholders goes beyond physical infrastructure development to fostering an environment conducive to innovation and creativity. This is anticipated to generate more economic opportunities, including the creation of new jobs, fostering business development, and promoting economic empowerment in the region. Additionally, efforts in developing the Kalimas area concentrate on enhancing the tourism sector and public spaces. Clear initiatives aim to establish appealing tourist destinations and provide communal spaces for people to interact and engage in various activities. Each stakeholder contributes according to their role in ensuring the Kalimas River area becomes a comfortable hub for various activities. The overview of the linkage results for Surabaya can be seen in Figure 3.

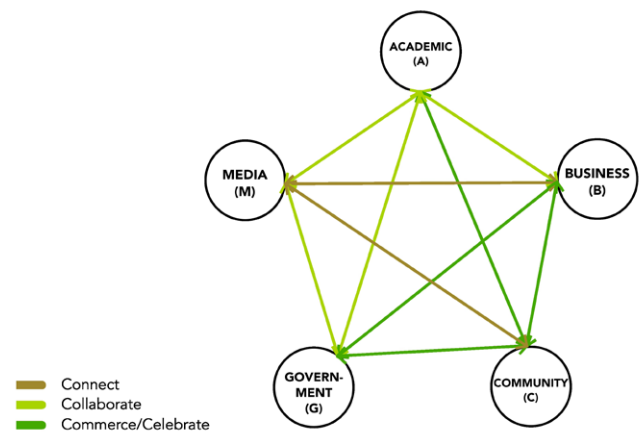


Figure 3. The linkage of the penta helix with 3C phases in Surabaya (Source: Authors, 2023)

Furthermore, the synergy between the five actors, when viewed from the perspective of collaborative innovation, represents a concept of cooperation that is anticipated to yield significant impact, benefits, and added value to each entity involved. Collaborative innovation, from this standpoint, aims to discover solutions through various synergies encompassing perspectives, expertise, experience, research, and more across various disciplines (Stojčić, 2021; Torfing, 2019). This collaboration concept strengthens a wide network and provides opportunities for all entities to contribute. It emphasizes enhancing usability as a key driver, distinguishing it from competitive collaboration. Collaborative innovation is poised to foster value creation, albeit with a variable cost burden due to cross-sectoral relationships (Vivona et al., 2023).

Empirical findings indicate that the synergy between actors in Palembang and Surabaya still shows limited connectivity, with relationships remaining one-sided. The development concept is primarily government-dominated through policy and implementation of the established roadmap. Input from academics is a crucial element in collaboration, particularly during the ideation phase. The concept of strengthening the creative economy in both regions remains largely coordinative, with limited collaborative principles (cooperative). A coordinative approach suggests that relationships are still in a low-intensity stage, with stimuli from several involved entities (Greco *et al.*, 2021). However, Palembang exhibits a different paradigm compared to Surabaya, primarily due to the reference to the river's function in waterfront city development. Achieving collaboration in waterfront city development and the strengthening of the creative economy in these regions requires active involvement from various entities. Additionally, factors such as demographics, culture, education (human resources), technology, policies, economic contributions, innovation, and other intangible variables affecting inclusive sustainability play significant roles (Üzümçüoğlu and Polay, 2022).

In Satari and As'ad's (2018) proposed model, this concept of relationships is differentiated based on the level of collaboration by each entity. Field findings suggest that collaboration in the case of Surabaya is slightly stronger than in Palembang. Surabaya exhibits a higher average collaboration rate in phases 2 and 3 compared to Palembang. However, this level of collaboration is inadequate to serve as a basis for developing strategies for the creative economy in both waterfront city areas. Cultural differences, limitations in human resources, limited utilization of technology, geographical conditions, and policies supporting inclusivity and sustainability in both areas vary. A comprehensive analysis of these five elements needs to be developed as a fundamental strategy for strengthening collaboration among existing entities in both regions. In this context, the focus is on waterfront cities where rivers serve as the primary source of city development.

Fundamental dimension of developing a waterfront city

Relevant aspects to consider in waterfront development include positioning and location, accessibility, and the provision of spaces and facilities conducive to the prolonged human enjoyment of urban rivers, whether directly or indirectly. Without these fundamental dimensions, integrated riverfront activities with urban community life cannot be effectively generated (Latip *et al.*, 2012). Hence, aspects such as human resources, technology, and sustainable policy are highly strategic functional dimensions.

This research identifies five fundamental dimensions crucial in shaping and advancing waterfront cities, namely: 1) Human Resources (Üzümçüoğlu and Polay, 2022; Korkut and Nalbantoğlu, 2023), 2) Technology (Üzümçüoğlu and Polay, 2022), 3) Geography (Latip *et al.*, 2012), 4) Policy (Perić and Maruna, 2022), and 5) Sustainability (Durán Vian *et al.*, 2021; Üzümçüoğlu and Polay, 2022).

Human resources dimension: This dimension involves enhancing the quality of human resources, particularly in community engagement through SMEs and MSMEs. The creative economy, as a concept in the new economic era, accentuates information and creativity, relying on human resources' ideas and knowledge as primary production factors. This dimension also intertwines with the region's cultural support for sustainable development (Borre *et al.*, 2023). The present challenge with human resources is the limited involvement of skilled individuals in the waterfront city areas. Despite numerous efforts, the scope of control remains extensive, and empowerment programs are not yet optimized. In the Palembang waterfront area, gradual shifts in mindset aim to reduce crime rates and boost employment opportunities. Similarly in the Surabaya waterfront area, enhancing collaboration and skills remains pivotal for creative economy stakeholders (Widiastuti *et al.*, 2017).

Technology dimension: In the creative era, a product or service's economic value no longer hinges solely on raw materials or production systems, but increasingly on creativity and innovation via advanced technological developments. Industries must compete based on innovation, creativity, and imagination rather than solely on price or product quality (Battistella *et al.*, 2023). The role of technology in Palembang and Surabaya is still perceived as inadequate in supporting planned programs by the local government and stakeholders. Despite the product's aesthetic appeal, technology's potential as an effective promotional tool for existing products remains underutilized.

Geography dimension: In designing waterfront areas, two essential aspects underlie decisions: geographical factors and the urban context (Wrenn *et al.*, 1983; Torre, 1989). Geographical factors, encompassing water conditions, land conditions, and the climate, influence the utilization of the area. Findings indicate the Kalimas River in Surabaya holds more potential than the Musi River in Palembang due to the Musi's unorganized river flows. Spatial planning needs refinement and alignment with economic potential. Geography also offers opportunities for raw material exploration in creative economic development, acting as an iconic branding feature.

Policy dimension: Regulations are fundamental in waterfront city development. They not only drive development but also safeguard community activities and foster a conducive ecosystem (Papatheochari and Coccossis, 2019). Policies span normative and practical aspects, from spatial planning to infrastructure development and investment facilitation. The local context, affordability, and livability should underscore policy formulation (Kashkoui *et al.*, 2018). The government must act as an initiator, facilitator, and mediator in waterfront city development. Palembang has established regulations, such as Mayor Regulation No. 6 of 2006 designating Palembang as a River Tourism City, and Regional Regulation No. 15 of 2012 focusing on regional spatial planning. Similarly, Surabaya's waterfront city development master plan for 2019-2024 emphasizes the Kalimas River area.

Sustainability dimension: Sustainability in the creative industry encompasses environmental, social, and economic considerations, emphasizing ethical practices, social impact, and positive values in creative works. Regional cultural adaptation is crucial for sustainable creative industry growth (Moore, 2014). In Palembang and Surabaya, sustainability issues in waterfront cities need to address economic, cultural, and geographical characteristics. However, prioritization and collaborative strategies involving all stakeholders are lacking, and the sustainability of existing programs may change with shifting leadership orientations.

Conceptualizing model

The concept of a creative economy linkage model in river-based waterfront city areas is intended to be a reference in analyzing the readiness of the creative economy based on connectivity and important aspects (in this case the Musi River in Palembang and the Kalimas River in Surabaya). The development of this model is based on theoretical discussion and elaboration based on field findings. A theoretical review was carried out of the general concept of creative economic development, referring to the subsector of the creative economy, which is viewed from the five main actor elements, namely academics, business, community, government, and media (A-B-C-G-M), often called the penta helix which is connected to 3C phases (connect, collaborate, and commerce/celebrate). In fact-finding, the penta helix model is not enough to describe the conditions of the development of the creative economy in the waterfront city area. Thus, in this conceptual model, an elaboration is proposed with five fundamental dimensions as previously explained. Those dimensions are considered and become strengthening factors in the development of a sustainable creative economy in a waterfront city area. Figure 4 shows a conceptual model that has been developed.

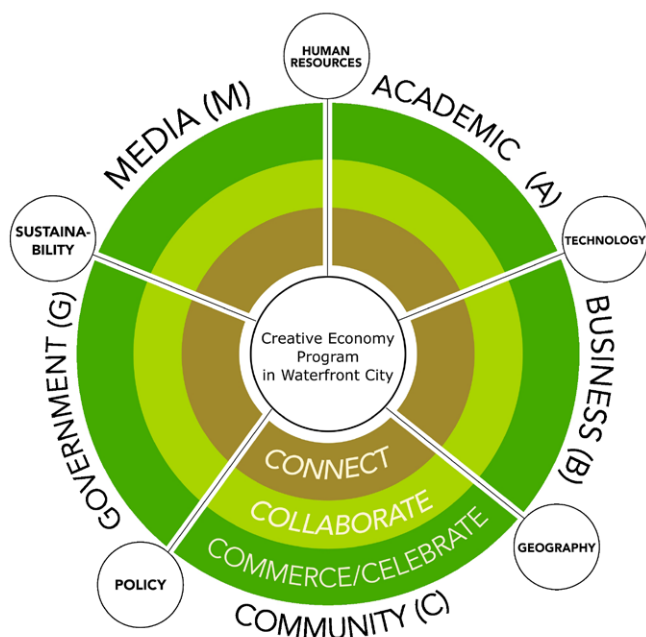


Figure 4. Conceptual Model of Linkage in Creative Economy at Waterfront City
(Source: Authors, 2023)

The model starts with 1) analyzing the relationships among penta helix actors (A-B-C-G-M); 2) identifying the linkages between penta helix actors and the 3C phases (connect – collaborate – commerce/celebrate), and 3) analyzing five dimensions (human resources, technology, geography, policy, and sustainability) to strengthen creative economy programs in the waterfront city area and enhance overall economic growth. In the previous sections, the analysis of roles between the actors and their linkage with the 3C phases has been discussed. The five-dimensional analysis aimed at bolstering synergy between the actors in various phases to strengthen the creative economy in the Musi and Kalimas river areas through various programs is described below.

Human resources dimension:

- Provision and management of human resources to maximize planned creative economic activities.
- Offering training and coaching to enhance skills and competitiveness among creative economy actors.
- Shifting mindsets to raise awareness for locally based creative economic development.
- Prioritizing resident empowerment, since they are key participants in the creative economy.
- Reinforcing the business resilience of creative economy actors through skill regeneration.
- Increasing job opportunities within the creative economy sector.

Technology dimension:

- Utilizing the latest technology for innovative product development.
- Collaborating in technological use with various stakeholders.
- Employing digital technology for promoting and marketing creative products.
- Forecasting future technological advancements.

Geography dimension:

- Tailoring creative economy programs according to the city's geographical conditions.
- Expanding investment opportunities by developing strategic creative economic zones.
- Utilizing geographical features as icons for creative economic development.
- Identifying Intellectual Property Rights as geographical identities for creative economy actors.
- Capitalizing on geographical and historical aspects to foster the creative industry.

Policy dimension:

- Establishing bidirectional communication (top-down and bottom-up).
- Strengthening synergy among local government bodies (collaborative government).
- Spatial planning policies for waterfront city areas.
- Formulating superior regions based on regional creative characteristics to drive the community's economy.

- Providing support in facilities, infrastructure, incentives, and licensing for creative economy actors.
- Ensuring consistency in creative economy program policies.
- Establishing collaboration schemes for creative economy actors with various entities.

Sustainability dimension:

- Maintaining infrastructure that supports the creative economy.
- Mediating, promoting, and reinforcing branding related to ongoing creative economy development (e.g., regular events).
- Ensuring availability of essential materials for creative economy products.
- Enhancing innovation and competitiveness for sustainable activities.

These programs aim to foster sustainable growth within the creative economy. Policies emphasizing two-way communication, spatial planning, infrastructure support, and policy consistency are vital in fostering sectoral synergy and maximizing regional potential for innovation. Furthermore, dimensions such as sustainability, technology utilization, geographical adaptation, and human resource empowerment serve as focal points in enhancing innovation, fostering the competitiveness of creative products, and broadening employment opportunities within the creative economy sector.

CONCLUSION

As an initial objective, this study presented an analysis of creative economy development in the waterfront city regions of Palembang and Surabaya in Indonesia. It assumed a conceptual model to identify patterns that strengthen creative economic activities and facilitate decision-making for ideal creative economy development in these areas. In addition, this research also highlighted the involvement of various parties in fostering creative economy growth in riverside cities, including academia, business, the community, government, and the media. The penta helix framework establishes key roles and relationships. The analysis reveals varying degrees of linkage across the connect, collaborate, and commerce/celebrate phases.

The study emphasizes the need for a conceptual model. In enhancing these efforts, five fundamental dimensions are considered: human resources, emphasizing skill development and mindset change; technology, promoting innovation and digital utilization; geographical considerations for strategic development; policy, emphasizing consistency and collaborative governance; and sustainability, ensuring ongoing support for infrastructure and product development. The dimensional analysis conducted in the discussion section of the conceptual model entails several programs that could also be recommended to the local government and associated stakeholders, considering their capacity and ability to establish relationships between the actors.

There is a need to strengthen collaboration between the stakeholders within the penta helix framework. Efforts should

focus on integrating actors more effectively throughout the phases of connect, collaborate, and commerce/celebrate. This can be achieved through coordinated efforts and communication channels that facilitate synergistic relationships. The local government needs to continue supporting the growth of the creative economy through supportive policies, including the development of adequate physical and digital infrastructure, as well as the provision of fiscal incentives to support innovative initiatives in the creative industry. Collaboration with academics, communities, and businesses aimed at enhancing the technical and soft skills necessary to improve the quality and involvement of human resources, particularly through community engagement with micro, small, and medium enterprises, is essential. Closer collaboration between media and other stakeholders is needed to ensure that stories about the creative economy and local achievements are heard more widely.

Policy recommendations based on fundamental dimensions include: strengthening the workforce capacity and skill development for maximizing planned creative economic activities; utilizing cutting-edge technology for innovative product development and digital marketing; tailoring creative economy programs to fit geographical conditions and leveraging geographic features for economic development; establishing bidirectional communication, strengthening collaboration between local government bodies, and formulating consistent policies to support creative economy development; and maintaining supportive infrastructure, promoting branding initiatives, ensuring resource availability, and fostering innovation for sustainable creative economic activities. The conceptual model can be adopted by other cities with similar natural resources. However, it is important to have proper measurement and evaluation mechanisms to assess the effectiveness of penta helix cooperation and its impact on the growth of the creative economy, helping to determine areas where collaborative efforts need to be enhanced or redirected.

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REFERENCES

- Arcos-Pumarola, J., Paquin, A. G., Sitges, M. H. (2023). The use of intangible heritage and creative industries as a tourism asset in the UNESCO creative cities network, *Heliyon*, Vol. 9, No. 1, 13106. <https://doi.org/10.1016/j.heliyon.2023.e13106>
- Ayu, A. D., Arifin, M., Wunas, S. (2022). Strategy for Settlement Area with Eco-Waterfront Approach in Lakkang Island, Makassar City, *Journal of Asian Multicultural Research for Social Sciences Study*, Vol. 3, No. 3, pp. 81–98. <https://doi.org/10.47616/JAMRSSH.V3I3.306>
- Battistella, C., Ferraro, G., Pessot, E. (2023). Technology transfer services impacts on open innovation capabilities of SMEs, *Technological Forecasting and Social Change*, No. 196, 122875. <https://doi.org/10.1016/j.TECHFORE.2023.122875>
- Borre, J. R., Romero, G. C., Gutiérrez, J. M., Ramírez, J. (2023). Discussion of the aspects of the cultural and creative industries that impact on sustainable development: a systematic review, *Procedia Computer Science*, No. 224, pp. 532–537. <https://doi.org/10.1016/j.PROCS.2023.09.077>
- Brouillette, S. (2014). *Literature and the Creative Economy*. Stanford: Stanford University Press.
- Carayannis, E. G., Campbell, D. F. J. (2010). Triple Helix, Quadruple Helix and Quintuple Helix and How Do Knowledge, Innovation and the Environment Relate To Each Other?: A Proposed Framework for a Trans-disciplinary Analysis of Sustainable Development and Social Ecology, *International Journal of Social Ecology and Sustainable Development*, Vol. 1, No. 1, pp. 41–69. <https://EconPapers.repec.org/RePEc:igg:jsesd0:v:1:y:2010:i:1:p:41-69>
- Chollisni, A., Syahrani, S., Dewi, S., Utama, A. S., Anas, M. (2022). The concept of creative economy development-strengthening post COVID-19 pandemic in Indonesia, *Linguistics and Culture Review*, Vol. 6, No. S1, pp. 413–426. <https://doi.org/10.21744/LINGCURE.V6NS1.2065>
- Durán Vian, F., Pons Izquierdo, J. J., Serrano Martínez, M. (2021). River-city recreational interaction: A classification of urban riverfront parks and walks, *Urban Forestry & Urban Greening*, Vol. 59, 127042. <https://doi.org/10.1016/j.UFUG.2021.127042>
- Etzkowitz, H., Leydesdorff, L. (1997). *Universities and the Global Knowledge Economy: A Triple Helix of University-Industry Relations* (June 16, 1997). Preprint version of: Etzkowitz, H., Leydesdorff, L. (1997). *Universities and the Global Knowledge Economy: A Triple Helix of University-Industry-Government Relations*. London: Pinter. [archival reprint]. <https://ssrn.com/abstract=3404823>
- Evans, C., Harris, M. S., Taufen, A., Livesley, S. J., Crommelin, L. (2022). What does it mean for a transitioning urban waterfront to “work” from a sustainability perspective?, *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*. <https://doi.org/10.1080/17549175.2022.2142648>
- Fahmi, F. Z., McCann, P., Koster, S. (2015). Creative economy policy in developing countries: The case of Indonesia, *Urban Studies*, Vol. 54, No. 6, pp. 1367–1384. <https://doi.org/10.1177/0042098015620529>
- Fazlagić, J., Skikiewicz, R. (2019). Measuring sustainable development - the creative economy perspective, *International Journal of Sustainable Development & World Ecology*, Vol. 26, No. 7, pp. 635–645. <https://doi.org/10.1080/13504509.2019.1651418>
- Florida, R., Adler, P. (2020). Creative Class and the Creative Economy. In S. Pritzker, M. Runco (Eds.), *Encyclopedia of Creativity* (Third Edition). Amsterdam: Academic Press, pp. 222–225. <https://doi.org/10.1016/B978-0-12-809324-5.23766-8>
- Ghareeb, M., Salama, R., ElSherbini, S. (2023). Impact of the sustainable waterfront proposed development of Bani-Suif corniche on the hydraulics of the Nile River, *Ain Shams Engineering Journal*, Vol. 14, No. 1, 101845. <https://doi.org/10.1016/j.ASEJ.2022.101845>
- Greco, A., Eikelenboom, M., Long, T. B. (2021). Innovating for sustainability through collaborative innovation contests, *Journal of Cleaner Production*, Vol. 311, 127628. <https://doi.org/10.1016/j.JCLEPRO.2021.127628>
- Isra, M. Y., Zubair, H., Nursyamsi, I. (2020). The development of Water Front City area as natural disaster mitigation in Majene Regency. *IOP Conference Series: Earth and Environmental Science*. IOP Publishing Ltd., pp. 1–7. <https://doi.org/10.1088/1755-1315/575/1/012173>
- Jewell, C. (2019). *Leveraging Indonesia's creative economy*. WIPO [Online]. https://www.wipo.int/wipo_magazine/en/2019/05/article_0003.html [Accessed: 20 May 2024].
- Kashkouli, A. B., Zarabi, A., Mousavi, M. N. (2018). The role of creative economy in the realization of a creative city: A case study of the city of Meybod in Yazd province, Iran, *Geographia Polonica*, Vol. 91, No. 3, pp. 335–351. <https://doi.org/10.7163/GPOL.0124>
- Korkut, C., Nalbantoğlu, O. (2023). Adaptability of everyday planning in urban design practices: self-organization and spontaneous action analysis of Galataport, Istanbul, *Computational Urban Science*, Vol. 3, No. 32. <https://doi.org/10.1007/S43762-023-00108-8>
- Latip, N. S. A., Shamsudin, S., Liew, M. S. (2012). Functional Dimension at ‘Kuala Lumpur Waterfront’, In *Procedia - Social and Behavioral Sciences*, Vol. 49, pp. 147–155. <https://doi.org/10.1016/j.SBSPRO.2012.07.013>
- Manteiro, M. C. B., Kabu, E. (2019). Model of creative economic development for micro, small and medium-sized culinary industries in Kupang City Indonesia, *International Journal of Social Sciences and Humanities*, Vol. 3, No. 1, pp. 143–152. <https://doi.org/10.29332/IJSSH.V3N1.275>
- Moore, I. (2014). Cultural and Creative Industries Concept – A Historical Perspective, *Procedia - Social and Behavioral Sciences*, Vol. 110, pp. 738–746. <https://doi.org/10.1016/j.SBSPRO.2013.12.918>
- Nandana, P., Iqbal, M., Pratama, H. F. (2021). Development of Waterfront City as Destination Product in the Musi River Area, Palembang City. In *Proceedings of the Palembang Tourism Forum 2021 (PTF 2021)*, pp. 164–169. <https://doi.org/10.2991/AEBMR.K.211223.022>
- Papatheochari, T., Coccossis, H. (2019). Development of a waterfront regeneration tool to support local decision making in the context of integrated coastal zone management, *Ocean & Coastal Management*, Vol. 169, pp. 284–295. <https://doi.org/10.1016/j.OCECOAMAN.2018.12.013>
- Perić, A., Maruna, M. (2022). Post-socialist discourse of urban megaproject development: From City on the Water to Belgrade Waterfront, *Cities*, Vol. 130, 103876. <https://doi.org/10.1016/j.CITIES.2022.103876>
- Petrović Balubdžić, M. (2017). Creating the Belgrade waterfront identity through a prism of architecture and urban planning

- competitions, *Spatium International Review*, No. 37, pp. 74–81. <https://doi.org/10.2298/SPAT1737074P>
- Pratomo, S., Ashar, K., Satria, D. (2021). Role of Creative Economy on Local Economic Development, *Journal of Indonesian Applied Economics*, Vol. 9, No. 2, pp. 27–35. <https://doi.org/10.21776/UB.JIAE.009.02.4>
- Putra, T. (2017). Ekonomi Kreatif dan Daya Tarik Objek Wisata (in Indonesian), *Jurnal Pendidikan dan Keluarga*, Vol. 9, No. 1, pp. 36–44. <https://doi.org/10.24036/JPK/VOL9-ISS1/43>
- Rodríguez-Insusti, H., Montalván-Burbano, N., Suárez-Rodríguez, O., Yonfá-Medranda, M., Parrales-Guerrero, K. (2022). Creative Economy: A Worldwide Research in Business, Management and Accounting, *Sustainability*, Vol. 14, No. 23. 16010. <https://doi.org/10.3390/SU142316010>
- Rosyadi, S., Kusuma, A. S., Fitriah, E., Haryanto, A., Adawiyah, W. (2020). The Multi-Stakeholder's Role in an Integrated Mentoring Model for SMEs in the Creative Economy Sector, *SAGE Open*, Vol. 10, No. 4. <https://doi.org/10.1177/2158244020963604>
- Satari, F. C., As'ad, N. (2018). Strategy of Entrepreneurship & Creative Economy Development through District Mapping in Bandung City, *Journal of Visual Art and Design*, Vol. 10, No. 2, pp. 93–100. <https://doi.org/10.5614/J.VAD.2018.10.2.1>
- Segovia, C., Hervé, J. (2022). The creative city approach: origins, construction and prospects in a scenario of transition, *City, Territory and Architecture*, Vol. 9, No. 29. <https://doi.org/10.1186/S40410-022-00178-X>
- Sonobe, T., Buchoud, N. J. A., Tiang, J. T. G., Baek, S., Hendriyetty, N. S., Sioson, E. P. (2022). *Creative Economy 2030 Imagining and Delivering a Robust, Creative, Inclusive, and Sustainable Recovery*. Japan: Asian Development Bank Institute.
- Souca, M. L. (2019). Revitalizing Rural Tourism through Creative Tourism: the Role and Importance of the Local Community, *Marketing – from Information to Decision Journal*, Vol. 2, No. 2, pp. 43–50. <https://ideas.repec.org/a/vrs/mfidx/v2y2019i2p43-50n4.html> [Accessed: 24 Jun 2024].
- Stojčić, N. (2021). Collaborative innovation in emerging innovation systems: Evidence from Central and Eastern Europe, *Journal of Technology Transfer*, Vol. 46, No. 2, No. 531–562. <https://doi.org/10.1007/S10961-020-09792-8>
- Sukarno, G., Rasyidah, R., Saadah, K. (2020). Improve Creative Industry Competitiveness Penta Helix and Human Capital in Digital Era. In *Proceedings of the 2nd International Media Conference 2019*, pp. 157–170. <https://doi.org/10.2991/ASSEHR.K.200325.014>
- Sutrisno, S., Anitasari, H. (2019). Strategi Penguatan Ekonomi Kreatif Dengan Identifikasi Penta Helix Di Kabupaten Bojonegoro (in Indonesian), *Jurnal Ilmiah Administrasi Bisnis Dan Inovasi*, Vol. 3, No. 2, pp. 89–108. <https://doi.org/10.25139/JALV3I2.1986>
- Torring, J. (2019). Collaborative innovation in the public sector: the argument, *Public Management Review*, Vol. 21, No. 1, pp. 1–11. <https://doi.org/10.1080/14719037.2018.1430248>
- Torre, L. A. (1989). *Waterfront Development*. Netherlands: Van Nostrand Reinhold.
- Üzümcüoğlu, D., Polay, M. (2022). Urban Waterfront Development, through the Lens of the Kyrenia Waterfront Case Study, *Sustainability*, Vol. 14, No. 15, 9469. <https://doi.org/10.3390/SU14159469>
- Vivona, R., Demircioglu, M. A., Audretsch, D. B. (2023). The costs of collaborative innovation, *Journal of Technology Transfer*, Vol. 48, No. 3, pp. 873–899. <https://doi.org/10.1007/S10961-022-09933-1>
- Widiastuti, T., Fanani, S., Mawardi, I. (2017). Coastal Moslem's Creative Economy Development Model: Case Study in Kenjeran Surabaya, *Jurnal Ekonomi Dan Bisnis Islam*, Vol. 3, No. 2, pp. 122–138. <https://doi.org/10.20473/JEBIS.V3I2.6722>
- Woo, S. W., Omran, A., Lee, C. L., Hanafi, M. H. (2017). The impacts of the waterfront development in Iskandar Malaysia, *Environment, Development and Sustainability*, Vol. 19, No. 4, pp. 1293–1306. <https://doi.org/10.1007/S10668-016-9798-3>
- Wrenn, D. M., Casazza, J. A., Smart, J. E. (1983). *Urban Waterfront Development*. Washington: The Urban Land Institute.
- Zaki, S. K., Hegazy, I. R. (2023). Investigating the challenges and opportunities for sustainable waterfront development in Jeddah City, *International Journal of Low-Carbon Technologies*, Vol. 18, pp. 809–819. <https://doi.org/10.1093/IJLCT/CTAD062>