

A sustainable creative economy development model using a penta-helix approach based on local wisdom in Magelang City, Indonesia

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Keywords: creative economy; local wisdom, sustainable; Magelang City.

Abstract. *The purpose of this research is to develop a strategy for developing a sustainable creative economy with a penta-helix approach based on local*



wisdom in Magelang City. Magelang City is one of the areas in Central Java Province with enormous potential for developing a creative economy and local wisdom. There are 3 leading creative economy sub-sectors in Magelang City, namely culinary, craft, and performing arts. Various research and studies have also been carried out, but have not been able to formulate a creative economy development strategy that is solid, integrated, inclusive, comprehensive, sustainable, and based on local wisdom. The analytical methods used in this research are Interpretative Structural Modeling (ISM) and Matrices of Alliances and Conflicts: Tactics, Objectives, and Recommendations (MACTOR). The result of the research formulates that there are 10 (ten) strategies for developing the creative economy, namely increasing business legality, skills and abilities of entrepreneurs, sustainable business management, production capacity, Appropriate Technology (TTG), infrastructure improvements, increased access to capital, product quality, business branding, and promotional and marketing innovations. Besides that, the development of the creative economy also requires synergy, collaboration, continuous and sustainable cooperation between stakeholders or often referred to as the Penta-helix, which consists of Academics, Business, Community, Government, and Media (ABCGM).

1. Introduction

The creative economy is one sector that is expected to become a new force for the sustainable national economy and emphasizes adding value to goods through human thought and creativity. Currently, the creative economy is a catalyst for Indonesia's economic growth amidst a slowdown in global economic growth. This sector is able to contribute 7.28% of Indonesia's total GDP. The largest contributions come from the culinary sub-sector 41.475%, fashion 17.68%, and craft 14.99%. The creative economy sector in Indonesia in 2019 was able to absorb a workforce of 19.24 million or contribute around 15.21% of the total workers in Indonesia. One of the provinces in Indonesia that excels in the creative economy sector is Central Java, with the leading three main sub-sectors covering music 22.98%, culinary 15.11%, and performing arts 12.32%. If it is

based on cities/regencies in Central Java, the largest distribution of creative economy actors is in Magelang City with absorption of 13.98% (Central Bureau of Statistics, 2022).

The creative industry itself is currently facing many short-term and long-term challenges due to the pandemic such as redundancies, bankruptcy, and event cancellations (OECD 2020). Different countries have introduced different strategies, both public and private (for example, job retention schemes, grants, and funding) to capitalize on the long-term economic and social impact of the COVID-19 pandemic (Dümcke, 2021; Joffe, 2020; Betzler et al, 2020). Existing conceptual as well as empirical contributions have established that regional social and economic arrangements are very important for creative industries and that place-based characteristics have created the conditions that enhance creativity as well as entrepreneurial behavior (Khlystova *et al.*, 2022; Anantrasirichai & Bull, 2021; Chang *et al.*, 2021; Clare, 2013; Florida, 2002; Lee *et al.*, 2004). Creative industries usually form geographic clusters. Often this occurs in large cities, where they can benefit from large markets and various human activities. Then the urbanization economy helps the creative industries develop through the creation of new knowledge and cross-fertilization between different specialties (Brydges & Pugh, 2021; Wahjudewanti *et al.*, 2021; Feldman & Kogler, 2010; Potts, 2007; Rosenthal & Strange, 2004).

In addition to being based on geographical clusters and regional-based policies, the development of the creative economy also requires collaboration from various parties. Creative economy planning has been started since Presidential Instruction No. 6 of 2009. The development of the creative economy in this regulation is addressed to all Governors, Regents/Mayors to carry out creative economic development with the support of the Regional Revenue and Expenditure Budget. Then proceed with the development plan of the creative industry sub-sector, looking in more detail at each creative industry sub-sector which includes: advertising; architecture; art goods market; craft; design; fashion; videos, films & photography, interactive games; music; performing Arts; publishing & printing; computer & software services; television and radio; research and development; culinary. As time has passed until 2021, there have been many legal products that have further strengthened the existence of the creative economy, namely the issuance of Presidential Regulation Number 142 of 2018 concerning the National Creative Economy Development Master Plan 2018-2025, Presidential Regulation Number 97 of 2019 concerning the Tourism and Creative Economy Agency, then the most recent is Law No. 24 of 2019 concerning the Creative Economy.

Research related to the development of the creative economy has been carried out but still results in varying results and development concepts. The development of the creative economy can be done by increasing access to capital and the welfare of actors (Chollisni *et al.*, 2022; Swastuti & Pudjiarti 2021) improving supporting infrastructure (Popelo *et al.*, 2021; Nurmillah *et al.*, 2016) developing institutions and organizations (Agustina *et al.*, 2020; Bimantara *et al.*, 2020; Hastuti *et al.*, 2018) as well as promotion and marketing development (Wulandari *et al.*, 2022; Shofa & Nugroho, 2018). Several previous studies related to the development of the creative economy still give rise to various concepts that provide gaps for developing other creative economy development concepts.

Efforts to develop the creative economy require collaboration between parties. One of the cooperation models between several parties can be done through the penta-helix approach. Collaboration in the penta-helix concept is a collaborative activity between fields such as Academic, Business, Community, Government, and Media or known as ABCGM (Forss *et al.*, 2021; Sundari *et al.*, 2021; Yunas *et al.*, 2021). The Penta-helix cooperation model aims to optimize the roles of Academics, Business, Community, Government, and Media elements as drivers of social change that can provide benefits in the development of creative industries, in this context in Magelang City. The Penta-helix project in the development of the creative economy aims to empower local and regional authorities to find innovative and cost-effective approaches to develop, finance, and implement sustainable development.

Sustainable development is a general concept that usually includes achieving global goals such as freedom from poverty, good health and well-being, quality education, reduced inequality, climate action, etc. peace and cooperation, encouraging better policies for a better life.

Today, with clear evidence that the global economy is approaching several ecological and transformative tipping points, it is important to seek new visions of alternative economic futures for the global economy, while recognizing their limitations. Traditional theories of economic development. This vision can be expressed by using the term creative economy in its analysis. The creative economy can be defined as knowledge-based economic activities that are based on the interaction between human creativity, ideas, intellectual discoveries and technology. There are often reference descriptions that include advertising, development, software, electronic publishing (Wiktor, 2020).

In this special edition, a broad definition of the creative economy is used, covering all knowledge, skills, abilities, life circumstances (happiness, security,

etc.), characteristics and attitudes of human life that create economic activities based on intellectual property rights and a proper code of ethics and motivation. Therefore, the creative economy is an alternative economic world for the future economy. The definition of creative economy can refer to a number of economic sectors and activities such as business, education, health, culture and finance as well as all types of economic activities resulting from research and development (Schulz et al., 2021).

This concept is different from an economy based on physical capital investment and is far from the simple concept of a traditional knowledge economy because it requires intellectual property rights and rules for applying appropriate treatment as its basic characteristics.

The creative economy is not only associated with the creation of added value at the economic level, but also the creation of added value at the social, cultural and environmental levels. The creative economy is a form of effort to pursue sustainable development through creativity, where sustainable development is a competitive economic environment and has renewable resource reserves that have great potential to become one of the main driving sectors in achieving an independent and advanced economy (Awan et al., 2019).

Magelang City as one of the cities in Central Java has creative economic potential that highly needs to be developed. The development of the creative economy sector can be a driving force for realizing the vision of Magelang City as a service city, as well as a tourism amenity supporting capacity. The City of a thousand flowers has potential in the culinary, craft, and performing arts sub-sectors. The three sub-sectors have mutually supportive relationships, so they can be developed simultaneously. The culinary sub-sector has a longer historical bond when compared to other sub-sectors such as crafts and performing arts, especially when it is associated with the existence of Gethuk, which is a typical traditional food of Magelang City. Meanwhile, the existence of the craft sub-sector is still relatively new, even though it has the potential to absorb labor and a sizeable turnover. In the performing arts sub-sector, although it has a long historical value, it is still treated as a form of non-commercial business or activity. The performing arts sub-sector is preserved as the moral responsibility of actors towards tradition and dependence on activities facilitated by the city government.

The development of a creative economy based on local wisdom is important. This can be explained that the development of a creative economy that reflects the local wisdom of a region will have advantages or uniqueness that other regions do not have. Apart from that, the urgency of developing a creative

economy based on local wisdom can encourage the conservation of surrounding natural wealth, both environmental and social wealth.

To build a conceptual framework for examining the characteristics of the creative economy in Magelang City, it is necessary to pay attention to several important aspects including the availability of data, mapping of potential areas, supporting actors, and statistical information, which form the basis for making policies and decisions, both for the government and for creative economy actors. In line with these problems, the purpose of this study is to develop a Sustainable Creative Economy Development Strategy with a Penta-helix Approach Based on Local Wisdom in Magelang City.

2. Research methods

This study used two types of data sources, namely primary and secondary data. Primary data are data directly collected by researchers (or officers) from the first source. The primary data sources in this study are the data on the potential problems of the creative economy in Magelang City and the data on the formulation of a sustainable creative economy development strategy obtained from the key persons. Meanwhile, secondary data are data that have been collected for purposes other than solving the problem at hand. The data can be found quickly. In this study, the sources of secondary data were publications, literature, articles, journals, and sites on the internet related to the research conducted.

The population in this study is all creative industries in Magelang city, so the population size can be projected using MSME data, which totals 8,663 units. However, the MSME actors who will be used as samples in this research are MSME actors who are already included in the category of creative economy actors, namely MSME actors who have unique products and have greater product added value.

The sample size in this study was calculated based on the Slovin formula. The Slovin formula used to determine the sample size is as follows:

$$n = \frac{N}{1+Ne^2} \quad (3.1)$$

Dimana:

n = the number of samples in the study area

N = the number of population in the study area

e= fault tolerance limit (10%)

Based on the population to be studied and with an error tolerance of 10%, the sample can be determined as follows:

$$n = \frac{8663}{1 + 8663(0,01)} = 99$$

From the calculation using the Slovin Formula above, the sample obtained is 99 respondents, so the number of samples in this study is rounded up to 100 creative industry actors in Magelang City.

The sampling technique in this study was a proportional random sampling technique. This technique is used because the grouping of creative industries is united into one group, namely the creative industry group in Magelang City. This makes sampling in the creative industries without stratification in it, so that the sampling is carried out randomly and proportionally in each village.

The basis for sampling creative economy actors in this research is that Magelang City is one of the cities that has a creative economy based on local wisdom. This can be illustrated by the large number of creative economy actors from the culinary, craft and digital media product sectors. The uniqueness of the creative economy in Magelang City can be seen from the culinary and crafts that reflect the local wisdom of the area.

Meanwhile, to answer the second, third, and fourth research objectives, key persons or informants were selected using a purposive sampling technique. As for the purposive sampling technique, considerations are needed to select and determine the sample, namely choosing a sample that is considered to know the problem being studied as well as understanding what is expected in the study. This non-probability sampling is a method in which the researcher selects key persons who really know about the variable or problem under study. The key persons in this study used the Penta-helix Academics, Business, Government, Community, Media (ABGCM) approach as follows:

- a) Academics: Creative economic planning expert lecturer
- b) Business: Creative industry actors, banking, partners
- c) Government: Regional Planning Development Agency/Bappeda of Magelang City and the Office of Industry & Trade of Magelang City
- d) Community: Civil society and NGOs
- e) Media: Digital and Conventional Media

The data collection techniques used in this study are observation, documentation, and questionnaires. This research uses a Penta-helix approach which consists of various stakeholders including Academics, Business, Government, Society, Media. This is very important because the development of the creative economy involves various parties and various elements. The use of the penta helix approach aims to increase synergy and collaboration between stakeholders and reduce the potential for conflict in developing a sustainable creative economy.

2.1 Interpretative Structural Modeling (ISM)

The analytical method used to answer the second objective in this study is Interpretative Structural Modeling (ISM) analysis. ISM as applied by Bhattacharya and Momaya (2009), is a sophisticated interactive planning methodology that allows a group of people working as a team, to develop a structure that defines the relationships among elements in a set. The ISM process starts with system modeling and ends with model validation. Through the ISM technique, unclear mental models are transformed into visible system models. ISM is a method of making decisions from complex situations by connecting and organizing ideas in visual maps. ISM is a model that describes the specific relationship between variables and the overall structure, and has outputs in the form of graphical models in the form of quadrants and variable levels (Li & Yang, 2014).

The first step in processing ISM is to create a Structural Self Interaction Matrix (SSIM), in which contextual relations are made for these variables by making one variable i and one variable j . Then making Reachability Matrix (RM) by changing V, A, X, and O with the numbers 1 and 0. The final step is to create a Canonical Matrix to determine levels through iteration. After there are no more intersections, then the model produced by ISM is created which is a model to solve the problem, in this case, the development of the cash waqf model. From this model, a road map for institutional development will be created (level).

For various sub-elements in an element based on RM, a Power-Dependence Driver is compiled. The sub-element classification is presented in the following 4 sectors (Marimin, 2004):

- a) Sector 1: Weak driver-weak dependent variables (AUTONOMOUS). Changes in this sector are generally not related to the system and may have a small relationship, although the relationship can be strong.
- b) Sector 2: Weak driver-strongly dependent variables (DEPENDENT). Generally, the variables here are dependent.

- c) Sector 3: Strong driver-strongly dependent variables (LINKAGE). Variables in this sector must be studied carefully because the relationship between variables is unstable. Every action on this variable will have an impact on the other and the feedback effect can increase the impact.
- d) Sector 4: Strong drive weak dependent variables (INDEPENDENT). The variables in this sector are the remaining part of the system and are called independent variables.

Driver Power	IV. Independent: Strong Driver weak Dependent variables	III. Linkage: Strong driver – strongly Dependent variables
	I. Autonomous Weak Driver – weak Dependent Variables	II. Autonomous Weak Driver – strongly Dependent variables
	Dependence	

Table 1. Driver Power-Dependence Matrix

2.2 Matrix of Alliances and Conflicts: Tactics, Objectives, and Recommendations (MACTOR)

The analytical method used to answer the third objective is the MACTOR method. The MACTOR method attempts to provide a global description of the importance and possible outcomes of various issues, as well as the expected actors' strategies, the relationship of power and potential alliances and conflicts. This method is intended to obtain the possible evolution of the system being studied to build a better and more coherent scenario. The MACTOR method is used to observe the preferences of each stakeholder and the level of support for the objectives identified (Ahmed et al., 2009). This method also determines the level of support each stakeholder has for each objective and group. In this study, the MACTOR method will identify the actors/stakeholders involved in efforts to develop a sustainable creative economy in Magelang City. After the actors are identified, they can be grouped based on their respective roles so that it will be known that these actors are included in the main actors, key actors, or supporting actors. The MACTOR analysis in this study is also used to explain the relationship/ interaction between actors.

Godet (2001) explained the MACTOR technique based on three main inputs in matrix form. As shown in the figure, these three inputs are based on the "influence relationship" between one actor and another.

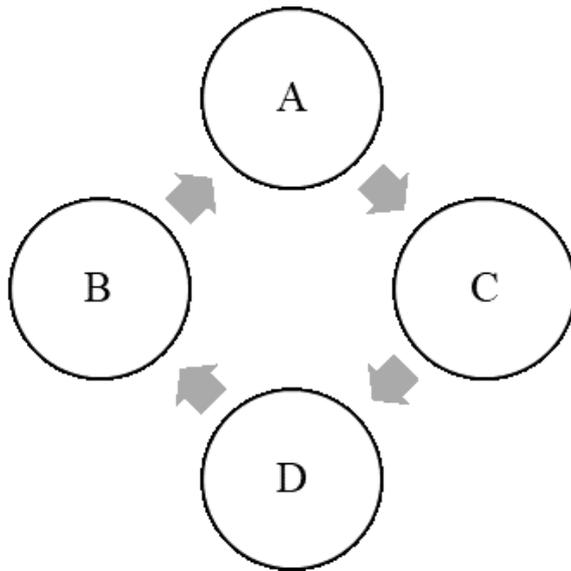


Figure 1. Driver Power-Dependence Matrix

The effect of actor A on actor D is the direct sum from A to D or indirectly through B and C.

With this concept, the input for the MACTOR through the position matrix (known as 1MAO [Matrix Actor Objective] and 2MAO) which uses the Saliency variable from the actor to the objective. The third matrix is MID (Matrix of Influence Direct) which uses a variable influence. In the calculation with software, the input from the user only requires the MID, 1MAO, and 2 MAO matrix. Then, it will be calculated by the computer through the mathematical algorithm process. Based on the MID matrix, the MACTOR then calculates the direct and indirect effect of one actor on another actor as mentioned in the figure (x.x). This matrix is the MIDI matrix (Matrix of Indirect and Direct Influence). The MIDI matrix from A to B is calculated through the formula:

$$MIDI_{A \rightarrow B} = MID_{A \rightarrow B} + \sum_C [\min(MID_{A \rightarrow C}, MID_{C \rightarrow B})]$$

This matrix is then used in the next step to determine the "balance of strength". The balance of power must first calculate the total direct and indirect effect of the actor. If M_A is interpreted as a direct influence of actor A on another (for example B), then:

$$M_A = \sum_B (MIDI_{A,B}) - MIDI_{A,A}$$

If we define D_A is the total direct and indirect influence received by A from other actors (in other words is dependency or dependence of actor A), then:

$$D_A = \sum_B (MIDI_{B,A}) - MIDI_{A,A}$$

By using the two components with the Basic of Power coefficient, then calculated with the formula:

$$r_A = \left[\frac{(M_A - MIDI_{A,A})}{\sum_A (M_A)} \right] \times \left[\frac{M_A}{M_A + D_A} \right]$$

In the next step, the MACTOR then calculates the matrix called $3MAO$, namely the matrix which is the basis and important in the discussion *MACTOR*. The $3MAO$ matrix resulting from the previous process or is a product of $2MAO$ and r_A or

$$3MAO_{A,i} = 2MAO_{A,i} \times r_A$$

With this matrix $3MAO$ knowing, various furniture can be produced. One of them is a mobilization coefficient that shows the reaction of each actor in one situation, this feature is produced through the formula

$$Mob_A = \sum |3MAO|$$

The analysis result of $3MAO$ also produces an agreement and disagreement of an objective calculated through:

$$Ag_A = \sum_a (3MAO_{A,i} (3MAO > 0))$$

$$DisAg_A = \sum_a (3MAI_{A,i} (3MAO < 0))$$

Another feature that is also important and produced from the matrix $3MAO$ is a convergence matrix ($3CCA$) that illustrates how much actors agree on an issue and divergence ($3DDA$) that describes the circumstances. The convergence matrix is produced through the equation:

$$3CAA = \frac{1}{2} \sum_i (|3MAO_{A,i}| + |3MAO_{B,i}|)(3MAO_{A,i} \times 3MAO_{B,i} > 0)$$

While the divergence matrix is written:

$$3DAA = \frac{1}{2} \sum_i (|3MAO_{A,i}| + |3MAO_{B,i}|)(3MAO_{A,i} \times 3MAO_{B,i} < 0)$$

The calculation result of the convergence and divergence between actors then produces the final indicator of **MACTOR**, which is the ambivalent coefficient for each actor calculated by the formula:

$$3EQ_i = 1 - \left[\frac{(\sum_k ||3CAA_{i,k} - 3DAA_{i,k}||)}{(\sum_k ||3CAA_{i,k} + 3DAA_{i,k}||)} \right]$$

These formulas illustrate **MACTOR** analysis. In its implementation, the analysis framework uses the following principles:

1. Build a table of "Strategies of Actor".
2. Identification of strategic issues and objectives.
3. Map simply the position of the actor in objectives related to the pros and cons of the objectives.
4. Determine the priority of the objectives of each actor.
5. Analysis of the Balance of Power for each actor.
6. Integration of balance of power in convergence and divergence analysis.
7. Formulation of key questions for reconstruction.

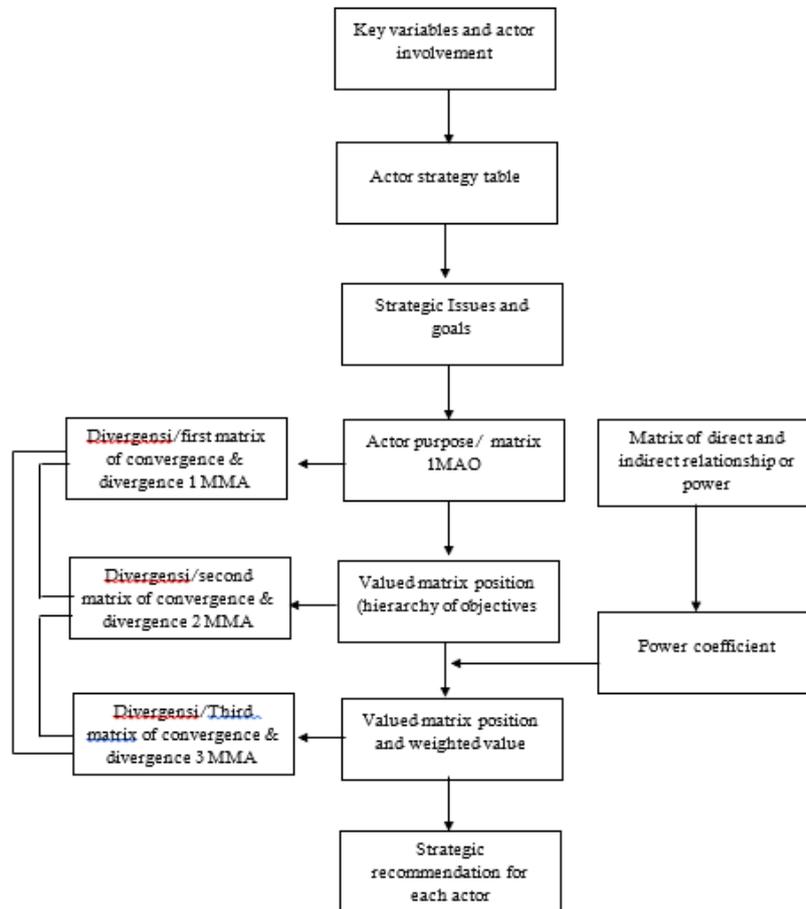


Figure 2. Three Main Inputs in the MACTOR Technique

3. Results and Discussions

Based on the results of interviews and discussions with experts, the results obtained that the strategy of sustainable creative economy development in Magelang city with a local wisdom-based penta approach is identified as many as ten (10) elements. The ten elements of the strategy are as follows:

1. Increasing business legality

Business legality becomes an important aspect for creative industry actors to get protection for intellectual property owned, legal protection, build business credibility, facilitate access to business capital, reduce risks over various parties involved, and facilitate access to foreign markets (Winczorek, 2021). Business legality is also needed for policymakers as a tool to monitor industry actors more easily (Puspaningrum, 2019; Dobusch, 2021). In the aspect of business legality, creative industry actors in Magelang City must be encouraged to register their business legality.

2. Increasing the skill and ability of entrepreneurs

The creative economy has a close relationship with increasing value added to a product or production output (Cannavale et al., 2020). Referring to the unique nature of the creative economy and prioritizing the creativity, skills, and talents of individuals, it is necessary to improve the skill and business capabilities that are sustainable and organized including creative economy actors (Colakoglu *et al*, 2019). In this case, the Magelang City Government needs to map skills for potential creative industry actors and increase business capabilities for business management in order to achieve the sustainability of the business actors of creative industries in Magelang.

3. Increasing sustainable business management

Another important aspect of developing sustainable creative economy development in Magelang city is managerial ability. Managerial abilities are important to maintain business sustainability, including for creative industrial businesses (Calza et al, 2023). By having qualified managerial capabilities, it is expected that businesses are able to develop directed creative business and business management that can follow market dynamics in their business (Ghosh et al., 2020).

4. Increasing production capacity

Another important aspect is to increase the business capacity for creative industry actors in Magelang City. Business capacity is the ability of workers, machinery, or organizations to produce goods and services in a certain period. This component is the best measure of an actor in an industry to produce goods and services to meet customer demand (Zhan *et al*, 2023). For creative industry actors, increasing the maximum production capacity can be done in various ways such as receiving adequate equipment support, conducting employee shift systems, or changes in the production process (Goswami & Daultani, 2023).

5. Application of Appropriate Technology (TTG)

When seen from the creative industry sub-sector, the application of appropriate technology is an important thing besides being an operational need it also functions to achieve a level of efficiency (Loupias & Diawati, 2019). In addition, the application of appropriate technology can also help the process of implementing organic ideas from creative industry actors (Abdoh, 2022). The Government of Magelang City, in this case, has a role to be able to translate the ideas of industry actors and ensure optimal use of appropriate technology by creative industry actors.

6. Supporting infrastructure improvements

Efforts to accelerate the creative business incubation center in Magelang City are a form of infrastructure that needs to be built and developed by the Magelang City Government. Facilitating the revitalization of physical infrastructure and creative space facilities is a relevant requirement to be built including in the regional scope (Tucker & Masuri, 2016). Infrastructure both in the form of ease of public facilities and in the form of community becomes an important element in an effort to build the development of a directed creative industry (Mbedzi & Kapingura, 2023).

7. Increasing capital access

Another element needed in the development of a sustainable creative economy is increasing capital access (Joseph & Totawar, 2021). The Magelang City Government needs to hold matchmaking to creative industry actors with potential partners both financing partners such as banking, angel investors, venture capital, and marketing partners.

8. Improving the grade and quality of sustainable products

The grade and quality of sustainable products are an important elements in the development of the creative economy in Magelang City. However, the majority of creative businesses are still dominated by micro and small scale so that they do not have consistent grade and quality standards. Though this has become an obligation in business development in order to increase productivity and profitability (McCannon, 2019). Efforts to improve grades and quality are elements that need to be encouraged by the Magelang City Government as a partner of creative industry development to be able to produce consistent grades and quality.

9. Increasing business branding

In terms of products, there have been already creative industry actors in Magelang City who began to create innovative products in accordance with the times such as in the fields of fashion, craft, and culinary. Increasing business branding is an important component that must be created by creative industry actors, which basically have the characteristics of products/services from the results of value added for the goods/services they created (Gegenhuber *et al*, 2022). Branding needs to be increased for every creative industry actor in Magelang City with the aim of building image, beliefs, quality assurance, and prestige. On the other hand, in the realm of market controllers, a strong brand can control the market because the community already knows it.

10. Increasing Promotion and Marketing Innovation

The ability to innovate has enough significant influence on marketing performance through the ability of social media (Rajala & Hautala, 2023). Adaptive promotional innovation of technology and market dynamics are important components that can be improved in the strategy of sustainable creative economy development in Magelang City.

Based on the results of the element classification of sustainable creative economic development strategies based on local wisdom in Magelang City consist of 10 criteria that produce 6 policy levels as in figure 3.

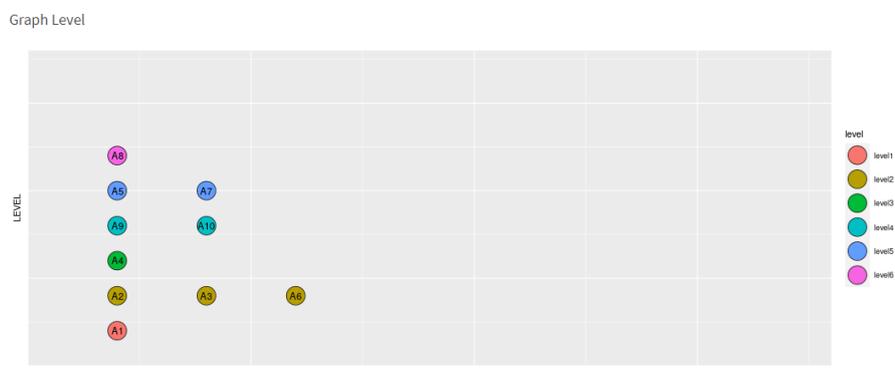


Figure 3 The element hierarchical structure of sustainable creative economy development strategy based on local wisdom in Magelang City.

Based on the hierarchical structure presented in Figure 3, it can be explained that the policy element at the first level is increasing business legality (A1). Then at the second level, there are three policies, namely increasing the skills and abilities of entrepreneurs (A2), increasing sustainable business management (A3), and improving supporting infrastructure (A6). Followed by the third level is increasing production capacity (A4). The fourth level is occupied by two policies including increasing business branding (A9) and increasing promotional and marketing innovations (A10). The policies that occupy the fifth level are the application of appropriate production technology (A5) and increasing access to capital (A7). Meanwhile, the last or sixth level is occupied by the policies of grades and quality of sustainable products (A8).

The classification of elements of a sustainable creative economy development strategy based on local wisdom in Magelang City can be classified into 4 (four) sectors which are presented in Figure 4.

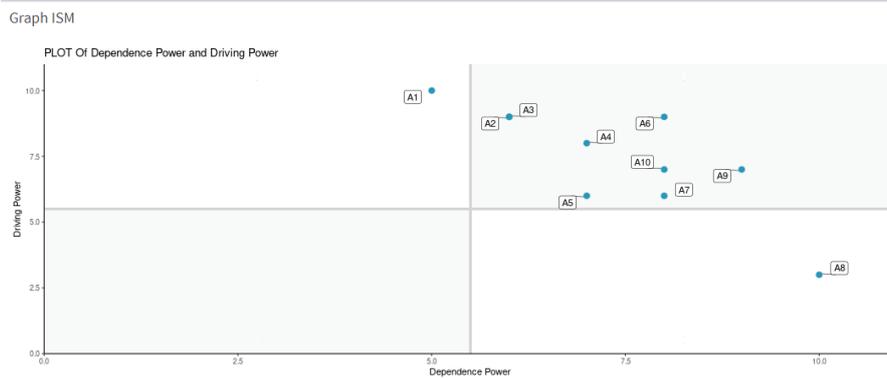


Figure 4. Driver power-dependence matrix.

Based on Figure 4 above, the classification of policy elements is carried out based on the coordinate points obtained from the Level Partitioning result. The result produces a classification of three sectors in the driver power-dependence matrix. Based on the driver power-dependence matrix, the creative economy development strategy through increasing business legality (A1) is included in sector IV (independent). The element has a great driving force but only has little dependence on other policy elements.

Then, the element of grade and quality improvement of sustainable product (A8) is in sector II or the dependent variable sector. This element is an element that is highly dependent on other elements. This shows that these elements have a relatively small driving force and are highly dependent on other variables.

Meanwhile, the elements of increasing the skills and abilities of entrepreneurs (A2), improving sustainable business management (A3), increasing production capacity (A4), applying appropriate technology (A5), improving supporting infrastructure (A6), increasing access to capital (A7), Increasing business branding (A9), Increasing promotion and marketing innovation (A10) are in sector III (Linkage). The elements in this sector have a large driving force but also have a large dependence on other elements. The elements in this sector must be studied carefully because the relationship between variables is unstable. Every action on this variable will have an impact on the other and the feedback effect can increase the impact.

In an effort to build a sustainable creative economy with a local wisdom approach in Magelang City, it requires collaboration and synergy from various relevant stakeholders/actors. These stakeholders come from local government groups, the community, creative economy actors, the Creative Economy Committee, banking, and the media (Subagyo, 2021; Widowati, 2019). Involvement of these stakeholders by considering the following matters:

1. These stakeholders/actors have the authority in developing a sustainable creative economy based on local wisdom in Magelang city
2. These stakeholders/actors will be affected by sustainable creative economy development policies
3. These stakeholders/actors are prerequisites for success in the development of a sustainable creative economy based on local wisdom in Magelang city
4. These stakeholders/actors have competence in developing a sustainable creative economy based on local wisdom

Based on these considerations, the stakeholders or actors who are the source of data in this study are as table 2.

N.	Stakeholders/Actors	Issue	Objectives
1	Businessman	Sustainable creative economy development with a penta-helix approach based on local wisdom in Magelang City	1. Increasing business legality
2	Business Partner		2. Increasing the skills and abilities of entrepreneurs
3	Banking		3. Improving sustainable business management
4	Service		4. Increasing production capacity
5	Regional Planning Development Agency		5. Application of appropriate production technology
6	Media		6. Improvement of supporting infrastructure
7	General Public		7. Increasing access to capital
			8. Grade and quality improvement of sustainable product
			9. Increasing business branding
			10. Increasing promotional and marketing innovations

Table 2. The Mapping of Actors Involved and Interested in Local Wisdom-Based Sustainable Creative Economy Development in Magelang City

Based on Table 2, the mapping of actors involved and interested in developing a sustainable creative economy based on local wisdom in Magelang City consists of 7 actors. The composition of the actors involved in the empowerment shows heterogeneous characteristics and shows cross-sectoral, cross-governmental organizations, and non-governmental institution involvement. These actors are entities that have an interest and have a role in mobilizing their resources to be able and active in the development of a sustainable creative economy in Magelang City. An understanding of the relations/relationships between actors in empowering farmers is needed to understand efforts/strategies for developing a sustainable creative economy with a penta-helix approach based on local wisdom in Magelang City. To understand the relationship between actors/stakeholders in empowering farmers, the researchers used the MACTOR software (Matrix of Alliance Conflict Tactic Operations and Responses). In the following, the

relations between actors in the development of a sustainable creative economy based on local wisdom in Magelang City are presented.

A comprehensive understanding of the relations between actors in supporting the development of a sustainable creative economy based on local wisdom in Magelang City begins with mapping the relationships between actors. The result of processing the influence data between actors with MACTOR can be seen in Table 2 below. The numbers in column I_i show the influence score, while the numbers in row D_i show the dependency between actors.

MDII	Businessman	Business	Banking	Service	Regional Agency	Media	Public	I_i
Businessman	14	16	13	14	16	14	16	89
Business Partner	14	16	14	13	17	14	17	89
Banking	14	17	14	15	16	14	18	94
Service	14	16	13	15	15	14	16	88
Regional Agency	14	16	12	14	14	13	16	85
Media	14	16	13	14	17	14	17	91
Public	11	13	11	13	13	12	13	73
D_i	81	94	76	83	94	81	100	609

Table 3. The Influence between Actors/Stakeholders with MACTOR Analysis

Table 3 shows that stakeholders who have a high influence on the development of a sustainable creative economy based on local wisdom in Magelang City are banks with a score of 94, the media with a score of 91, and business actors and business partners with a score of 89. Meanwhile, the stakeholders who have the lowest influence are the community with a score of 73.

Then, the stakeholders who have a high dependency tendency are the community with a score of 100 followed by business partners and Regional Planning Development Agency with a score of 94 while stakeholders who have the lowest dependency are banking with a score of 76.

The actor preference matrix for objectives presents the preferences of the actors involved in efforts to develop a sustainable creative economy based on local

wisdom in Magelang City for the expected goals or objectives which are included in the 10 identified objectives including:

1. Increasing business legality
2. Increasing the skill and ability of entrepreneurs
3. Improving sustainable business management
4. Increasing production capacity
5. Application of Appropriate Technology (TTG)
6. Improvement of supporting infrastructure
7. Increasing capital access
8. Improving the quality and quality of sustainable products
9. Increasing business branding
10. Increasing Promotion and Marketing Innovation

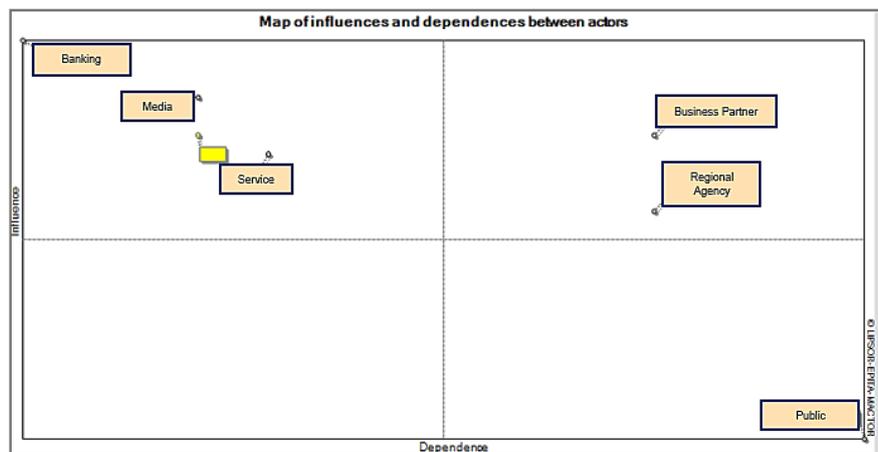


Figure 5. Actor mapping in the influence and dependence quadrant

Insert Table 4 Here

2MAO	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	Absolute sum
Businessman	3	4	4	3	4	3	2	2	4	4	33
Business Partner	3	2	3	3	2	2	1	3	2	2	23
Banking	2	3	3	2	1	2	2	3	3	4	25
Service	4	-3	3	4	3	3	4	3	4	3	34
Regional Agency	3	3	3	4	3	3	4	3	3	3	32
Media	4	-4	3	4	-2	2	3	3	4	3	32
Public	2	2	3	2	1	2	3	2	3	2	22
N. of agreements	21	14	22	22	14	17	19	19	23	21	
N. of disagreements	0	-7	0	0	-2	0	0	0	0	0	
N. of positions	21	21	22	22	16	17	19	19	23	21	

Table 4. Degree Mobilization of Actors and Goals

Table 4 presents the position of each actor on each target/goal (objective) by considering the degree of opinion of the actors regarding the target competitiveness and hierarchy of their targets. The output of this matrix is the first two degree of mobilization that will explain the targets/objectives that most move the actors. Second, mobilization will explain the most mobilized actors to use resources to achieve objectives.

The degree of mobilization (bottom row) shows which objectives are expected to be the main issues that provoke stakeholder reactions. In an effort to develop a sustainable creative economy based on local wisdom in Magelang City, the issues that become the greatest concern are increasing business branding (23), Increasing sustainable business management, and increasing production capacity (22). Meanwhile, the most mobilized actors are the Office (34), Creative Economy Entrepreneurs (33), Regional Planning Development Agency, and Media (32). These actors are the most active in mobilizing in answering the problems of developing a sustainable creative economy based on local wisdom in Magelang City. In more detail, we can see how the actors' preferences for issues/objectives in the development of a sustainable creative economy in Magelang City in the following figure:

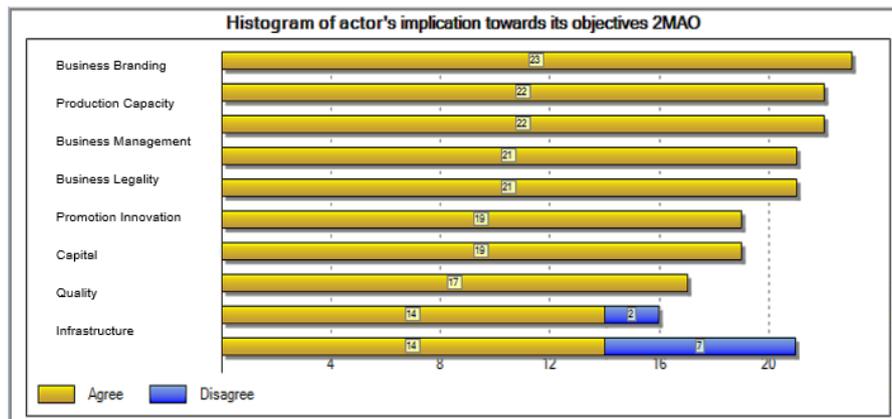


Figure 6. Histogram of actor's perception of objectives

Based on the mapping of perceptions between actors, it can be further investigated that regional objective has received little resistance or rejection from some actors. Nevertheless, more actors agree with the objectives to be achieved in the development of a sustainable creative economy based on local wisdom in Magelang City. As for some of the rejections that exist, namely the application of skills and abilities and the application of production technology. These various rejections arose because the stakeholders concerned felt that the objectives to be achieved in the development of the creative economy could interfere with the achievement of the businesses they are running.

The mapping of actors who agree and disagree with the objectives in developing a sustainable creative economy based on local wisdom in Magelang City can be seen in the picture of the scales between actors and objectives as figure 7 and 8.

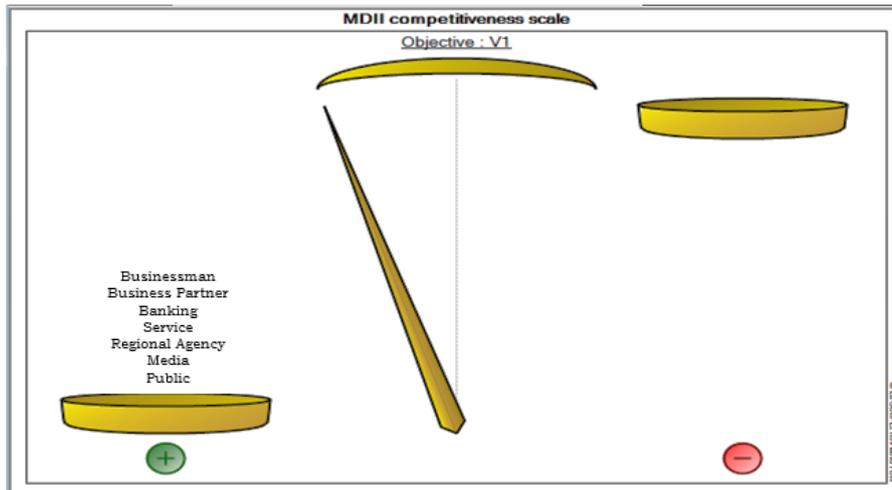


Figure 7. The scale between actors and the objective of increasing business legality

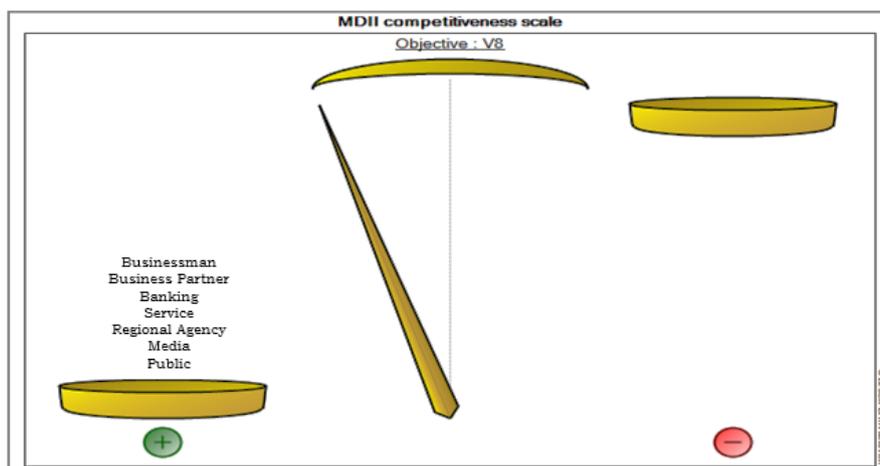


Figure 8. The scale between actors and objectives of sustainable quality improvement and product quality

Figure 8 shows the "scales" of actors who agree and disagree on conservation objectives. Actors/stakeholders who agree with the goals are on the "scale" of + (positive) sign and actors who reject the goals are on the "scales" – (negative). The analysis of "scales" with the objective of increasing business legality and improving the grades and quality of sustainable products shows that there are no actors who disagree in efforts to develop a sustainable creative economy in Magelang City.

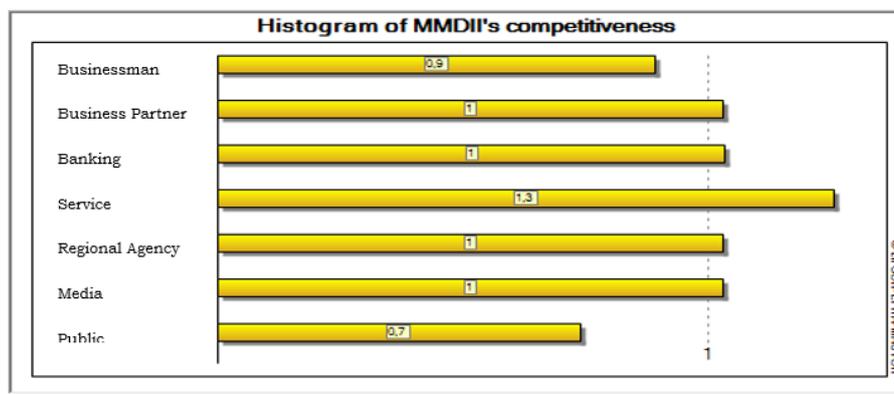


Figure 9. Actor competitiveness

Based on Figure 9, it can be seen that actors who have high competitiveness include the MSME Office (1.3), business partners (1), banking (1), Regional Planning Development Agency (1), and the media (1). These actors have an important role both directly and indirectly in the development of a sustainable creative economy based on local wisdom in Magelang City. Meanwhile, actor who has low competitiveness is the general public.

3.1 Conflict potential between actors

The analysis of potential conflicts between actors aims to find out the actors with the greatest possible conflict in their interactions in the development of a sustainable creative economy based on local wisdom in Magelang City. The result

of the potential conflict analysis between actors can be seen in the following figure 10.

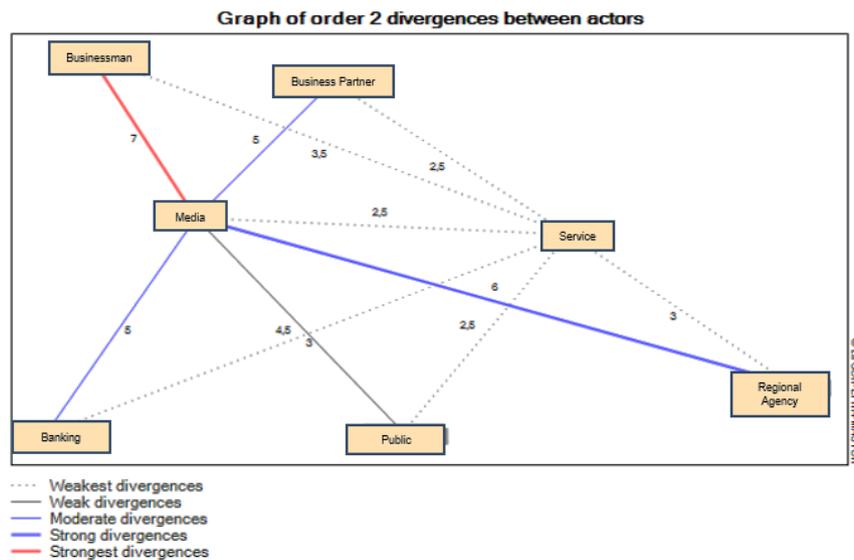


Figure 10. Divergence Matrix between Actors

Figure 10 shows that in the effort to develop a sustainable creative economy based on local wisdom in Magelang City, it has the potential to create conflicts of interest. The activities of actors that are most powerful in causing conflict are business actors and the media. These two actors have the potential to create strong category conflicts (strong divergences). In addition, these two actors are also prone to conflicts with others, such as Media and Regional Planning Development Agency. Therefore, in implementing the empowerment strategy, it is necessary to prioritize a participatory and in-depth discussion approach so that potential conflicts that arise can be minimized.

3.2 Potential for collaboration between actors

Creative economy development in Magelang City requires synergy and collaboration between actors. The potential for collaboration/cooperation between actors can be seen from the degree of convergence between actors as follows figure 11.

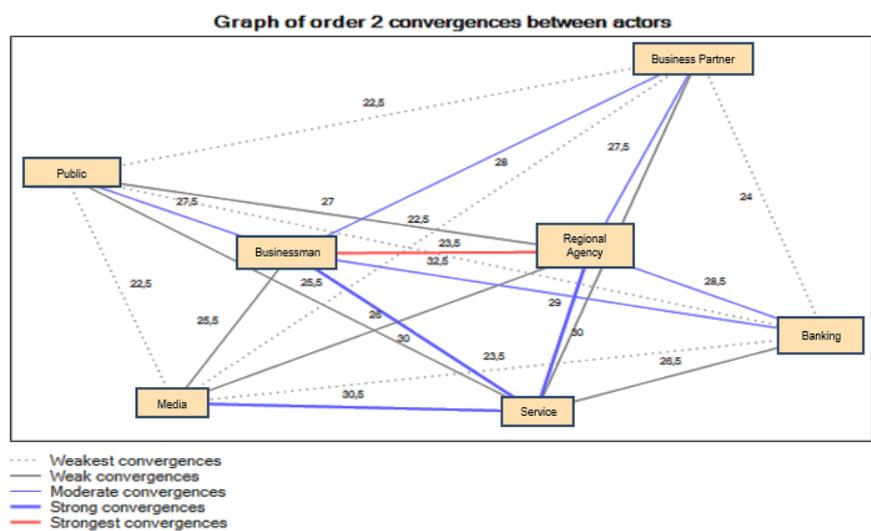


Figure 11. Convergence matrix between actors

Figure 11 explains that the degree of convergence (agreement and covenant) between actors in developing a sustainable creative economy based on local wisdom in Magelang City generally tends to be moderate. Based on the objectives/purposes and roles they have in mobilizing resources, we can map the actors who have the "strongest convergences" which have the most important role in the development of the creative economy. The actors with the strongest convergence are creative industry actors and Regional Planning Development Agency. Regional Planning Development Agency must be able to become an influencer for creative industry actors to start developing their businesses in a

sustainable manner by defining their business identity based on local wisdom in Magelang City. The very important role of these actors will be supported by other parties who are in the "strong convergences" category, namely creative industry actors-office, media-office, and Regional Planning Development Agency-office.

A map of Net Distances between Objectives is used to identify objectives where actors take the same position (both pro and against). This graph maps the objectives with respect to the scale value (the difference between the convergence matrix value and the divergence matrix value) as presented in the following figure 12.

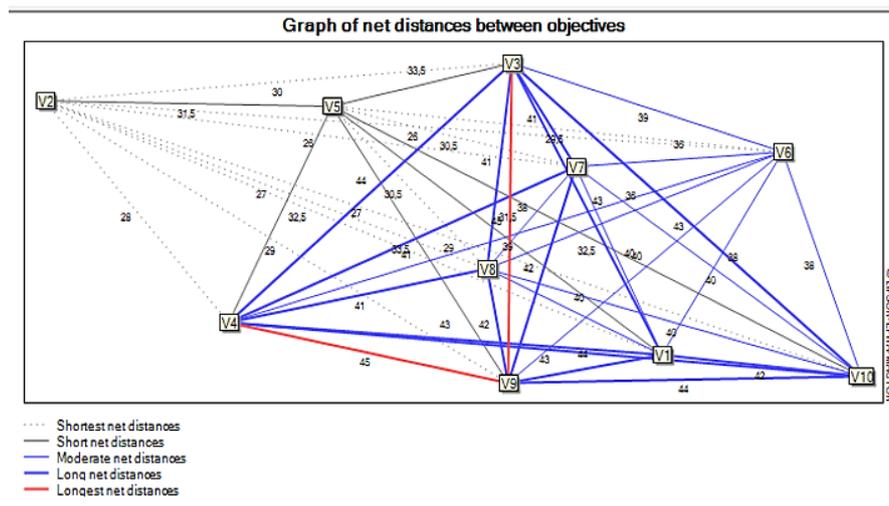


Figure 12. Graph of distance between destinations

The image of the distance between objectives presented illustrates the interrelationships between program objectives. The possible level of closeness that occurs between objectives is illustrated by red and blue colors. The red color indicates a stronger relationship distance than the blue color. The relationship of distances between objectives in the development of creative economy where increasing production capacity-business branding and improving sustainable business management-business branding has a strong relation.

The distance between these actors illustrates the possibility of cooperation between parties. The possible level of cooperation between actors is described in red and blue colors. The red color indicates stronger distance which allows for stronger cooperation. The graph of the distance between actors can be seen in the following figure 13.

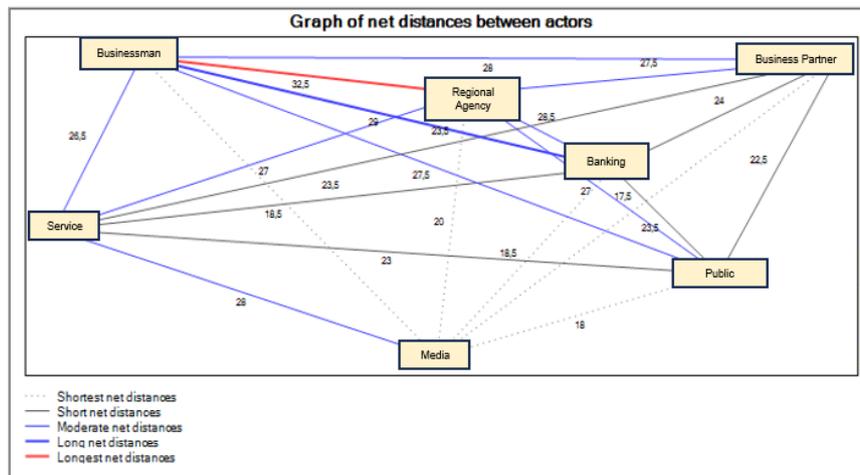


Figure 13. Graph of distance between actors

The relationship of the distance between actors in the development of the creative economy in Magelang City shows a very strong relationship between them (shown in bold red). This shows the strong relation between these actors in developing a creative economy based on local wisdom in Magelang City. The actors who have a very strong relationship are creative economy entrepreneurs and Regional Planning Development Agency.

4. Conclusions

Based on the result and discussion that have been presented, it can be concluded that the strategy for developing a sustainable creative economy in Magelang City with a penta-helix approach based on local wisdom identified as many as 10, among others 1) Increasing business legality, 2) Increasing the skills and

capabilities of entrepreneurs, 3) Increasing sustainable business management, 4) Increasing production capacity, 5) Application of Appropriate Technology, 6) Improvement of supporting infrastructure, 7) Increasing access to capital, 8) Increasing the grade and quality of sustainable products, 9) Increasing business branding, 10) Increasing promotion and marketing innovation. The policy element at the first level is Increasing business legality (A1). Then, there are three policies at the second level, namely increasing the skills and abilities of entrepreneurs (A2), increasing sustainable business management (A3), and improving supporting infrastructure (A6). Based on the driver power-dependence matrix, the strategy of creative economy development through increasing business legality (A1) is included in sector IV (independent). The element has a great driving force but only has little dependence on other policy elements.

The stakeholders involved in efforts to develop the creative economy in Magelang City are business actors, business partners, banking, agencies, Regional Planning Development Agency, media, and the general public. The stakeholders who have a high influence on the development of a sustainable creative economy based on local wisdom in Magelang City are banks with a score of 94, the media with a score of 91, and business actors and business partners with a score of 89. Meanwhile, the stakeholder that has the lowest influence is the community with a score of 73. Then the stakeholder with a high dependency tendency is the community with a score of 100 followed by business partners and Regional Planning Development Agency with a score of 94. The degree of mobilization (bottom row) shows which objective is expected to be the main issue that elicits stakeholder reactions. In the effort to develop a sustainable creative economy based on local wisdom in Magelang City, the issues that become the greatest concern are increasing business branding (23), increasing sustainable business management, and increasing production capacity (22). Meanwhile, the most mobilized actors are the Service (34), creative economy entrepreneurs (33), Regional Planning Development Agency, and Media (32). These actors are the most active in their mobilization in responding to problems in the development of a sustainable creative economy based on local wisdom in Magelang City.

The suggestion that can be given in this study is that the creative economy in Magelang city has the potential to be developed considering that the regional location is very strategic and is traversed by tourist routes. However, the creative economy database in Magelang City is not yet available comprehensively, so it needs to be compiled for the 17 existing creative economy sub-sectors. The government as the authority holder needs to develop policies that can help

develop potential creative economies such as culinary, craft, and others. In addition, it is necessary to provide supporting infrastructure for creative economy actors in the form of open spaces for meetings of creative economy actors as well as assistance with information and communication technology facilities and Appropriate Technology (ITG). Then, it is also necessary to develop innovative business models and increase access to financing for the developing creative economy.

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