

Strategic Development Model for The Local Wisdom Based Small and Medium Enterprise (SMEs) : Using Analytical Hierarchy Process Approach

Sucihatningsih Dian Wisika Prajanti¹, Dalila Daud², Christina Litaay³, Talitha Widiatningrum¹, Dhea Rizky Amelia⁴

¹Universitas Negeri Semarang, Indonesia

²Universiti Teknologi MARA, Malaysia

³Indonesian Institute of Sciences, Indonesia

⁴Universitas PGRI Semarang, Indonesia

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Abstract

The objective of this research is to construct a strategic development model for the local wisdom based SMEs in Magelang City of Central Java. SMEs become business entities that are prospective, have a high resilience and hugely contribute to the economy. Various attempts have also been made by the government to optimize the development of SMEs, in this case to those in Magelang City, with all their strengths and potentials. The “Magelang Kelurahan Entrepreneurship Center” program or abbreviated as “Magelang Keren” has become one of the attempts from the Magelang City Government to support the SMEs succession. The mapping, synchronization, and harmonization in the attempt on empowering the SMEs is really needed as the basis of the policy to make an accurate program. This research used the descriptive qualitative and quantitative approach. The approach used is the Analytical Hierarchy Process (AHP) with the help of Geographic Information System (GIS) data analysis, using the House Model Analysis and the Fishbone Diagram. The findings of the research formulated that the attempt in developing the SMEs in Magelang City can be focused on the three main aspects, government policy, human resources and also the institutional. In the attempt of developing those specifically, it can be described by separating it into three alternatives that are prioritized, motivating the SMEs actors to improve the longevity of the business, training in promotion and marketing by using the IT, general training and the ease of the access on the registration as well as the procurement of HKI optimally that are centralized, consistent and sustainable.

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INTRODUCTION

Small and Medium Enterprises (SMEs) have a significant role in the economy (Juanda *et al*, 2023; Maksum *et al*, 2020). World Bank (2020), stated that 90 percent of the business entities are those of SMEs that contribute to the hiring of 50% of the global workforce. The number of SMEs in Indonesia in 2018 is about 64.2 million or 99.99 percent of the total business population, and they are hiring more than 117 million workers or 97 percent of the total workforce in Indonesia (Herispon & Hendrayani, 2021). SMEs in Indonesia are still dominated by the micro business sector with the proportion reaching 98.69 percent from the total business unit of the SMEs sector with the workforce hiring at about 89 percent (Sabrina, 2021). SMEs also have a significant role in facing the Sustainable Development Goals (SDGs), especially to stimulate innovation, creativity and also to create proper work opportunities for all (Horne *et al*, 2020; Islam & Wahab, 2021). Specifically, SDGs formulates the Objective 8 (target No. 3) and Objective 9 (target No. 3) to strengthen the position of the SMEs in the economy.

That role becomes the base of the Indonesia Government to strengthen the commitment in developing the SMEs (Menne *et al*, 2022; Hernita *et al*, 2021). That is mentioned in the main strategy on the Medium Term National Development Plan (RPJMN). On RPJMN of 2020-2024, the government committed to strengthen the entrepreneurship and SMEs in order to improve the additional value on economy, job opportunities, investment, export and the competitive value through five priority area, (1) developing the human resources, (2) improving the access to financial services, (3) improving the added value of the SMEs in the domestic and international markets, (4) strengthening the partnership, and (5) repairing the rules and policies that influence the longevity of the SMEs.

In order to succeed in reaching the accomplishment target of RPJMN of 2020-2024, the Government of Magelang City manifests the national program on the SMEs into a program entitled "Magelang Kelurahan Entrepreneurship Center" also known as "Magelang Keren" that is mentioned in the RPJMD of 2021-2026. The objective of the "Magelang Keren" program is to able to create 1,500 new entrepreneurs (WUB) and the attempt to improve the competitiveness of the SMEs. The data from the Disperindag of Magelang City (2020) shows that Magelang City has a great potential in SMEs sector, this is seen from the presence of a significant improvements in term of the total of SME actors in the last five years. In 2017, the SME actors of Magelang City that are recorded are 6,940 business actors and it keeps growing up to 9,206 business actors in 2021. Including during the Covid-19 pandemic, the addition in business actors number is significant compared to the previous year, where the SAME actors of 2021 in Magelang City are able to grow up to 6.27%.

The big SMEs' potential upon the economy of the Magelang City has faced developmental issues especially in terms of the accomplishments of "SMEs Upgrading" as the succession program for the "Magelang Keren". Various programs of SMEs empowerment that have been done, whether in the sector of marketing, financial, production or the other sectors. However, that has not given an optimal result (Rosyadi *et al*, 2021, Campos *et al*, 2023). Therefore, the mapping, synchronization and harmonization of the SMEs empowerment program especially in Magelang City is highly necessary to improve the effectiveness of program accomplishment, so that it can improve the contribution of SMEs towards the economy of Magelang City.

Based on that, Bappeda of Magelang City, along with the research and social contribution institute of State University of Semarang (LPPM UNNES) attempted to map the SMEs using the "Upgrading" approach with the objectives of: (1) identifying the condition, types of SMEs that are developing and potential in Magelang City; (2) identifying and mapping the issues regarding the SMEs in Magelang City; (3) Classifying the SMEs of Magelang City; (4) constructing the development model for the SMEs in supporting the "Magelang Keren" program; as well as (5) formulating the target, strategy and the direction for the policies, indications of the program and the developmental activities for the SMEs in Magelang City on 2023-2029.

The transformation of the SMEs eventually becomes important to support the stability and growth of a strong and inclusive economy (Wang & Chen, 2022; Gewe *et al*, 2016). SMEs have a strategic role in

the domestic economy, it is reflected in the number of large scale businesses, the high number of workforce hired, and the high contribution of the PDRB (Deschênes, 2022; Kiranantawat & Ahmad, 2022). SMEs also have a high level of resilience in facing various previous crises, although the Covid-19 pandemic recently gave an unbelievably strong pressure (Madhavan, 2022). The resilience of the SMEs so far has the role as the safety net for the economy because they are able to survive the depressing period and can grow back faster and higher after the pressure ends (Caballero-Morales, 2021; Zamani *et al*, 2022). With such a strategic role, SMEs definitely have a fundamental role in supporting the policy mix brought by the Magelang City Government in the future. The objective of this research is to formulate a local wisdom based developmental strategy model for the SMEs.

METHODS

This research uses the approach of descriptive qualitative and quantitative. This research studies the development of the existing SMEs of Magelang City, focuses on the attempts in identifying the development and the economical characteristics of the SMEs, then classifying the SMEs and designing the SMEs development in Magelang City. This research uses the primary and secondary data. The primary data is usually gained by the on site survey that uses the data collecting method, one of it is by using the key respondents. The secondary data is gained from the Magelang City Regional Government. These data have been published whether as a written report or the online content. In this research, the needed primary data are; direct survey to the key respondents and the establishing of the Focus Group Discussion (FGD). Meanwhile, the needed secondary data are those related to the development of the SMEs of Magelang City.

This research needs two types of data, the primary and the secondary data. The data collecting technique for the primary data is the FGD done with the key informants. Meanwhile key informants are the following:

- (1) Representative from the Regional Secretary of Magelang City
- (2) Representative from the Bappeda of Magelang City
- (3) Representative from Kominfo of Magelang City
- (4) Representative from the Industry and Trade Department of Magelang City
- (5) Representative Environmental Department of Magelang City
- (6) Representative of the Investment Department and the One Access for All Service
- (7) Representative of Human Resources of Magelang City
- (8) Representative of Cooperative and SMEs
- (9) Representative of KADIN of Magelang City
- (10) Representative of Joint Business Actors of Magelang City
- (11) Representative of State or Private University of Magelang City
- (12) Representative of Media of Magelang City
- (13) Representative of product consumers of the SMEs in Magelang City

The data collecting technique for the secondary data in this research is by using the documentation technique, which is by analyzing the publication documents that discuss the data and information upon the SMEs present in Magelang City.

Diagram Fishbone Analysis

Fishbone diagram is a method to discover a cause-effect from a problem that can help in discovering various reasons why such problems exist in a business process. To put it simply, this method can be interpreted as an analysis model to help solve a problem in the business process of every phase so that the company can discover the root of the problem accurately. Here are the phases in constructing a fishbone diagram:

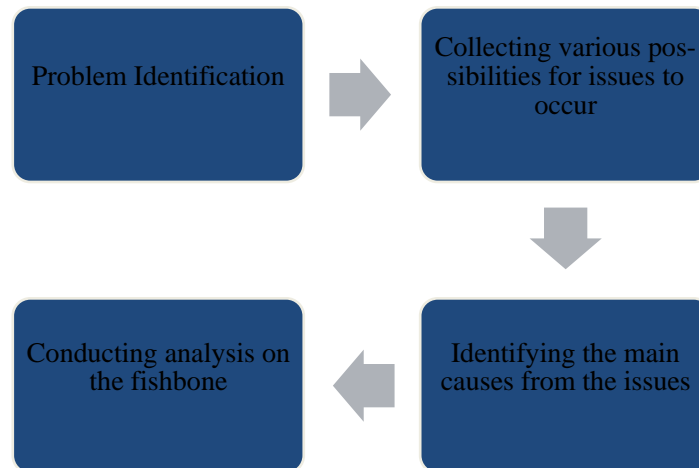


Figure 1. Flow of Constructing Fishbone Diagram

Meanwhile, the structure of the fishbone diagram is the following:

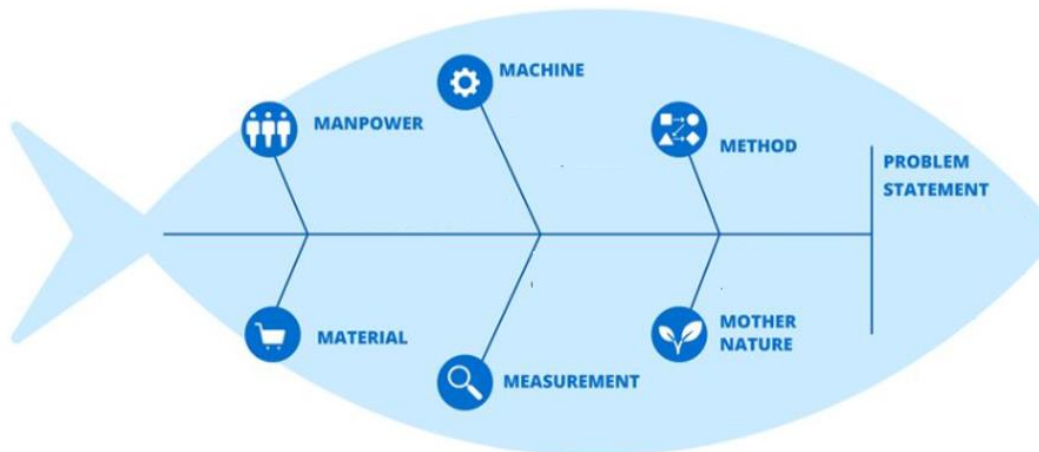


Figure 2. The Structure of the Fishbone Diagram

One of the factors in making the fishbone diagram is determining the factors that possibly become the causes for an issue occurring in a process. In the business world, such factors can be called a 6M structure that functions as 6 main “bones” of the fishbone. Meanwhile, the 6M are:

- (1) *Method*: a process in a production. Oftentimes, the production activity consists of many activities that are not necessary so that the company needs to simplify such processes so that it becomes easier and less time consuming.
- (2) *Manpower*: consisting of the operational manpowers in the production process until the delivery. However, this factor is very rarely the cause of a problem.
- (3) *Material*: usually related to the raw materials, components, resources, and other materials that are needed by the company in the production process. The problem that may rise due to these materials usually are wrong storing techniques until maintenance issues.
- (4) *Machine*: related to the system, tools, and machine for the production. This factor usually becomes the cause of problems because of machine maintenance that is not optimal. Whether due to some age issue or other technical issue.
- (5) *Measurement*: one needs to know that sometimes measurement can be inconsistent and inaccurate. The result is one will experience difficulties in analyzing the data that has been collected to draw a conclusion.

- (6) *Mother nature*: a term to call the business environment. Where this is a factor that cannot be predicted by the company. For example, extreme weather, natural disasters and many other situations.

Geographic Information System (GIS) Analysis Diagram

The data analysis method that is used to map the prominent commodity is spatial data analysis. This analysis uses the descriptive quantitative analysis with the help of the Geographical Information System (GIS). This analysis discusses the characteristics of the SMEs in Magelang City. The discussion about the characteristics of the business type, scale of business and many others. The data presentation is in a form of descriptive numbers, tables, graphs, and figures that are related to the object discussed. From this analysis, the Magelang City distribution map can be gained. Meanwhile, the indicators/variables that will be the base in this mapping analysis are the following:

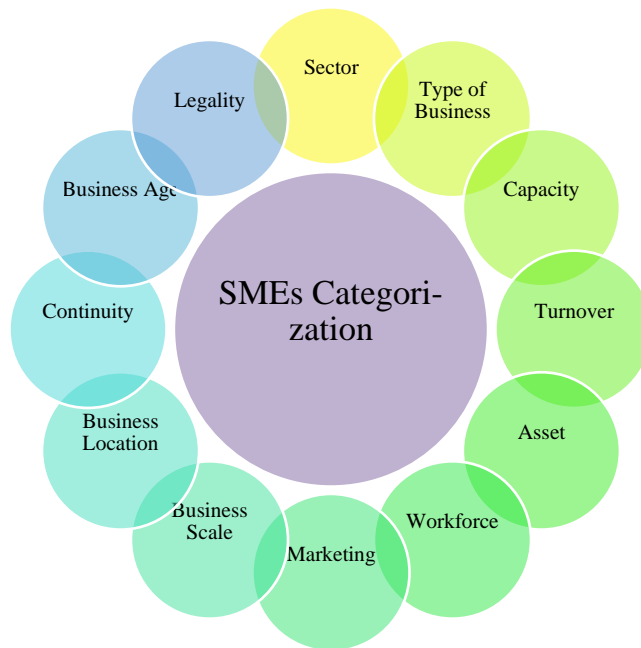


Figure 3. SMEs Categorization Indicators

House Model Analysis

House model is an analysis model that is used to construct the planning of an act. Horovitz dan Corboz (2007) designed this model with three components, the roof as the vision where the meaning of this research is the improvement on green manufacturing on the waste of beverages products, the pillar as the main key in achieving the vision, and the foundation is in the form of supporting behavior. Meanwhile, the structure of the house model that will be used in this research is the as follow:

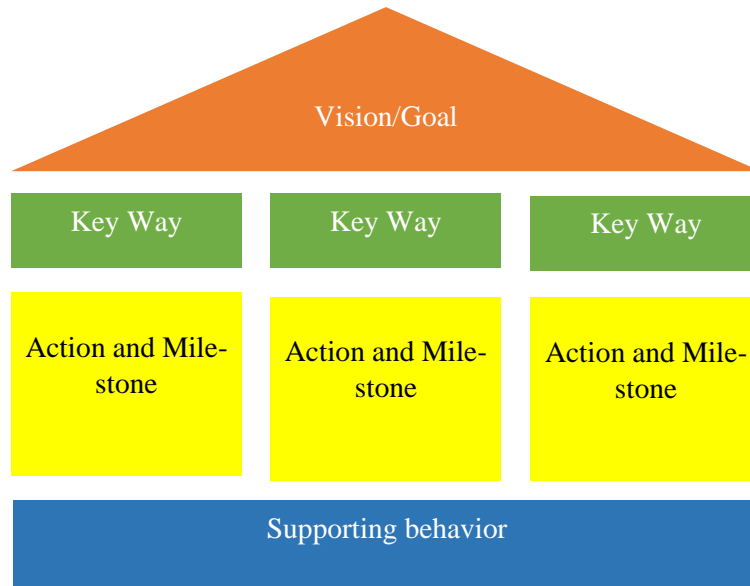


Figure 4. The Structure of the House Model Analysis

Analytical Hierarchy Process (AHP)

The method of Analytical Hierarchy Process (AHP) is a model of decision making that is comprehensive by calculating the things that are qualitative and quantitative. The AHP method can help in constructing a priority as well as the objectives from various choices by using several criteria. To determine the priority of each element in a problem of decision is by creating pairwise comparisons, in which every element is compared in pairs upon a determined criteria. The form of this pairwise comparison is the matrix. The way to fill this comparison matrix is by using numbers that describe how relatively important an element is among the others.

Such a scale defines and explains the score of 1 to 9 that are established as a consideration in comparing the elements pair that are uniformed in every level of the hierarchy upon a criteria that is one level above.

Through the Analytical Hierarchy Process (AHP) method, several strategies for the Magelang City SMEs development are being developed.

Table 1. Pairwise Comparison Scale

S	Note
Nilai 1	Both factors are equally important
Nilai 3	One factor is slightly more important than the other
Nilai 5	One factor is essential or more important than the other factor
Nilai 7	One factor is the most important among all the factors
Nilai 9	One factor is absolutely more important than the other factor
Nilai 2,4,6,8	The in-between scores, between two scores with a close consideration.

Source: Saaty in Prajanti, 2013

In finishing an issue using the Analytical Hierarchy Process (AHP), there are several principles that must be understood, among others are the following:

1. *Decomposition* (Creating Hierarchy)

In constructing the hierarchy, one must determine the objective through the criteria used to value the existing alternatives. Every criteria sometimes has sub-criteria below it that has each own intensity scores.

2. *Comparative judgement* (Valuing the criteria and alternatives)

The criteria and alternatives done with the pairwise comparison. According to Saaty (1988), for various issues, the scale of 1 to9 is the scale used in the valuation.

3. *Synthesis of priority* (determining the priority)

Determining the priority of each criteria is used to weigh each criteria in the decision making. The Analytical Hierarchy Process (AHP) method conducts the priority analysis on each criteria by using the pairwise comparison between the two elements so that all of the existing elements will be considered in the comparison.

4. *Logical Consistency*

Consistency has two meanings. The first one is that similar objects can be classified according to the type. The second one is related to the degree of relationship among the objects that is based on a certain criteria.

In determining the prioritization strategy, several steps are needed in the Analytical Hierarchy Process (AHP) method, and those are:

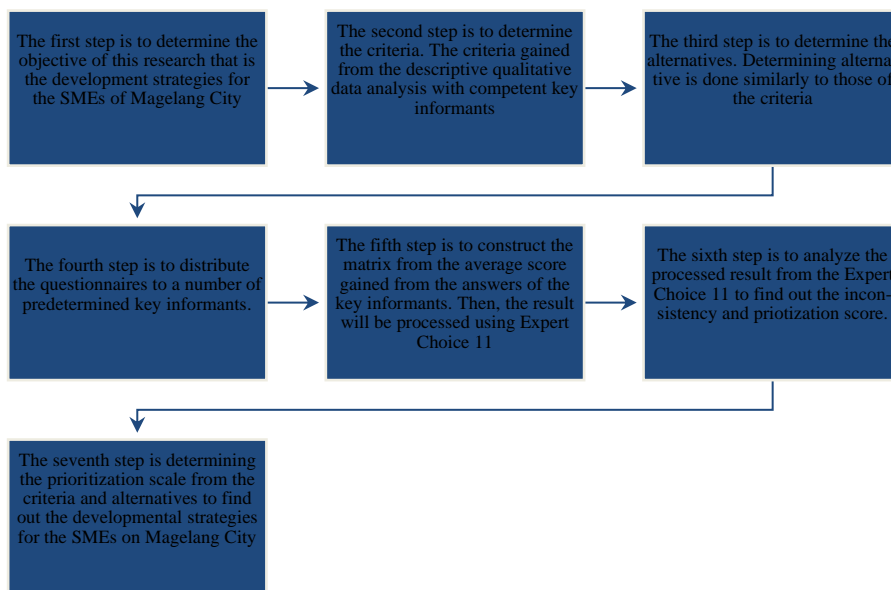


Figure 5. The Phases of AHP Analysis

RESULTS AND DISCUSSION

Potentials and Issues of SMEs in Magelang City

The SMEs of Magelang City have a great potential to develop if it is seen from the age of the business actors. Although based on the data of Disperindag (2021), 47% or 4,288 of the total of business owners are above 51 years old. However, proportionally, the business owners below 51 years of age have a higher percentage of 43%, with the detail of the business owners at the age of 41-50 is as much as 28% or 2,566 business owners. Meanwhile, for those who are 31-40 years old and 17-30 years old are ranging from 18% and 7%.

The SMEs actors in Indonesia are also dominated by women. Based on the Data of Disperindag of Magelang City, 69% of the business owners or about 6,320 of business owners are women, and 2,886 of the rest are men. The number of the turnover and assets of the business owners of SMEs in the recent year experienced fluctuating growth. Seen from the total of assets, 9,206 of the business owners in Indonesia in 2021 reached a total of IDR 54,667,569,800. This total increased from the previous year as much as 12.47%. This condition repaired the negative turnover (-8.22%) in 2020. However, the growth of the positive turnover in 2021 was not followed by the repair of the asset growth for the SMEs actors. On 2021, the total number of SMEs actors in Magelang City grew as much as 3.26% or IDR 78,051,741,500. Such conditions were different from the year of 2020 where the total assets of the SMEs actors in Magelang City

successfully grew 0.84% compared to the previous year, which was in the approximate of IDR 86,678,494,129.

The business scale of the SMEs in Indonesia are generally dominated by the micro businesses. Based on the data of Disperindag of Magelang City (2021) the number of the micro business owners in Indonesia reached 8,977 or if it is based on the SMEs population of the micro business, it reached 97.51%. In the second position, there is a small category business with 214 businesses or 2.32%, and the last one is the medium scale business with 15 businesses or 0.16% of the total of SMEs Magelang City.

Besides, the SMEs of Magelang City are dominated by the Trading sector with a total of 5,537 businesses (60.15%) followed by Non Agricultural businesses with 1,971 (21.41%). The third position and the last position are the Service and Agricultural businesses, consecutively having the actors of 1,585 (17.22%) and 1,971 (1.23%).

Generally, the market of the SMEs in Magelang City is still dominated by local marketing. 8,574 SMEs actors of Magelang City are still marketing their business within the Magelang City area, while those businesses that have marketed their business with the combination of local market and out of town (Central Java & Yogyakarta Special Region) are only 374 of business owners. Nevertheless, the business owners of the SMEs of Magelang City recently began to expand their marketing network outside Magelang City and up to overseas. There are 195 SMEs actors with the out of town marketing (within the Central Java and Yogyakarta regions), there are 10 SMEs actors with out of town marketing (outside the Central Java and Yogyakarta regions), and there are 52 business actors with national marketing. Meanwhile, for those who successfully compete in the international market, there is 1 actor with the micro business scale.

Meanwhile, the result of the analysis from the fishbone diagram upon the issues faced by the SMEs in the Magelang City are as follows:

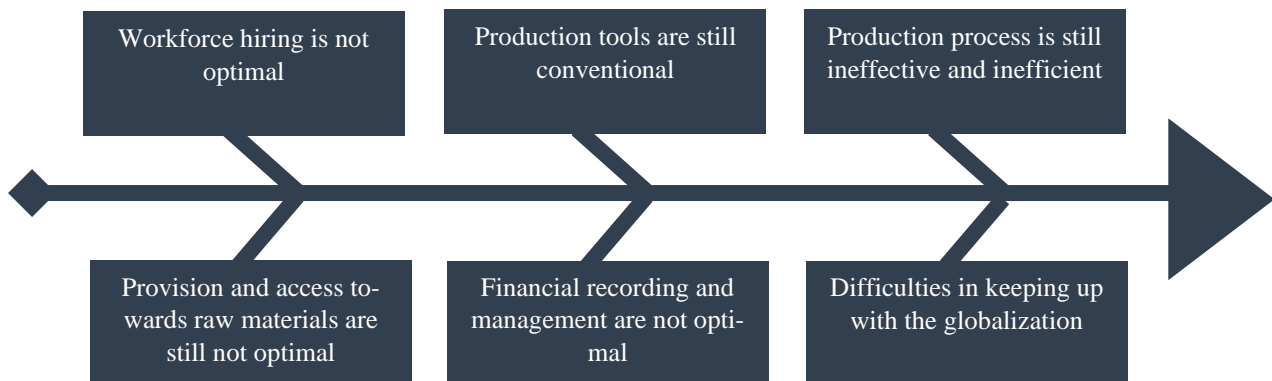


Figure 6. The Fishbone Diagram upon the issues faced by the SMEs Magelang City

Based on Figure 6 above, then it can be explained the following:

- (1) **Method:** The SMEs of Magelang City still face various challenges like the production process that is ineffective and inefficient. These issues are due to the lack of managerial skills within the SMEs actors, so that it requires some business management training.
- (2) **Manpower:** the hired workforce from the Magelang City population is not optimal. The majority of the business owners have been of old ages so that the innovation offered is not optimal. Besides, the regeneration has not worked optimally so that the creation of the new business owners are very necessary.
- (3) **Materials:** the availability and the access to raw materials for the SMEs of Magelang City has not yet been optimal. This is due to, for a long time, the supply of raw materials are still shipped from the regions around the city. It needs better supply chain planning with the help of the related stakeholders.

- (4) Machine: the majority production tools are still conventional. This happened because the existing SMEs are inherited from the previous generation and there are not many technology based tools involved. Therefore, it needs a more accurate technology implementation.
- (5) Measurement: the business management in the financial aspect has not worked optimally. There are still plenty of SMEs that conduct the financial report manually due to competence limitations. It needs upgrading training in terms of financial management for SMEs.
- (6) Mother nature: the globalization era becomes a unique challenge for the SMEs actors in Magelang City. However, the competition in the globalization era is increasingly difficult, especially to enter the export market. The majority SMEs of Magelang City still rely on the local market so that it needs an upgrading training in terms of export oriented marketing.

SMEs of Magelang City, on 2021, recorded that there are 9,204 of SMEs that are distributed across the sub-district and are presented on the following graph:

Table 2. The total SMEs in Each Sub-District of Magelang City

Sub-Districts	SMEs Group			Total SMEs
	Growing	Developing	Advanced	
Northern Kramat	223	109	0	332
Southern Kramat	247	148	0	395
Kedungsari	179	171	2	352
Potrobangsari	311	172	3	486
Wates	248	236	0	484
Cacaban	324	241	1	566
Magelang	318	211	0	529
Panjang	334	235	1	570
Gelangan	355	212	1	568
Kemirirejo	201	149	1	351
Northern Rejowinangun	452	397	1	850
Southern Rejowinangun	471	315	1	787
Magersari	500	398	1	899
Northern Jurangombo	230	169	0	399
Southern Jurangombo	240	165	1	406
Northern Tidar	446	309	3	758
Southern Tidar	204	265	3	472
Total	5.283	3.902	19	9.204

Source: Industrial and Trade Department of Magelang City, 2022

If it is illustrated in a distribution map, then the map will look like the following:

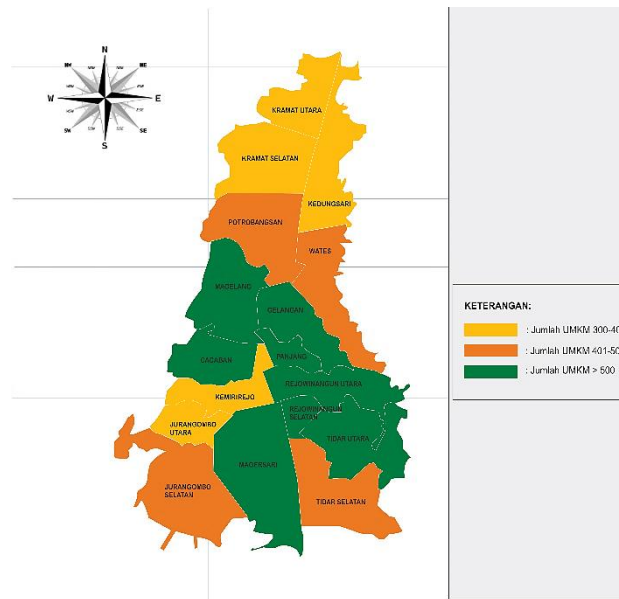


Figure 7. The distribution of the SMEs in Each Sub-District in Magelang City.

Based on figure 7, it can be described that the sub-districts that have 300-400 SMEs are Northern Kramat, Southern Kramat, Kedungsari, Kemirirejo, and Northern JurangOmbo. Then, the sub-districts that have 401-500 SMEs are the Protobangsari, Wates, Southern Jurangombo, and Southern Tidar. Meanwhile, the sub-districts that have > 500 SMEs are Magelang, Gelangan, Panjang, Cacaban, Northern Rejowinangun, Southern Rejowinangun, Northern Tidar, and Magersari.

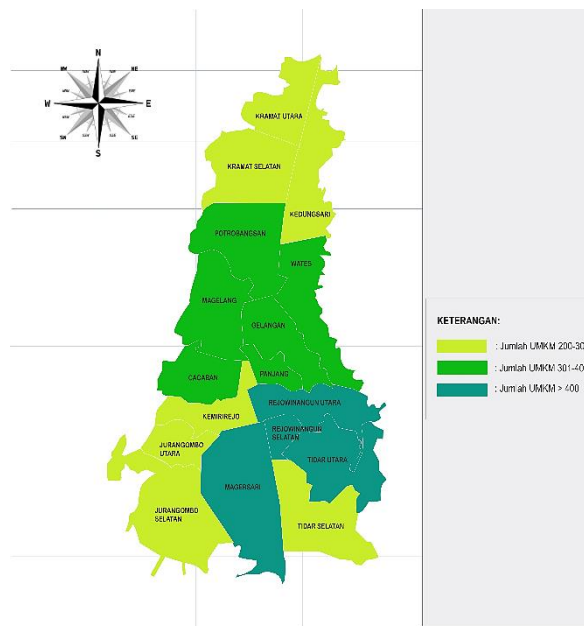


Figure 8. Distribution Map for the SMEs of Growing category of Each Sub-District

Based on the Figure 8, it can be described that the sub-districts with the SMEs of Growing Category at around 200-300 are the Northern Kramat, Southern Kramat, Kedungsari, Kemirirejo, Northern Jurangombo, Southern Jurangombo, and Southern Tidar. Then, the sub-districts with the SMEs of Growing Category at around 301-400 are the Potrobangsari, Wates, Magelang, Gelangan, Panjang, and Cacaban. Meanwhile, the sub-districts with the SMEs of Growing Category at >500 are the Northern Rejowinangun, Southern Rejowinangun, Northern Tidar and Magersari.

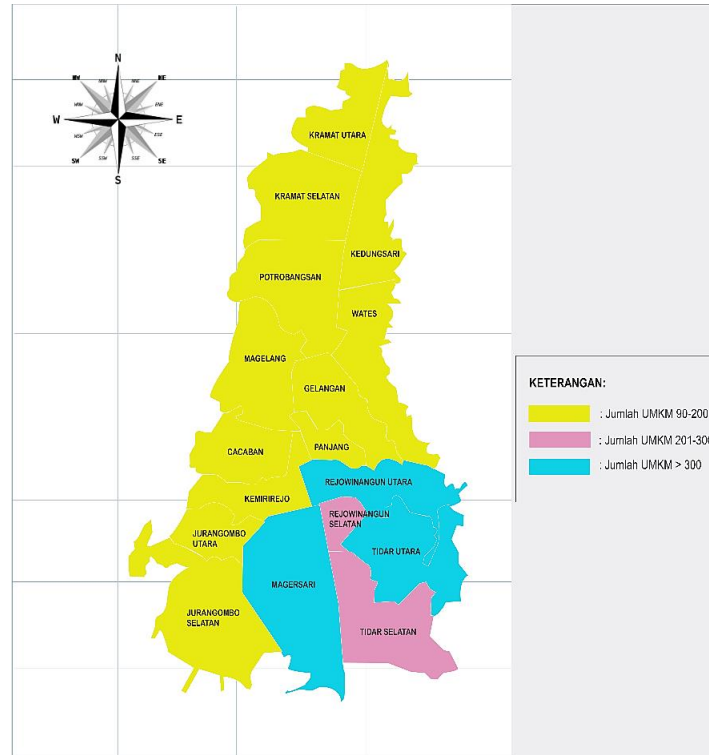


Figure 9. Distribution Map of SMEs of Developing Category of Each Sub-District

Based on Figure 9 above, it can be described that the sub-districts with the SMEs of Developing Category at around 90-200 are the Northern Kramat, Southern Kramat, Potrobangsari, Kedungsari, Wates, Magelang, Gelangan, Panjang, Cacaban, Kemirirejo, Northern Jurangombo and Southern Jurangombo. Then, the sub-districts with the SMEs of the Developing Category at around 201-300 are the Southern Rejowinangun, and Southern Tidar. Meanwhile, the sub-districts with SMEs of Developing Category at >300 are the Northern Rejowinangun, Northern Tidar and Magersari.

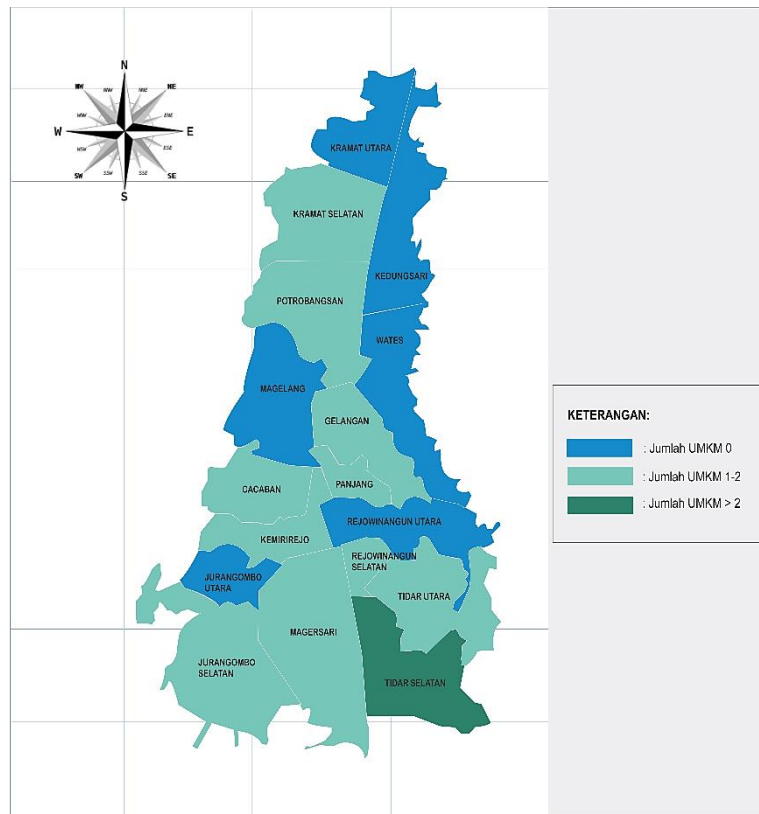


Figure 10. Distribution Map of SMEs of Advance Category of Each Sub-District

Based on Figure 10, it can be described that the Sub-District with no SMEs of Advanced category are the Northern Kramat, Kedungsari, Wates, Magelang, Northern Rejowinangun, and Northern Jurangombo. Then, the sub-districts with SMEs of Advanced category at around 1-2 are the Southern Kramat, Potrobangsang, Gelangan, Panjang, Cacaban, Kemirirejo, Magersari, Southern Rejowinangun, Northern Tidar, and Southern Jurangombo. Meanwhile, the sub-district with SMEs of Advanced Category >2 is only Southern Tidar. Based on the SMEs distribution maps, it can be concluded that the majority SMEs of Magelang City are in the category of Growing.

Analytical Hierarchy Process (AHP)

AHP analysis in this research is used to construct the SMEs Development model in Magelang City. The components used for the AHP analysis of this research are several criteria and alternatives based on the result of the literary studies, previous research and interviews with the key informants that have been predetermined and are competent in the concerned field of SMEs development. The key informants involved in this research are 13 people. Here are the results of the Analytical Hierarchy Process by using the Expert Choice 11 program.

Based on the calculation from the Analytical Hierarchy Process upon the entire criteria of the developmental model of the SMEs on Magelang City with the software of expert choice 11, the result gained are as follow:

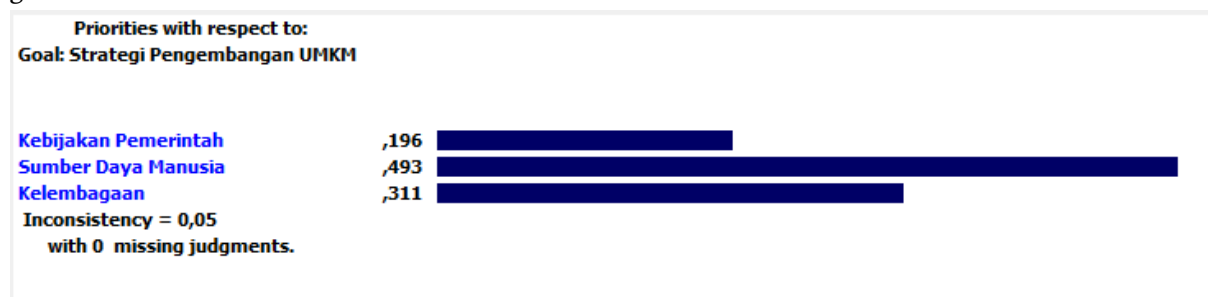


Figure 11. Output of the AHP of the Entire Criteria of the Developmental Model for the SMEs of Magelang City

Source: Processed primary data, 2022

Based on the Figure 11, it can be described that the criteria that is most prioritized in the developmental model for the SMEs of Magelang City is the criteria of Human Resource with the score weight of 0.493 or 49.3%. Then, the second prioritized criteria is the institutional factor with the score weight of 31,1%. Meanwhile, the last prioritized criteria is the governmental policy with the score weight of 19.6%. From the calculation of Analytical Hierarchy Process (AHP) with the Expert Choice 11 software gained the inconsistency ratio result of $0.05 < 0.10$, which means that the answers given by the key informants are consistent.

Based on the calculation from the Analytical Hierarchy Process upon the criteria of the Human Resources using the Expert Choice 11 software, the result gained are as follow:

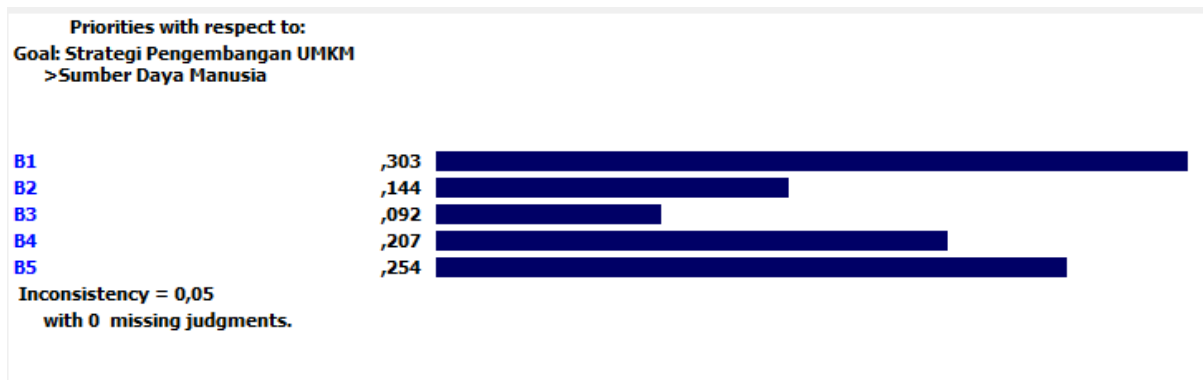


Figure 12. The Output of the AHP on the Criteria of Human Resources

Source: Processed primary data, 2022

Note:

- B1 : Motivating the SMEs actors to improve their skill and crafts in running the business
- B2 : Improvement of the managerial and business processing skills
- B3 : The sustainable education and training to the SMEs actors
- B4 : The improvement of the capacity of the SMEs actors in the utilization of the advance technology based production tools.
- B5 : Training on promotion and marketing with the utilization of the information and communication technology.

Based on the calculation result from the Analysis Hierarchy Process (AHP) on Figure 12 indicates that the most prioritized alternatives on the criteria of Human Resources is the motivation on the SMEs actors to improve the skill and the crafts in running the business with the score weight of 30.3%. Then, the second priority alternative is the training on promotion and marketing with the utilization of the information and communication technology with the score weight of 25.4%. Meanwhile, the last priority alternative in the Human Resources criteria is the sustainable education and training to the SMEs actors with the score weight of 9.2%. From the calculation result of the Analytical Hierarchy Process (AHP) with the Expert Choice 11 software, the inconsistency ratio gained is $0.05 < 0.10$, which means that the answers given by the key informants are consistent.

Based on the calculation of the Analytical Hierarchy Process upon the criteria of the Institution factor using Expert Choice 11 software, the results gained are as follow:



Figure 13. Output of AHP in the Institution Factor Criteria

Source: Processed Primary Data, 2022

Note:

- C1 : The improvement of capacity and quality of supporting specific institution of the SMEs
- C2 : The creation of the platform of the organization/association to create cooperation among the SMEs actors
- C3 : Training of management of cooperative and organization of SMEs actors
- C4 : The improvement of business partnership between the cooperative of SMEs and the business owners/investors

Based on the calculation result from the Analytical Hierarchy Process (AHP) on Figure 13, it shows that the most prioritized alternatives on the institution criteria is the improvement of the partnership between the cooperative of the SMEs with the business owners/investors with the score weight of 36.3%. Then, the second prioritized alternative is the management training of the cooperative and the organization of the SMEs actors with the score weight of 32%. Meanwhile, the least prioritized alternative is the improvement of the capacity and quality of the supporting specific institution of the SMEs with the score weight of 13.8%. From the calculation result Analytical Hierarchy Process (AHP) with the Expert Choice 11 software, the result of the inconsistency ratio gained is $0.04 < 0.10$, which means that the the answers given by the key informants are consistent.

Based on the calculation of the Analytical Hierarchy Process (AHP) upon the criteria of governmental policy with the Expert Choice 11 software, the results gained are the following:

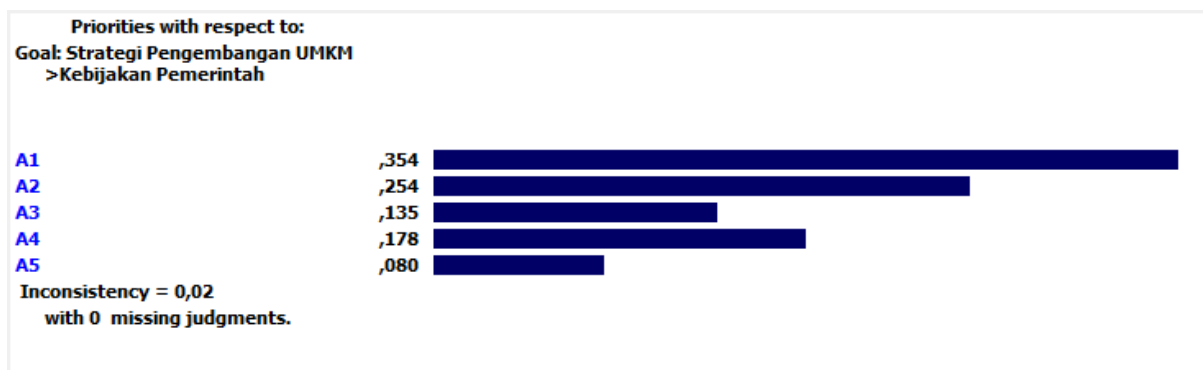


Figure 14. The Output of AHP of the Criteria of Governmental Policy

Source: Processed primary data, 2022

Note:

- A1 : Facilitating for capital needs of the business using the alternative funding model and soft loan
- A2 : Providing of the facility for information, promotion and the market guarantee for the SMEs actors
- A3 : Providing of the vital production tools aid
- A4 : Providing of ease of access for the information and communication technology to the SMEs actors
- A5 : Providing of training and help in term of legal registration for the business and for Intellectual Properties

Based on the calculation result from the Analytical Hierarchy Process (AHP) shown in Figure 14, it indicates that the most prioritized alternative on the criteria of the governmental policy is the facilitating for the capital needs using the alternative funding model and soft loan with the score weight of 35.4%. Then, the second most prioritized alternative on the criteria of the governmental policy is the Providing of the facility for information, promotion and the market guarantee for the SMEs actors with the score weight of 25.4%. Meanwhile, the least prioritized alternative is the Providing of training and help in terms of legal registration for the business and for Intellectual Properties with the score weight of 8%. From the calculation result of the Analytical Hierarchy Process (AHP) using the Expert Choice 11 software, the result of inconsistency ratio gained is $0.02 < 0.10$, which means that the answers from the key informants are consistent.

Based on the calculation from the Analytical Hierarchy Process upon the entire alternatives of the developmental model of the SMEs of Magelang City using the Expert Choice 11 gained the following result:

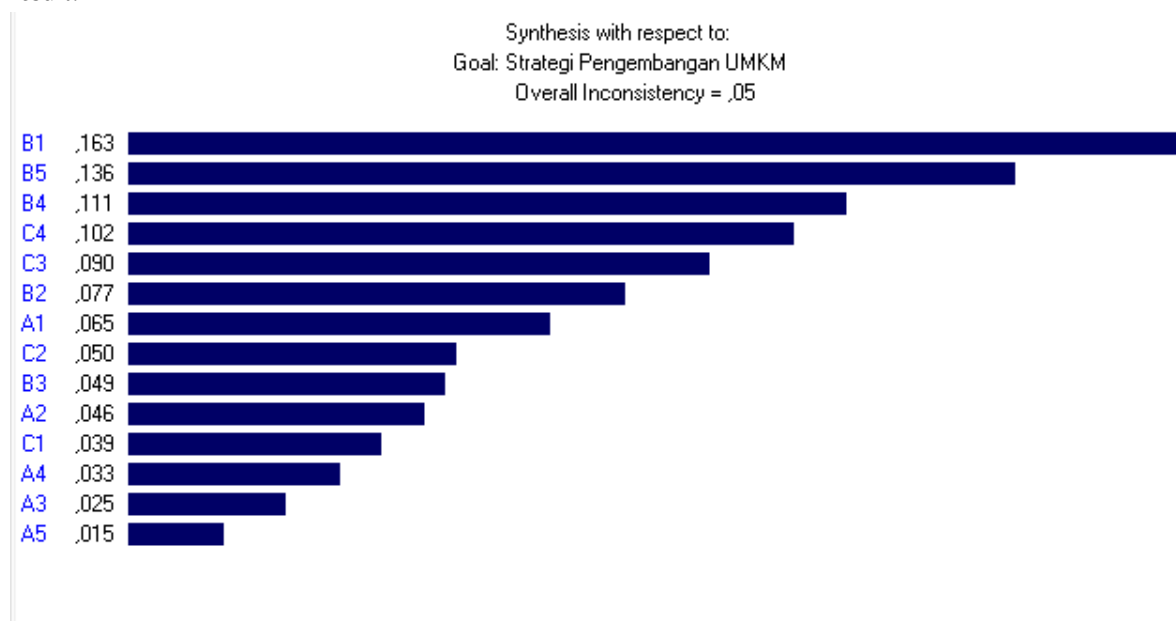


Figure 15. The Output of AHP for the Entire Alternatives

Source: Processed Primary Data, 2022

Based on the calculation result from the Analytical Hierarchy Process (AHP) shown in Figure 15, it indicates that the most prioritized alternative of the developmental model of the SMEs of Magelang City is the motivation to the SMEs actors to improve the skill and craft in running the business with the score weight of 16.3%. Then, followed by the training in promotion and marketing with the utilization of the Information and Communication Technology (ICT) on the second most prioritized alternative with the score weight of 13.6%. The least prioritized alternative is the provision of training, ease of legal registration for the business and for the Intellectual Properties with the score weight of 1,5%.

The sensitivity analysis aims to analyze the stability of the prioritized alternative by making various simulations on the prioritization of the strategic criteria. The sensitivity analysis can be done well for the criteria as well as the sub-criteria. The sensitivity analysis is related to the questions of whether the final result will always be stable if there are changes on the input, in terms of valuation or prioritization. This analysis will also see whether the changes will alter the alternatives or not. From the sensitivity analysis, the results gained are the following:

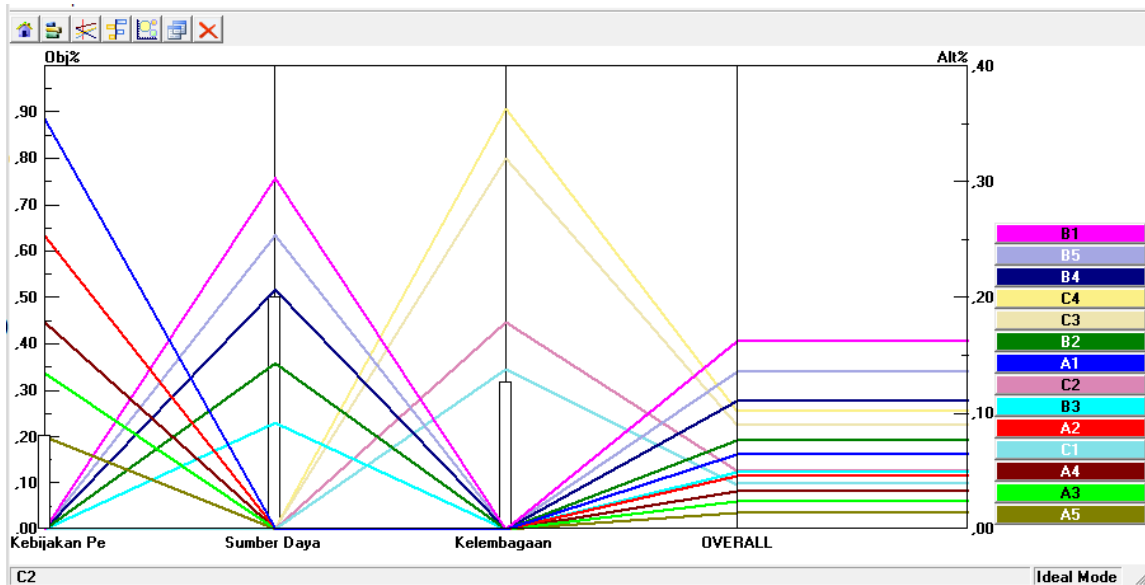


Figure 16. Initial Result before Simulation

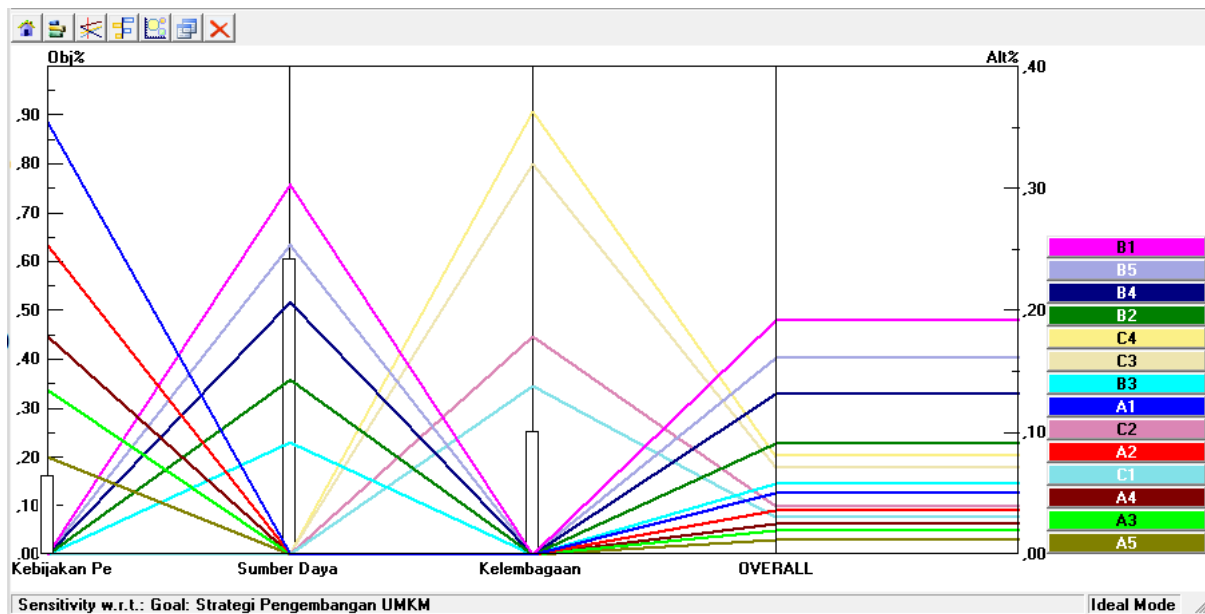


Figure 17. Initial Result after Simulation

Source: Processed Data, 2022

The initial result of the AHP calculation on the SMEs developmental model in Magelang City gained that the most prioritized alternative is the providing of the motivation on the SMEs actors to improve the skills and crafts in running the business as shown in Figure 16. Then, after the simulation is done by improving the input on the Human Resources from 49% into 59%, then the alternative of policy prioritization remains the same as shown on Figure 17. This result showed that there is a stability in the valuation.

House Model Analysis

Meanwhile, the results of the House Model Analysis in the attempt of the Development of the SMEs in Magelang City are as follow:

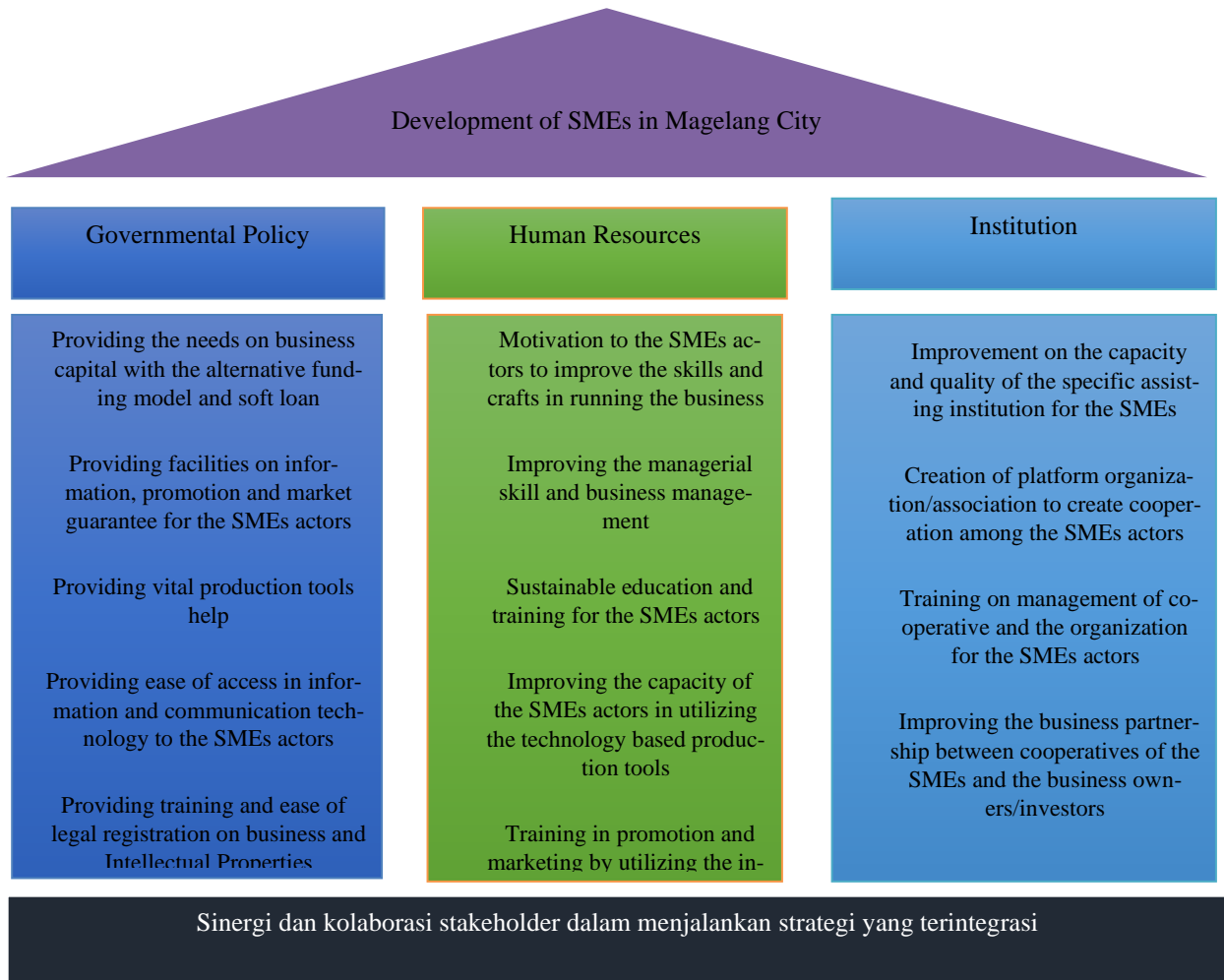


Figure 18. The House Model Analysis on the Development of SMEs in Magelang City

Based on Figure 18 above, then it can be described that the attempt on the development of SMEs in Magelang City can be focused on three aspects, the aspect of governmental policy, human resources, and institution. In the aspect of governmental policy, it needs a policy that is constructed according to the needs of the SMEs such as capital, facilities and infrastructures of the marketing, modern production tools, ease of access in information and technology as well as facility in registering the Intellectual Properties. Then, in the aspect of Human Resources, it needs various training and assistance such as the training on business management, financial management, modern technology utilization and also training on digital based promotion and marketing. Meanwhile, in the aspect of institution, the needs are on the upgrading of capacity and quality of the trainers and advisors for the SMEs, upgrading the role of the business cooperative, and the upgrading of the business partnership.

CONCLUSION

Based on the analysis done, it can be concluded that the SMEs of Magelang City are dominated by the Trading sector with the total reaching 5,537 businesses (60.15%) followed by the Non-Agricultural business in second rank with 1,971 businesses (21.41%), and the third rank and the last are the Service and Agricultural businesses, consecutively with 1,585 (17.22%) and 19,71 (1.23%) businesses in total. The SMEs actors of Magelang City with a total of 8,574 businesses still implement the local and within town marketing. Meanwhile, those who are implementing the combination market within and out of town (Central Java and Yogyakarta regions) are only totaling 374 businesses. Besides, the remaining SMEs

actors of Magelang City have started to expand their marketing network out of town and reach international markets. Based on the mapping seen from the class, it said that the SMEs of Magelang City in the Growing category are 5,283, and in the Developing category are 3,902 and the Advanced category are 19 businesses.

Not to mention, the AHP analysis shows that the most prioritized criteria in the SMEs developmental model of Magelang City is the Human Resources with the score weight 0.493 or 49.3%. Then the second priority is the Institution with the score weight of 31.1%, and the least prioritized criteria is the governmental policy with the score weight of 19.6%. The calculation result from the Analytical Hierarchy Process (AHP) shows that the most prioritized criteria in the SMEs developmental model of Magelang City is the motivation to the SMEs actors to improve the skills and crafts in running the business with the score weight of 16.3%. Then, the next criteria is the training in promotion and marketing with the utilization of information and communication technology as the second most prioritized with a score weight of 13.6%. The least prioritized alternative is the training and ease of legal registration for business and Intellectual Properties with the score weight of 1.5%.

Based on the data above, the attempts in developing the SMEs in Magelang City can be focused on three aspects, governmental policy, human resources, and institution. In the aspect of governmental policy, it needs a regulation that is constructed according to the needs of the SMEs such as capital, facilities and infrastructure for the marketing, modern production tools, ease of access in information and technology as well as ease in registration of Intellectual Properties. Then, in the aspect of human resources, it needs various training and assistance for the aspects like business management, financial management, utilization of modern technology and also digital promotion and marketing. Meanwhile, in the aspect of the institution, it needs upgrades on the capacity and quality of the trainers as well as the educators of the SMEs, optimization on the role of the cooperative as well as the business partnership.

Magelang City has an abundant potential of the SMEs that are prominent. However, not all of the SMEs actors are welfare since there are still plenty of them that fall in the category of "Growing". Therefore, the suggestion in this research is that the government ought to work on the SMEs so that they can advance by conducting various programs. One of them is creating young entrepreneurs who are creative and innovative so that they can compete in the globalization era like today.

This attempt is highly relevant with the development era happening today. The Industry 4.0 era like today demands an upgrade in the competence of the SMEs actors to gain benefit on the technology in order to support the businesses they run. SMEs also need help in the provision of modern production tools to improve their productivity and efficiency. The researcher sees that it really needs proper training and assistance for the SMEs actors to create business branding, innovative packaging, and optimization of marketing through digital media so that they can expand their segmentation as well as market target. The training and assistance for the SMEs actors from various aspects like the financial management, business management, partnership and market expansion training are also fundamental for them to learn in order to start as well as develop the optimization strategies for the SMEs.

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