STARTUP SUSTAINABILITY ISSUES: AN ANALYTICAL HIERARCHY PROCESS (AHP) METHOD AND QUANTITATIVE STRATEGIC PLANNING MATRIX (QSPM)

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Abstract

A newly started business entity has various kinds of difficulties, complexities, and risks (Trimi & Berbegal-Mirabent, 2012), the risks faced by startups include markets, products, competitiveness, employees, and finances (Paternoster et al., 2014). The purpose of this study is to analyze what factors contribute to the demise of startups in Banyumas. The participants in this study were resourceful startup actors in Banyumas. Data was collected through focus group discussions and questionnaires. Data were analyzed descriptively and qualitatively using an analytical hierarchy process (AHP), strengths-weaknesses-opportunities-threats (SWOT) analysis, and quantitative strategic planning matrix (QSPM). Based on the results of the AHP analysis, there were four main problems: background, competence, communication infrastructure, and security. Furthermore, it could be seen from SWOT and QSPM analysis that each SO (Strengths-Opportunities) strategy value was 152, WO (Weaknesses-Opportunities) was 100, ST (Strengths-Threats) was 148, and WT (Weaknesses-Threats) was 144. The conclusion was digital startup sustainability problems could be resolved by prioritizing the SO strategy. The implementation of these strategies included optimizing young workers, collaborating with supporting communities, and creating unique products. Apart from practical implications, this paper also develops literature on the factors that cause startup failure, which so far has been limited to discussing only the success factors.

Keywords: Sustainability, AHP, SWOT, QSPM, Startup Problems

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1. INTRODUCTION

The proliferation of the internet (Lasi et al., 2014) or cyber-physical systems (Lee et al., 2014) used across all industries, notably in business, indicates the 4.0 revolution's development. The industrial revolution that lacks adaptability poses a threat; conversely, if these developments can be utilized, they become opportunities (Zhou et al., 2015). This industrial revolution has an impact on changing the business model from an owning system to a sharing system. The startup is one type of company that uses sharing systems.

Startups are essential to the Indonesian economy because they absorb labor and foster the growth of creative sectors such as crafts, culinary, performing arts, and real estate, among others. Several nations promote startup business models as a means of creating jobs and fostering economic growth (Kim et al., 2018). Startups have competitive business models by offering additional value based on creativity and knowledge; these are the fundamental competencies of venture companies (Jeon, 2018).

Although the number of startups in Indonesia is rapidly increasing, the failure rate remains relatively high. It achieves 90% (Mediana, 2021). The high startup failure rate is highly regrettable because the existence of startups has huge multiplier benefits for the economy, particularly in terms of absorbing labor in the creative industry sector and utilizing local resources. A newly started business entity has various kinds of difficulties, complexities, and risks (Trimi & Berbegal-Mirabent, 2012), the risks faced by startups include markets, products, competitiveness, employees, and finances (Paternoster et al., 2014). Banyumas Regency is one of the regencies that creates numerous businesses since it contains six universities, seven high schools, seven academics, and two polytechnics. In reality, the community groups that drive startups are university students and graduates.

Research conducted by Ko and An (2019) analyzes the factors that lead to a successful startup including entrepreneurship, government encouragement, performance, and company profits. Research conducted by Abrar-ul-Haq et al. (2015) also discusses indicators that make startups easy to develop. Several main factors make a business successful, namely management skills, government support, technological advances, ease of financing, market conditions, and education. Research conducted by Kim (2012) on the use of MSME (micro, small, and medium enterprises) technology discusses the factors of success and failure of performance, there are factors in it, namely their understanding of technology, knowledge of the market, manager's background, company experience, and available resources. Another opinion expressed by Park et al. (2013) is that startup success can be seen from its ability to generate profits and its resilience in the market. Based on these reasons, research that discusses failure factors is still rarely discussed, so further exploration is needed, especially in startups. Therefore, this study investigated the problems of startup actors in the Banyumas region. Startups are vulnerable to various kinds of turmoil in the early years they are pioneered (Prohorovs et al., 2019). This study used the analytical hierarchy process (AHP), strengths-weaknesses-opportunities-threats (SWOT) analysis, and quantitative strategic planning matrix (QSPM) methods in solving problems. According to Hogan et al. (2009), AHP is a multi-criteria decision support system that acts as a tool for decision-makers on a complex problem in the form of a hierarchy. AHP has been used in various fields and has been shown to give good results (Dung et al., 2022; Wudhikarn, 2015). Various researchers have tried to combine subjective and objective weighting methods to establish the subjective limitations of single-weighting methods (Li et al., 2022; Liu et al., 2015; Liu et al., 2005; Wu & Tang, 2022).

This study employed the SWOT framework for its analysis. Examining studies that apply the SWOT analysis to a variety of management issues, including urban waste management (Srivastava et al., 2005), national strategies for sustainable energy development (Markovska et al., 2009), development of community settlements in valley areas (Buta, 2007), sustainable management and business (Lee & Sai On Ko, 2000), village development (Ommani, 2011), and sustainable tourism development (Reihanian et al., 2012). To identify the obstacles, strategic planning was required (Mallick et al., 2020); nevertheless, a SWOT analysis was utilized to analyze the location's benefits, the services it provides, and the various challenges it entails. Then, for strategic planning, researchers incorporated QSPM.

Kurttila et al. (2000) developed a hybrid technique to solve the inadequacies of the SWOT analysis, particularly in the measurement and analysis phases. QSPM is an analytical method used to objectively design alternative plans based on the identification of internal and external elements (David et al., 2017). The combination of SWOT and QSPM has a positive effect when used for ecotourism (Ghorbani et al., 2015). In contrast to previous research, this study discovered various factors of startup challenges using AHP, combined them into a SWOT analysis, and then determined critical factors using QSPM analysis. This study investigated the fundamental reasons for startup failures and formulated them in the QSPM, based on the challenges and approaches employed. Thus, this research seeks to fill the void in the discussion space on startup topics, specifically the study of failure factors that cause startups to lack resilience and cause a low level of sustainability using AHP-QSPM, especially in the Banyumas region, Indonesia.

This paper contains at least 6 sections including the first part is the introduction which introduces the urgency of this research. Section 2 is a literature review, this section has at least discusses 4 sub-points in it, namely startup, AHP, SWOT, and QSPM. Furthermore, in Section 3 of this study, we discuss the methods we used to compile this research, including the data collection methods used. After explaining the method, Section 4 of this study will describe the results found based on the processing of data obtained using AHP-QSPM. Section 5 of this study contains a discussion of the data that has been obtained. The last is Section 6 which contains conclusions from the results of studies that have been carried out along with implications and research recommendations for the future.

2. LITERATURE REVIEW

2.1. Startup

When referring to the original word "startup" can mean all businesses that are at the pioneering stage (Breschi et al., 2018). According to Blank (2013), a startup is a business model that is repetitive and measurable, large companies that have small versions are not referred to as startups. Blank (2013) also explains the characteristics of a startup, namely having a big goal, becoming a big company and having an extraordinary impact by creating its market, functioning as a company that builds a business model through repeated search and testing processes, and its funding structure is from the company's external investors. The main concept provided by startups when referring to Blank's (2013) definition is not about innovation, novelty, and technology, meaning that a startup is a business that "looks for" a solution to an uncertain demand (Skala, 2019). Startups have a role that influences economic conditions (Närvänen et al., 2021).

In recent studies, literature has begun to emerge identifying startup challenges with a qualitative approach (Van Opstal & Borms, 2023). Ariztia and Araneda (2022) investigated startups in light of environmental and economic factors. Another study was conducted by Henry et al. (2022) in investigating the motivations and identities of 57 grassroots entrepreneurs. Ostermann et al. (2021) also investigate startups in the fashion sector. Focus group discussions have also been carried out as a Toxopeus et al.'s (2021) research method to explore company experience in obtaining funding from external parties.

2.2. Analytical hierarchy process (AHP)

Multi-criteria decision-making (MCDM) is a methodology to solve complex problems (Rouyendegh & Erkan, 2012). The development of MCDM theory produces several decision-making models, one of which is the AHP (Yang et al., 2008). Saaty and Kearns (1985) developed the AHP as a decision-support method for complex problems in the form of a hierarchy. Complex problems are represented in a hierarchy that contains a multi-level structure.

The first level is the goal, then the level of factors, criteria, sub-criteria, and others until it reaches the final level of alternatives. AHP helps policymakers to simplify problems in a hierarchical form (Yücenur et al., 2011). AHP includes emotional and rational aspects in a structured approach to assist policymakers and benefit the environment which generally has abstract attributes (Sambasivan & Fei, 2008). Meanwhile, according to Haq and Kannan (2006), AHP can handle problems that are both abstract and tangible. The substance of the AHP is to compose a comparison matrix of two assessments according to the expert's view and to determine the number of reliable index weights (Zhang et al., 2022). Saaty (1990) recommended a nine-point scale that can be used in the AHP which is shown in Table 1 below.

Table 1. Saaty's nine-point scale used in the AHP process

Weight	*Interpretation*
1	Equally influential
2	Equally influential moderately
3	Quite influential
4	Enough to be very influential
5	Very influential
6	Very to very influential
7	Very influential
8	Very influential
9	Very influential

2.3. Strength-weakness-opportunity-threat (SWOT)

SWOT analysis is a supporting medium for decision-making, generally used as a means to systematically analyze the internal and external conditions of the organization (Stewart et al., 2002). Strengths and weaknesses are identified through the internal environment, while opportunities and challenges are identified through the external environment (Dyson, 2004). SWOT analysis summarizes the internal and external factors referred to as strategic factors because they can affect the future of the organization (Kangas et al., 2003). In the SWOT analysis, the factor is not measured to determine the effect of plans and strategies (Masozera et al., 2006). SWOT analysis only functions as a medium for identifying internal and external problems, without knowing the impact of the plans that have been prepared.

2.4. Quantitative strategic planning matrix (QSPM)

QSPM analysis was also used in the study. QSPM utilizes the information received in stage 1 for an objective evaluation, then it will be identified in stage 2, and at the final stage, an alternative strategy will be formulated as an objective basis for choosing the best strategy (Nasab & Milani, 2012). QSPM becomes a medium for formulating the recommended strategy. QSPM itself has several components, including:

1) key factor statements;
2) strategies to be evaluated;
3) assessment;
4) attractiveness value;
5) total attractiveness value;
6) the sum of total attractiveness value (Nasab & Milani, 2012).

3. RESEARCH METHODOLOGY

The design of this study is exploratory-qualitative using focus group discussions to develop knowledge that is still limited literature (Creswell & Creswell, 2018). The subject of this study is startup actors in Banyumas Regency, Central Java Province, Indonesia, because in Banyumas there are many various types of startups. The sampling technique in this study was purposive sampling.

Data collection was carried out using several methods, namely: a first interview with 10 respondents, consisting of 5 startup practitioners, 1 academician, 2 government employees, and 2 from the digital marketing and entrepreneurship laboratory of Jenderal Soedirman University, the purpose of the interview was to obtain in-depth information about the state of startups both opportunities and

obstacles. The second method is by distributing questionnaires to 15 respondents founders/chief executive officers (CEOs) of startups in Banyumas who experience business sustainability problems, with questionnaires expected to obtain detailed information about a phenomenon (Hine, 1996). The purpose of distributing the questionnaire is to determine the factors inhibiting the sustainability of startup businesses. The purpose of distributing the questionnaire is to determine the factors inhibiting the sustainability of startup businesses. The third method is the focus group discussion (FGD) because FGD can obtain various information (Krueger & Casey, 2014). FGD participants are 15 people who are founders and CEOs who are responsible as decision-makers. The profile of startups that are the subjects of research are as follows: startup age between 2–5 years, the number of employees ranges from 3–10 people, startup conditions, in general, are experiencing a stage of decline to almost bankruptcy, even though they have received funding from investors. Data analysis was carried out using qualitative descriptive methods and questionnaires disseminated using the AHP, because it is a flexible and simple weighting method, so it is often used in business research (Sipahi & Timor, 2010). In addition to AHP, the analytical network process (ANP) method can also be used in similar research because it can provide responses between elements in the hierarchy and can be used in complex situations. To analyze the strengths and weaknesses of startups, a SWOT analysis is used, while to evaluate alternative options objectively, a QSPM analysis is used.

4. RESULTS

Based on the results of interviews with 10 informants and FGDs with 15 startup founders/CEOs in Banyumas Regency, there are similar results about the inhibiting factors of startup business sustainability. These factors consist of internal factors and external factors described in the following points.

4.1. Problems classified

4.1.1. Internal problems

Competency issues were divided into several groups, such as financial competence, marketing competence, technical competence, and relational relationship competence. These competencies will encourage business sustainability, but if they were not considered, they could hurt financial planning, reading the direction of market movements, producing quality products, and negotiating. Several factors influence the performance of a business such as business operations, promotion techniques, and the used funding sources (Wood, 2006).

A personal background which is divided into the educational background, non-technical ability, age, and work experience is needed as a business sustainability factor. The reason is personal background affects business decision-making. Age can increase the success of a person's business and qualifications (Wicker & King, 1989). On the other hand, Cooper et al. (1994) business success is determined by education and work experience.

In addition to the internal problems of startup actors, on the other hand, there were also external problems that were found. External problems are problems that come from outside the digital entrepreneurship startup in Banyumas Regency or environmental problems.

4.1.2. External problems

Communication infrastructure is closely related to broadband, which is a transmission medium that can carry multiple signals and divide its capacity into several bandwidth channels. Problems in the communication infrastructure include the availability of broadband, broadband speed, and broadband prices. The uneven distribution of broadband in certain areas results in inaccessibility of the market, the lack of broadband speed causes the reluctance of prospective consumers to conduct transactions with startups online, and the high price of broadband has an impact on consumer perceptions when transacting online. Meanwhile, Agarwal and Wu (2015) stated that the physical infrastructure greatly affects the growth of e-commerce. In addition, Curatman et al. (2022) found that communication effectiveness can increase business loyalty. Therefore, communication infrastructure is an important aspect of business success.

Security is one of the important issues to reduce consumer concerns regarding the misuse of personal data and transaction data. This security includes the confidentiality of information, integrity, and availability of information. The problem of confidentiality of personnel data is still the cause of the reluctance of prospective consumers to conduct transactions with startups online, integrity problems often cause a mismatch of information submitted by startups or by customers with the actual situation, so it can cause trust problems between startups and their customers, and the availability of information related to the availability of information when needed. Consumer concerns are generally related to the issue of the security of customer data and the privacy of information held (Ommani, 2011; Reihanian et al., 2012).

4.2. AHP analysis

The questionnaire distributed (see Appendix) is a development based on the results of interviews and FGDs, the questionnaire was distributed to 15 respondents who are founders/CEOs of startups in Banyumas Regency. Based on data collection with questionnaires, it was then analyzed using AHP.

Based on the four factors that have been found, these factors were divided into the sub-factors shown in Table 2.

Figure 1. Startups' sustainability problems factors

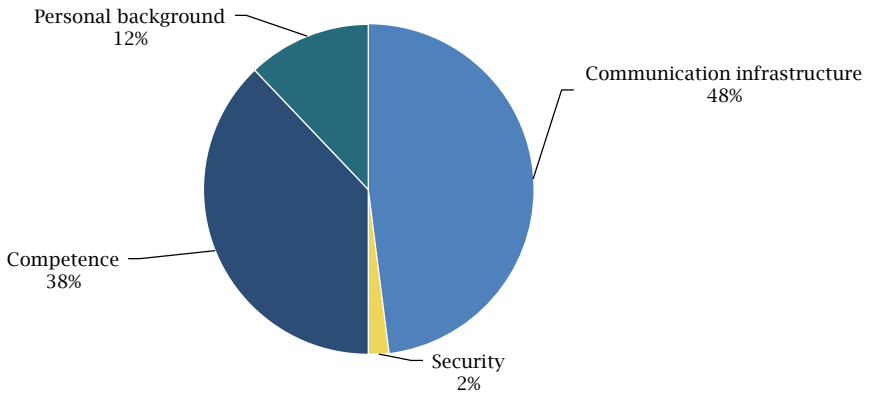

Table 2. Weight factors and sub-factors of startup sustainability problems

1st level	*Weight of the 1st level*	*2nd level*	*Weight*	*Weight of the 2nd level*	*3rd level*	*Weight*	*Weight of the 3rd level*
External	29.11	Communication infrastructure	95.97	27.93	Broadband availability	27.72	7.74
					Broadband speed	39.18	10.94
					Broadband price	33.10	9.25
		Security	4.03	1.17	Information confidentiality	29.35	0.34
					Integrity	38.04	0.45
					Information availability	32.61	0.38
Internal	70.89	Competence	75.74	53.69	Marketing competence	29.48	15.83
					Personal relation competence	23.59	12.67
					Technical competence	11.82	6.35
					Financial competence	35.11	18.85
		Personal background	24.26	17.20	Working experience background	35.45	6.10

4.3. SWOT analysis

Before analyzing the SWOT, the researcher analyzed the internal and external factors shown in the internal factor evaluation matrix (IFEM) and external factor evaluation matrix (EFEM) tables. The calculation results for the two matrices are shown in Table 3.

Table 3. Internal and external factor evaluation matrix

Internal factor evaluation matrix (IFEM)				*External factor evaluation matrix (EFEM)*			
Internal strategic factors	*Weight*	*Rating*	*Score*	*External factors strategic*	*Weight*	*Rating*	*Score*
Strengths				*Opportunity*			
1. There was a high number of youths whose age was younger than 30 years old.	0.15	4	0.6	1. There was a limited chance.	0.142	3.7	0.528
2. Startup was supporting the community.	0.15	3.5	0.525	2. There was a lot of regional wealth.	0.19	3.3	0.628
3. There were developed startup uniqueness.	0.2	4	0.8	3. The advance in technology development.	0.176	4	0.704
Weaknesses				*Threats*			
1. There was various background of startup actors.	0.15	2.5	0.375	1. There was a high number of startups from outside Banyumas.	0.19	2.3	0.438
2. There was insufficient competence.	0.2	2.6	0.52	2. There were ideas of plagiarism from startups outside Banyumas.	0.157	2.1	0.33
3. There was a lack of government support from the Juridical aspect.	0.15	1.9	0.285	3. There was still a lack of societal trust in online transactions.	0.142	2.7	0.385
Total	1		3.105	Total	1		3.0157

At this stage, the results of the internal factors evaluation matrix analysis showed results at 3.105, which meant that from the internal environment side it was quite good for startup actors to develop their products, while in the external factors evaluation matrix analysis 3.0157, it also showed quite good results and it was known that from external factors, the two analyzes were shown in Table 3.

Following the results of the analysis on the IFEM and EFEM matrices, the next step is to determine the results of the SWOT analysis obtained based on the results of the focus group discussions that have been carried out, the results of the SWOT analysis are shown in Table 4.

Table 4. SWOT analysis result

EFAS \ IFAS	*Strengths (S)*	*Weaknesses (W)*
	1. A high number of employees who were younger than 30 years old. 2. Startup supporting the community. 3. Uniqueness of the products.	1. Various background. 2. Low competence. 3. No regulation.
Opportunity (O) 1. A Low number of competitors from fellow regions. 2. A lot of regional wealth. 3. Advance technology development.	*SO (Strengths-Opportunities) strategy* 1. Maximizing young employees to make innovation and collaboration. 2. Making supporting the community as a means of cooperation with the government in utilizing the regional wealth. 3. Creating unique, renewable, and sustainable products as technology develops.	*WO (Weaknesses-Opportunities) strategy* 1. Utilizing technological developments to recruit employees with an even distribution of competencies and backgrounds. 2. Plotting employees according to their capacity and background in various startup sectors. 3. Adjusting to national regulations regarding startups to be more organized, and better known, as a real support for those in a market that is still wide open.
Challenges (T) 1. High number of competitors from outside Banyumas. 2. Risk of ideas plagiarism. 3. Low community trust.	*ST (Strengths-Threats) strategy* 1. Educating local startup actors to create unique products. 2. Guarantee trusted transactions with the assistance of the Banyumas startups community. 3. Patenting products from a law perspective that are accommodated by the community.	*WT (Weaknesses-Threats) strategy* 1. Taking advantage of different backgrounds by understanding competitors' backgrounds. 2. Focusing on ideas building competence. 3. Involving people as startup ambassadors. 4. Implementing national regulations in developing products so as not easy to be imitated by similar brands.

4.4. QSPM analysis

The last analysis used the QSPM which was shown in Table 5, the analysis was based on the analysis at the input stage and the previous SWOT analysis. By applying this matrix, startup owners can determine the right strategy based on the results of the research that has been done. Decision-making on the recommended strategy is the authority of startup owners in Banyumas. The owner is the person in charge and is the most responsible for all company activities.

Table 5. QSPM analysis

Success factors	*Rating*	*Alternative strategies*							
		SO		*WO*		*ST*		*WT*	
		AS	*TAS*	*AS*	*TAS*	*AS*	*TAS*	*AS*	*TAS*
Strength									
1. Age of human resource	4	4	16	2	8	4	16	4	16
2. Supporting the community	3.5	4	16	2	8	3	12	3	12
3. Product uniqueness	4	4	16	2	8	4	16	3	12
Weakness									
1. Background gap	2.5	3	12	3	12	2	8	2	8
2. Low competence	2.6	2	8	2	8	2	8	2	8
3. No regional regulations	1.9	4	16	3	12	3	12	2	8
Opportunity									
1. Low fellow competitors	3.7	3	12	3	12	2	8	3	12
2. Regional wealth	3.3	2	8	3	12	3	12	3	12
3. Regional development	4	3	12	2	8	3	12	3	12
Threat									
1. Outsider competitors	2.3	3	12	1	4	3	12	4	16
2. Ideas plagiarism	2.1	3	12	1	4	4	16	3	12
3. Society trust	2.7	3	12	1	4	4	16	4	16
Total value TAS			152		100		148		144

Note: AS — Attractiveness score, TAS — Total attractiveness score.

5. DISCUSSION

This section discusses from calculation results shown in Figure 1, it can be seen that communication infrastructure was the biggest problem, followed by competence, personal background, and security. The high problems in communication infrastructure were the most significant obstacles, from the availability of broadband which made the market difficult to reach, inadequate speed made people reluctant to transact, and the price of equipment that was relatively expensive was also a factor that made people reluctant to transact online. Although the product was unique and useful, with the lack of adequate distribution media, the product was difficult to sell. The competency factor was also a problem that dominated the obstacles in the sustainability of start-ups. Competence is related to financial, marketing, technical, and relational aspects. Lack of competence will hinder the company both in planning on the financial aspect, the ability to read market opportunities, produce quality products, and build a company network.

Based on Table 2, it can be seen that the five sub-factors at the third level weighting which were the most dominant obstacles to the sustainability of the top 3 include internal factors consisting of financial competence with a weight of 18.85,

marketing with a weight of 15.83, and relational relationships that were not optimal with a weight of 12.67. This happened due to the differentiation of education level, work experience, and age which caused a negative effect on competence.

Furthermore, on external problems, two problems dominated such as the broadband speed with a weight of 10.94 and, broadband prices with a weight of 9.25. This could happen because of the uneven distribution of signals in various regions, causing people's reluctance to use online media, and the high price of broadband was caused by the acceleration of economic development and inadequate and uneven distribution of income. These problems caused social inequality.

Based on the results of the IFEM and EFEM values shown in Table 3, it can be seen that in terms of the internal environment, it is sufficient and the external conditions are also quite good. In the SWOT analysis, the researchers divided the results of the questionnaire into two groups. The first group was internal which consisted of strengths and weaknesses, while the second group was external which included opportunities and challenges in the Banyumas startup environment. The results of the SWOT analysis are shown in Table 4.

The strengths of startups in Banyumas include:

- startups in Banyumas were dominated by youth, so in product development, both goods and services had high creativity and innovation; this can be seen from the majority of respondents to the questionnaire whose ages were younger than 30 years old;
- there was a startup community that could accommodate startup actors so the existence of this community encouraged actors to help each other;
- the uniqueness created by the growing startup was reflected in the various types of startups, both in helping household needs, education, repairs, financial technology, and so on.

The weaknesses of startups in Banyumas include:

- the varied backgrounds of startup actors, so that many of them were unable to continue the startups developed due to lack of training, knowledge, and capital;
- competencies that still needed to be improved, the lack of skills possessed by the actors will limit the development of the startup itself, especially in the financial, market, technical, and relational aspects;
- local government support for the development of startups was not yet concrete for instance the lack of support both from the juridical aspect and the provision of adequate and equitable infrastructure to all of Banyumas areas.

In addition to the internal factors, SWOT analysis has a function to identify the external environment consisting of opportunities and challenges (Dyson, 2004). There were several startup opportunities in Banyumas.

1. Competition was still limited, so the opportunity to innovate and reach the market was still wide open.
2. The wealth of tourism aspects in the Banyumas area opened startups to develop the tourism and creative economy aspects by utilizing the various tourism and cultural diversity owned by Banyumas.
3. The rapid development of technology used by the people of Banyumas, of course, with the development of technology used by the community can be utilized by accelerating the development of various digital-based startup platforms.

The last aspect was the threat, not without reason that the startups that are developed also have threats, including:

- competition with similar startups that came from outside the Banyumas area, especially those startups that were much more developed than those available in Banyumas; the development of startups from outside Banyumas made people more confident than startups that have just been developed;
- the plagiarism of startup ideas from outside Banyumas; plagiarism of ideas can be seen from the similarity of products, methods, and the market; it encourages unhealthy competition during startup development;
- lack of public trust in online-based transactions, with this phenomenon, of course limiting the development of startups public confidence in online transactions is still very low.

Based on the calculation results on the QSPM shown in Table 5, it can be seen that each strategy value is SO = 152, WO = 100, ST = 148, and WT = 144. Therefore, the right strategy for startup development in Banyumas is the SO strategy, including:

- maximizing young employees for innovation and collaboration;
- creating supporting communities in collaboration with the government in utilizing regional wealth;
- creating unique, renewable, and sustainable products in line with technological developments.

In contrast to previous research that has often been done regarding the analysis of startup success factors, factors that can support startup success include the business model, resources including the team involved, training, and others (Abrar-ul-Haq et al., 2015; Ko & An, 2019; Park et al., 2013). Considering that this startup was a very risky and complex business at the beginning of its establishment, this research tries to explore other things, namely failure factors. So far the failure factor has been discussed by Kim (2012) in the context of MSMEs, while this research focuses on startup failure. We analyze the inability of startups to maintain the continuity of their business through questionnaires and focus group discussions with eight startups across the Banyumas area.

6. CONCLUSION

Based on the findings of research conducted on 15 respondents to startup founders in Banyumas, it can be seen that there are main factors that challenge startup sustainability, the four factors include competence, background, communication infrastructure, and security. These four factors are derived from perceived internal and external factors. from startup owners. Communication infrastructure and security issues represent external variables, while competency and background issues represent internal aspects. The analysis process is carried out using AHP where the four factors above are obtained with external conditions (communication infrastructure and security) being the main problems for startup owners in running their businesses. Then in

the SWOT analysis, the internal and external environmental conditions when the startup was running were considered good enough which implies that with these conditions startup owners can develop their businesses. Meanwhile, in the analysis using QSPM, it can be seen that to overcome startup sustainability problems, it is by implementing an SO strategy.

The recommended strategy from this research is SO by maximizing startup young employees. This means that every startup that is established is advised to recruit more young people in providing their work, besides that for startup owners it is necessary to prioritize the involvement of youth in every solution to existing business problems so that the businesses that are built can have a longer life and be able to compete with competitors who have been around for a long time. The involvement of youth does not stop there, but startup owners are advised to intensify training for their young workers, with training and personal development it is hoped that these workers will have better competence than other workers considering that the role of youth from this research be the right strategy to run. The involvement and development of youth capabilities can include the development of technical capabilities such as the ability to operate software and hardware, while non-technical capabilities can be focused on aspects of leadership, collaboration, innovation, and cooperation so that startups can build strength from internal factors according to the strategy suggested in this research.

In addition to developing young workers, startups can also develop themselves by collaborating with similar communities, so it is hoped that they can get various kinds of input and information regarding market conditions in certain areas, supporting each other's colleagues which engenders mutual support for each other. The next implication is that support from a startup-like community that has been developed is also needed to create a unique product so that each startup has its value which is difficult to imitate with other competitors. This unique product development can be done by applying the concept of open innovation supported by involving youth in designing products built from each startup. Unique products should also be patentable so that startup owners can reduce their worries over product plagiarism outside, by patenting their products, of course, startup owners can more freely raise the price of their products and more easily expand the market.

Based on the analysis of startup sustainability issues, it is necessary to pay special attention to the competence, background, communication infrastructure, and safety factor of the two business associations and encourage the government to provide aspects of legal protection for digital startup actors. The problems of digital startup actors such as low competence and diverse backgrounds. These problems can be overcome by coaching clinics, apprenticeships, training, and developing business skills. Solving problems from the startup's internal scope can have an impact on startup owners to improve their respective business achievements, this is in line with the implications for business owners.

Unequal infrastructure aspects need proper assistance from the government in collaboration with the private sector in distributing internet networks so that they can reach all areas, especially those far from urban areas. Giving more attention to infrastructure conditions makes it easier for startups to expand their business while continuing to increase competitiveness in the external environment, this condition is in line with the safety factor which is still uneven, such as the absence of special protection for startup consumers in using the products being sold and startup owners in protecting their business, there needs to be recognition like conventional businesses in general so that it makes it easier for startup actors to need capital loans from banks in the local area. Subsequent research is suggested to be able to carry out similar explorations in other countries because this discussion is only on the regional scope so if new things have been found in other studies, the findings in this study can be collaborated and can then be realized in empirical studies involving founders, investors, and the startup user.

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APPENDIX. QUESTIONNAIRE

Question 1: From the problems below, which do you think are the inhibiting factors for the sustainability of startups in Banyumas Regency?

Issues	***9***	***8***	***7***	***6***	***5***	***4***	***3***	***2***	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***Issues***
External Issues																		Internal Issues

Question 2: From the external issues below, which do you think are the inhibiting factors for the sustainability of startups in Banyumas Regency?

External issues	***9***	***8***	***7***	***6***	***5***	***4***	***3***	***2***	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***External issues***
Communication infrastructure																		Security

Question 3: From the communication infrastructure problems below, which do you think are the factors inhibiting the sustainability of startups in Banyumas Regency?

Communication infrastructure problems	***9***	***8***	***7***	***6***	***5***	***4***	***3***	***2***	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***Communication infrastructure problems***
Broadband availability																		Broadband speed
Broadband availability																		Broadband prices
Broadband speed																		Broadband prices

Question 4: From the security issues below, which do you think are the factors inhibiting the sustainability of startups in Banyumas Regency?

Security issues	***9***	***8***	***7***	***6***	***5***	***4***	***3***	***2***	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***Security issues***
Information confidentiality																		Integrity
Information confidentiality																		Information availability
Integrity																		Information availability

Question 5: From the internal issues below, which do you think are the inhibiting factors for the sustainability of startups in Banyumas Regency?

Internal issues	***9***	***8***	***7***	***6***	***5***	***4***	***3***	***2***	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***Internal issues***
Competence																		Personal background

Question 6: From the competency issues below, which do you think are the inhibiting factors for startup sustainability in Banyumas Regency?

Competency issues	***9***	***8***	***7***	***6***	***5***	***4***	***3***	***2***	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***Competency issues***
Marketing competency																		Personal relations competency
Marketing competency																		Technical competence
Marketing competency																		Financial competency
Personal relations competency																		Technical competence
Personal relations competency																		Financial competency
Technical competence																		Financial competency

Question 7: From the personal background issues below, which do you think are the inhibiting factors for startup sustainability in Banyumas Regency?

Personal background issues	***9***	***8***	***7***	***6***	***5***	***4***	***3***	***2***	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***Personal background issues***
Work experience background																		Age background
Work experience background																		Non-formal skills background
Work experience background																		Educational background
Age background																		Non-formal skills background
Age background																		Educational background
Non-formal skills background																		Educational background