Analysis of Food Street Management Using the RIS3 Method and BPMN Model to Enhance the Competitiveness of Small and Medium Enterprises

Mohamad Iman Rachmadi, Lukmandono*
Master of Industrial Engineering, Institut Teknologi Adhi Tama Surabaya

*Email: lukmandono@itats.ac.id

DOI: https://doi.org/10.31284/j.jtm.2025.v6i2.7502
Received April 17th 2025; Received in revised May 21st 2025; Accepted June 8th 2025; Available online July 9th 2025

Abstract

This research analyzes the management of culinary tourism centers, specifically the Sentra Wisata Kuliner (SWK) Kandangan in Surabaya, using Regional Innovation Strategy for Smart Specialisation (RIS3) and Business Process Modelling Notation (BPMN). The study addresses operational inefficiencies and low visitor engagement, including inventory mismatches, rapid food spoilage, cleanliness issues, and limited payment options. The objective was to identify regional strengths, innovation opportunities, and optimal business processes to enhance competitiveness and efficiency. Employing qualitative methods through case study analysis, data was gathered via field observations, stakeholder interviews, and Focus Group Discussions (FGDs) involving SMEs, government officials, and industry experts. RIS3 facilitated strategic analysis by prioritizing regional strengths, identifying strategic priorities, and engaging stakeholders in entrepreneurial discovery processes. Concurrently, BPMN visually mapped and optimized existing business processes to improve operational clarity. Findings revealed that integrating RIS3 and BPMN significantly enhanced SWK Kandangan's operational management. The combined methods aligned human resources, production, and financial operations with innovative practices, resolving identified challenges. Consequently, visitor engagement improved, optimizing business sustainability. This study provides valuable insights into applying RIS3 and BPMN methods effectively in regional culinary tourism management, thus supporting SME competitiveness and regional economic growth.

Keywords: *BPMN, Culinary Tourism, RIS3, SMEs Competitiveness*

1. Introduction

Tourism is one of the key sectors capable of driving the economy of a region, with cuisine serving as the primary attraction for tourists [1]. Culinary tourism is not merely a supporting activity for tourism but has evolved into a primary attraction capable of drawing the interest of both domestic and international tourists. As a tourist city, Surabaya is fully aware of the importance of developing the culinary sector as an integral part of efforts to enhance the creative economy [2], [3]. One of the strategies adopted by the Surabaya City Government to develop local cuisine is through the establishment of Culinary Tourism Centers (SWK), which are professionally managed locations that organize street vendors and Micro, Small, and Medium Enterprises (MSMEs) [4], [5].

However, on-the-ground realities reveal that culinary tourism centers, particularly the Kandangan SWK, face various operational challenges that hinder the achievement of their objectives. Issues such as discrepancies between recorded inventory and actual stock levels, food spoilage or expiration, and customer complaints regarding cleanliness and limited modern payment options pose serious challenges [6], [7], [8]. This underscores the need for significant changes in the management and operations of the area.

Previous studies by [9] indicate that the Regional Innovation Strategy for Smart Specialisation (RIS3) is effective in leveraging regional economic potential by aligning local strengths with high-value commercial products. RIS3 provides a clear strategic framework for prioritizing innovation based on regional potential and a participatory approach involving stakeholders.

Additionally, business process modeling using the Business Process Modeling Notation (BPMN) method has proven effective in enhancing operational management efficiency, reducing management errors, and ensuring all business processes run seamlessly and efficiently [10].

2. Method

(1). RIS3 (*Regional Innovation Strategy for Smart Specialisation*)

RIS3 highlights the role played by knowledge, technology, and innovation in economic development and social welfare [11]. RIS3 is designed as a means to transform R&D into new policy creation, thus fundamentally focusing on the economic returns generated by R&D [9]. RIS3 encourages collaboration between the public sector, the private sector, and research institutions to focus on areas with high innovation potential, known as smart specialisation. RIS3 focuses on the use of existing local resources and strengths to create sustainable competitive advantages. This process involves an in-depth analysis of the strengths and weaknesses of the region, as well as innovation opportunities that can be developed, thereby creating a strategic map that optimally utilizes local potential. RIS3 also emphasizes the importance of stakeholder participation in the "entrepreneurial discovery process," which is the process by which innovative ideas are identified and developed collectively [12].

RIS3 not only encourages innovation but also builds a stronger ecosystem at the regional level, involving government, industry, academia, and the community to work together [9]. Collaboration between these sectors aims to accelerate the transfer of knowledge, technology, and innovative practices needed to achieve regional development goals. With close collaboration between various parties, RIS3 not only focuses on existing products and services but also strengthens the foundations of a more sustainable and adaptive economy that can respond to market changes and community needs [13].

In recent years, several studies (e.g. [14] in Portugal, [15] in Ukraine, [16] in Bulgaria, [17] in Spaih) have emerged to provide empirical evidence on the benefit of the smart specialisation principles. The implementation of RIS3 in economies with better R&D systems can generate new and intensive production activities with strong scientific components. On the other hand, less developed economies should focus their R&D strategies on areas where they already have operating industries [9], One of the main characteristics of the RIS3 approach stems from its territorial focus, both at the national and regional levels.

(2). BPMN (*Business Process Modelling Notation*)

Business Process Modeling Notation (BPMN) is a graphical notation for drawing business processes and was proposed as a standard notation for drawing models that can be understood by different business users [18]. BPMN aims to bridge the communication gap that often occurs between the design and implementation of business processes. Its language is similar to other informal notations such as UML activity diagrams and extended event-driven process chains [19]. Process modeling is currently mostly a graphical representation of business processes, in the order in which certain activities must be performed and what inputs and outputs are required for the process to function properly.

Business Process Model and Notation (BPMN) is a form that can describe a business process diagram based on a flowchart method, which is then arranged into graphical models of business activities where processes and flows can describe the sequence of the process [20]. The primary purpose of process modeling is to improve the efficiency and effectiveness of all processes and some activities. This modeling can help analyze problems that arise in business processes. In this case, software is needed to describe and model business processes, namely the Bizagi application [21]. Bizagi offers tools for process modeling using BPMN standards, allowing users to visually design workflows, define tasks, and manage process flows [22], [23].

Research on the implementation of BPMN in business process analysis has also shown that this graphical notation is effective in identifying potential improvements in business processes, which

ultimately contributes to improving the overall performance and effectiveness of organizations. The effectiveness of this has been proven in studies conducted by [24] in the field of engineering, [25] in the healthcare sector, [26] in community service activities, [27] in IoT process modeling. BPMN, recognized as the global standard for business process modeling, uses graphic notation to visually represent the sequence of activities in a process. By utilizing BPMN, organizations find it easier to model, understand, and analyze every aspect of their business processes. Furthermore, BPMN enhances operational efficiency and communication among teams, allowing stakeholders at various organizational levels to have a shared understanding of existing workflows.

3. Results and Discussion

(1). Analisis RIS3 (*Regional Innovation Strategy for Smart Specialisation*)

An analysis of the Regional Innovation Strategy for Smart Specialization (RIS3) was conducted to identify and determine the strategies to be implemented as efforts to develop the Kandangan Culinary Tourism Center (SWK) in Surabaya. The steps in the analysis of the Regional Innovation Strategy for Smart Specialization (RIS3) consist of:

(a). Context and Regional Strength Analysis (SWOT Analysis)

Tabel 1. Results of Context and Regional Strength Analysis (SWOT Analysis)

	Strength	***Weakness***
Threat	a. Extending operating hours b. Improving guidance and training for SME traders	a. Diversify sources of income and build economic resilience b. Further training to improve product and service quality
Opportunity	*a.* Collaborate with e-commerce platforms b. Integrate digital payment technology c. Hold culinary events or festivals	*a.* Improvement of facilities through collaboration with e-commerce platforms b. Improving technology accessibility for SME traders

The main opportunities for SWK Kandangan include the potential for an increase in visitor numbers post-pandemic, the adoption of digital technology and online payments, and the hosting of culinary festivals to expand the market. Meanwhile, significant threats include competition from other culinary centers, dependence on external policies, limited human resource competencies, and public perception that SWK Kandangan is a place for the lower-middle class.

(b). Identification of Strategic Priorities

Based on context analysis and regional strengths, the strategic priorities for the development of SWK Kandangan have been determined in four main aspects: (1) development of the culinary tourism sector through the organization of regular events and festivals, (2) integration of digital payment technology and e-commerce, (3) improvement of infrastructure and supporting facilities, and (4) collaboration with educational and training institutions to improve human resource capacity.

(c). Development Strategy

The development of an annual culinary festival has become a regular agenda involving a special team that collaborates with various digital platforms to increase visibility and ease of transactions. The digitization of MSMEs is carried out through the implementation of digital payments such as QRIS and e-commerce platforms supported by intensive training for MSME traders. Renovation and expansion of facilities and improved cleanliness are also carried out to ensure visitor comfort. Additionally, collaboration with the education sector through regular training and mentoring programs helps improve managerial skills, financial management, and digital marketing among SME operators.

Previous studies have shown that development strategies are in line with findings from earlier research. Studies such as those conducted by [28] indicate that culinary festivals can increase the visibility of destinations and drive economic growth. In addition, the integration of digital payment

technology and e-commerce, which was also identified in the RIS3 analysis, has proven effective in expanding markets and improving the operational efficiency of MSMEs, as found in study [29].

Improvements in infrastructure and facilities in SWK Kandangan are also in line with research highlighting the importance of facility quality in enhancing visitor satisfaction and business sustainability, as stated by [30]. Furthermore, collaboration with educational institutions to enhance human resource capacity in management and culinary skills aligns with study [31] which indicates that training and education significantly contribute to the performance and innovation of SMEs.

(d). Stakeholder Involvement

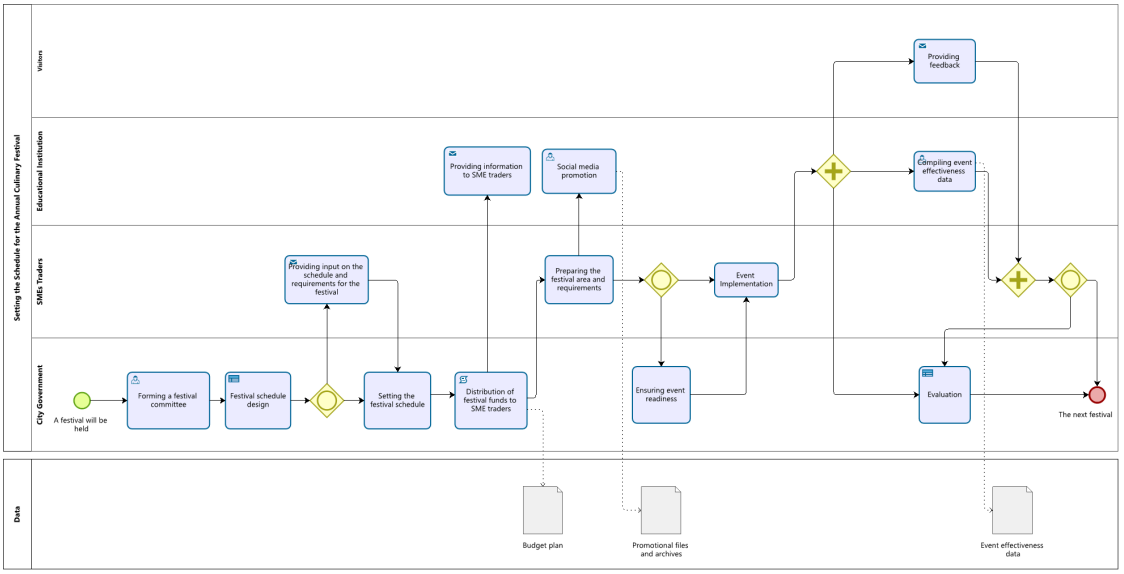
The success of this strategy is supported by the active role of key stakeholders, (1) The Surabaya City Government is responsible for providing policies, funding, and supporting facilities, (2) MSMEs actively participate in training, implement digitalization, and contribute to festival events, (3) Educational institutions are responsible for providing training, mentoring, and research for digitalization development, and (4) Local communities and visitors are actively involved in providing feedback and assisting with informal promotion. In the implementation plan, it is assumed that all stakeholders involved will synergize and collaborate effectively to enhance the competitiveness of MSMEs.

(e). Sustainability Plan

To ensure the sustainability of the Kandangan culinary tourism area development, the following strategic steps are taken: (1) Securing long-term funding through collaboration between the government, digital platforms, and the private sector. (2) Conducting regular monitoring and evaluation to ensure the effective implementation of strategies, with clear indicators such as visitor numbers and satisfaction levels. (3) Continuously strengthening human resource capacity through regular training, mentoring, and career development for SMEs. (4) Maintaining and improving infrastructure consistently, in line with the growing number of visitors. (5) Establishing a clear and coordinated management structure to ensure that all parties can perform their duties optimally.

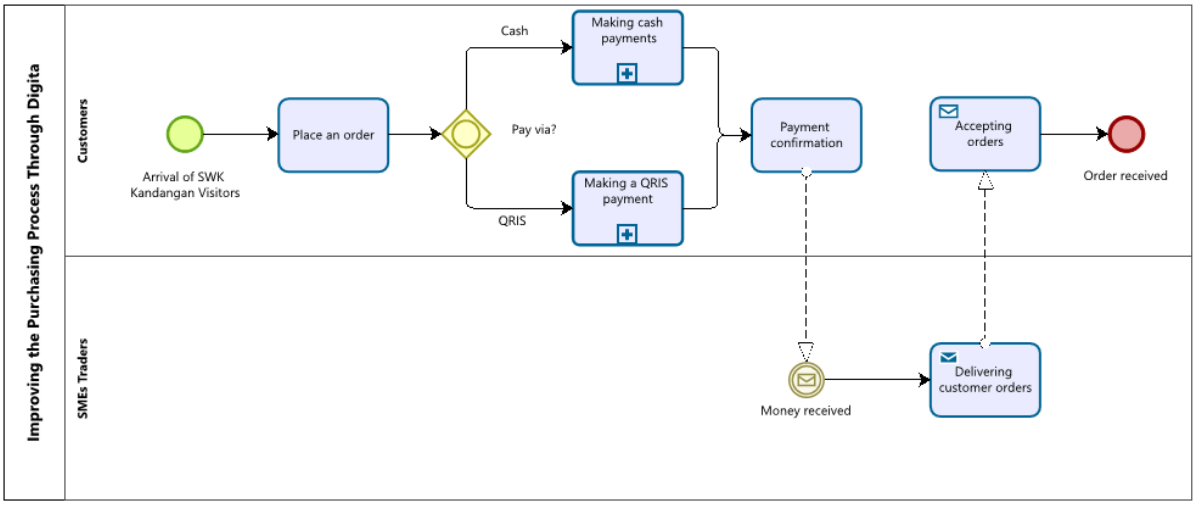
(2). Business Process Modeling Using Business Process Modeling Notation (BPMN)

Based on the results of the RIS3 analysis, a development strategy was obtained for developing the Kandangan Culinary Tourism Center (SWK Kandangan), which will be described and modeled using the BPMN (Business Process Modeling Notation) model. This BPMN model illustrates the flow and interactions between various processes involved in culinary event marketing, food ordering with QRIS, digital marketing, as well as facility management and human resource training at the Kandangan culinary tourism center as a form of development strategy.



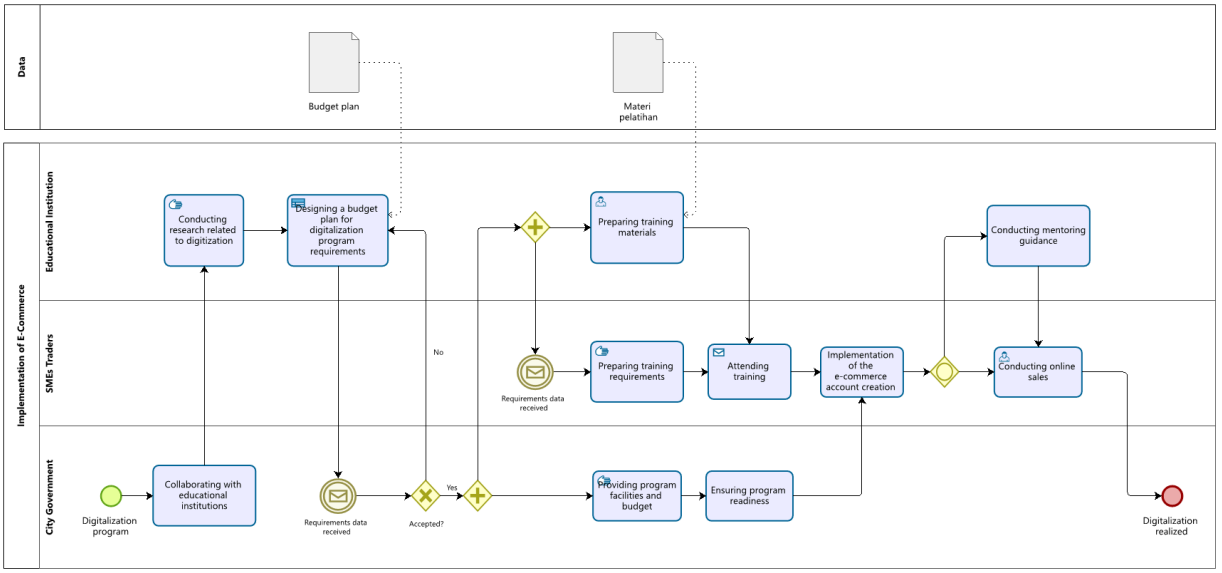
Picture 1. Strategy Development Implementation Design Model 1

Strategy 1 begins with the formation of a festival committee by the City Government consisting of various stakeholders, followed by the determination of the festival schedule based on input from SME traders to ensure relevance to market needs. Once the schedule is approved, educational institutions conduct outreach to SME traders to encourage participation and promote the event digitally through social media to increase visibility. The government also provides transparent operational funds that SME traders can use to prepare facilities, raw materials, and booth requirements. The event is carried out with intensive coordination by the committee, followed by an evaluation of effectiveness by educational institutions to ensure improvements in the quality of future festivals.



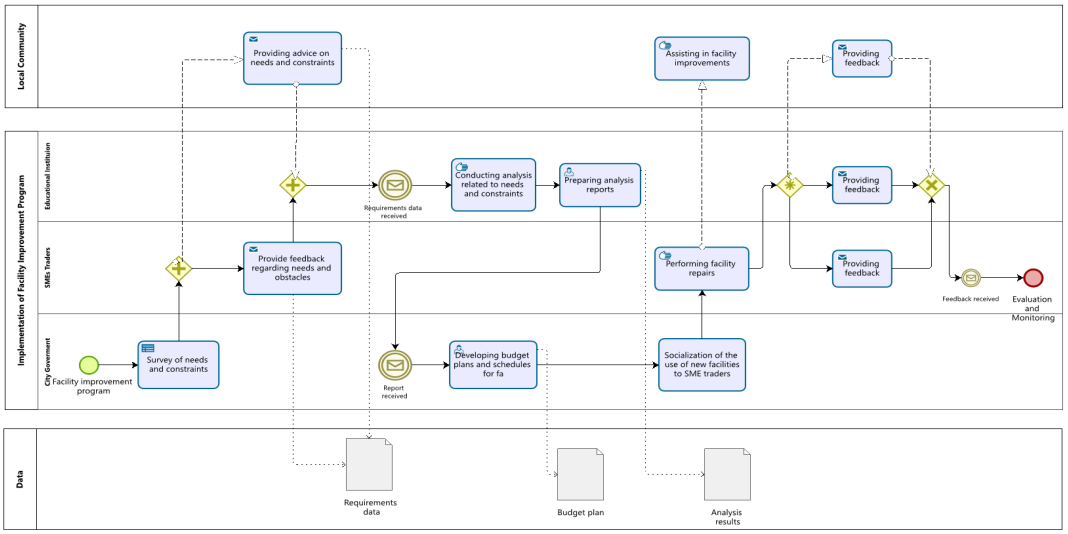
Picture 2. Strategy Development Implementation Design Model 2 (a)

The implementation of digital payments using QRIS begins when customers arrive and select products until the transaction is complete. Customers choose between cash payment or QRIS, if QRIS is selected, the transaction is processed quickly with automatic confirmation, reducing the risk of errors in cash payments. After payment confirmation, SMEs efficiently process the customer's order. The implementation of QRIS has proven to enhance customer convenience, accelerate transaction processes, and significantly support the digitalization of SMEs in Kandangan culinary tourism center.



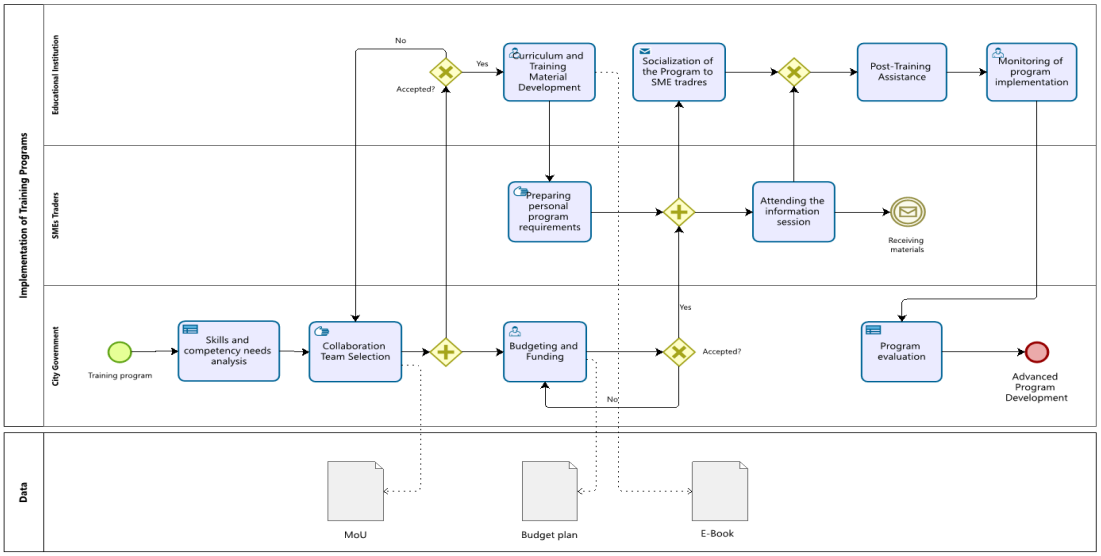
Picture 3. Strategy Development Implementation Design Model 2 (b)

The sales digitization process began with collaboration between the government and educational institutions to identify the digitization needs of MSMEs through research. Based on the results, the government provides facilities and funding to support practical training by educational institutions on account creation, online store management, and digital marketing. After thorough socialization and preparation, SME operators are guided in the creation and management of e-commerce accounts until they are fully operational. The program is reinforced with regular mentoring to ensure the success of SME operators in utilizing digital platforms to expand their markets.



Picture 4. Strategy Development Implementation Design Model 3

This strategy began with a survey of facility needs conducted by the government, supplemented by direct input from SME traders. The survey results were analyzed by educational institutions to develop recommendations for infrastructure improvements such as renovating dining tables, parking areas, public toilets, and other facilities. After the government approved the budget plan and renovation schedule, a socialization program was conducted for SME traders to prepare them for the use of the new facilities. The improvement process is carried out in collaboration with the local community, followed by a comprehensive evaluation to ensure visitor comfort is enhanced, thereby enabling business activities to operate more efficiently.



Picture 5. Strategy Development Implementation Design Model 4

The strategy for improving human resource capacity begins with an analysis of skill requirements through surveys and interviews to develop a training curriculum by educational institutions. After a collaboration team is formed, the government provides supporting funds, and educational institutions conduct effective outreach so that SME traders actively participate in the training. Training is conducted using a practical approach, followed by post-training mentoring to ensure participants can apply their skills in their businesses. This process is monitored regularly and evaluated to ensure sustainable human resource development aligned with the needs of the SWK culinary tourism center. All design models for strategy development implementation will be proposed for execution in the coming year.

4. Conclusion

The results of the analysis using the RIS3 method indicate that the main strengths of culinary area management lie in its strategic location, government support, and culinary tourism potential. However, the main challenges faced are limited facilities, dependence on offline sales, and competition with other culinary centers. Therefore, the recommended development strategies include improving infrastructure, digitizing MSMEs, and collaborating with the education sector to improve human resource capacity.

The modeling results indicate that the implementation of the strategy can be more effective with the digitization of payments (QRIS), the utilization of e-commerce, infrastructure improvements, and collaboration with the education sector. BPMN successfully identified critical stages such as socialization, training, monitoring, and evaluation, which play a very important role in the success of implementation. Therefore, optimizing strategy implementation can be achieved through better coordination among stakeholders, improved operational efficiency, and more effective resource management.

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How to cite this article:
Rachmadi M I, Lukmandono. Balanced Security and Privacy Protection in Digital Content Distribution SystemsAnalysis of Food Street Management Using the RIS3 Method and BPMN Model to Enhance the Competitiveness of Small and Medium Enterprises. *Jurnal Teknologi dan Manajemen.* 2025 July 6(2): 52-60. DOI: 10.31284/j.jtm.2025.v6i2.7502