

# Enhancing MSME Digital Marketing through Public-Private Partnerships with Fuzzy AHP

Trukan Sri Bahukeling<sup>1\*</sup>, Arif Imam Suroso<sup>2</sup> , Agus Buono<sup>3</sup> , Popong Nurhayati<sup>4</sup> 

<sup>1,2,3,4</sup>School of Business, IPB University, Indonesia

<sup>1</sup>trukansb@gmail.com, <sup>2</sup>arifimamsuroso@apps.ipb.ac.id, <sup>3</sup>agusbuono@apps.ipb.ac.id, <sup>4</sup>popongnurhayati@apps.ipb.ac.id

\*Corresponding Author

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## ABSTRACT

**Public Private Partnership (PPP)** is a contractual arrangement between government and private institutions to share resources, tools, and expertise for delivering public services. In Indonesia, PPPs have been widely applied in infrastructure sectors, but little attention has been given to their role in supporting micro, small, and medium enterprises (MSMEs) in adopting digital marketing. **This study aims** to build a PPP institutional scenario for implementing digital marketing in MSMEs and to formulate a priority strategy for strengthening PPP-based digital marketing policy. A mixed-method approach was employed, combining scenario planning with the Fuzzy Analytical Hierarchy Process (FAHP). **Data were collected** from 17 experts through in-depth interviews and analyzed using scenario modeling and fuzzy weighting techniques. The findings indicate that developing institutional guidelines, establishing a task force, fostering commitment, and creating PPP patterns are key strategies to enhance MSMEs' digital adoption. **The results highlight** the importance of government investment in digital infrastructure, training programs, and supportive regulations. **This research provides** practical contributions for policymakers in strengthening PPP-based digital ecosystems and academic contributions by advancing scenario-based decision-making for sustainable MSME development.

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## 1. INTRODUCTION

Public Private Partnerships (PPP) have become a widely adopted institutional framework for funding infrastructure and social facilities over the past three [1]. The adoption of PPPs is driven by several factors, including budgetary restrictions faced by governments, inefficiencies in traditional public procurement systems, and the increasing demand for private sector involvement to share risks and resources [2]. In many countries, PPP has evolved into a key mechanism to accelerate infrastructure development while simultaneously ensuring service delivery efficiency and sustainability [3]. Traditionally, PPP has been implemented in critical sectors such as health, energy, transportation, and water management, where collaboration between the public and private sectors is essential to bridge service gaps and improve access for the wider population [4]. In Indonesia, PPP schemes have been formally institutionalized through Presidential Regulation No. 38 of 2015, which provides a legal foundation for collaborative financing and management of public infrastructure [5]. This regulation underscores the importance of multi stakeholder collaboration in addressing national development challenges.

Despite its growing institutionalization, PPP initiatives in Indonesia remain concentrated in large scale and capital intensive infrastructure projects, leaving limited space for small scale initiatives targeted at micro, small, and medium enterprises (MSMEs) [6]. Previous studies indicate that PPP projects have primarily been executed in transportation (13.4%), water supply (5.1%), health facilities (5.2%), and information technology (1%), with little direct impact on MSME development. This situation presents a critical gap, as MSMEs represent 99% of Indonesian enterprises and play a pivotal role in contributing to both employment creation and national income generation [7]. However, MSMEs continue to face persistent challenges in digital transformation, including limited access to resources, inadequate digital literacy, and regulatory complexities that hinder their ability to adopt and fully benefit from digital technologies [8]. Addressing these barriers is vital not only for improving MSME competitiveness but also for strengthening the resilience of Indonesia's overall economy in an increasingly digital global market.

This research seeks to address the limited role of PPP in supporting MSMEs by developing an institutional model that enables their adoption of digital marketing within the broader digital transformation agenda [9]. The study is specifically designed with two main objectives: (1) to construct institutional scenarios for the implementation of PPP in digital marketing for MSMEs, capturing different possibilities and uncertainties in policy direction, and (2) to formulate a priority strategy for strengthening PPP based digital marketing policies that align with national development goals [10]. To achieve these objectives, the study employs a mixed method approach that integrates scenario planning with the Fuzzy Analytical Hierarchy Process (FAHP), allowing for a structured and systematic prioritization of strategies based on expert inputs and multi criteria evaluation.

The findings of this research are expected to generate twofold contributions. From a practical standpoint, the results will provide actionable recommendations for policymakers to design and implement PPP based digital infrastructure and regulatory frameworks that empower MSMEs to thrive in increasingly competitive digital markets [11]. From a theoretical standpoint, the study extends the application of PPP beyond conventional physical infrastructure by introducing its relevance in soft infrastructure development, particularly within the context of MSMEs and digital marketing. This novel perspective not only enriches the existing body of literature on PPP applications but also demonstrates the potential of scenario based strategic planning combined with FAHP to address complex, uncertain, and multi stakeholder policy environments [12]. By situating MSMEs within the broader PPP discourse, this research highlights their role as both beneficiaries and active participants in collaborative policy implementation, ensuring that digital transformation becomes more inclusive and sustainable.

In addition, this study strongly aligns with the United Nations Sustainable Development Goals (SDGs). By promoting digital transformation among MSMEs through PPP, the research contributes to SDG 8 (Decent Work and Economic Growth) by empowering MSMEs as drivers of national employment and income. It also supports SDG 9 (Industry, Innovation, and Infrastructure) by strengthening digital infrastructure and fostering innovation driven ecosystems. Furthermore, the study addresses SDG 10 (Reduced Inequalities) by expanding digital access for small enterprises, ensuring inclusivity in the digital economy. Finally, the collaborative PPP framework advances SDG 17 (Partnerships for the Goals), emphasizing the role of multi stakeholder cooperation in sustainable development.

## 2. LITERATURE REVIEW

### 2.1. Public Private Partnership and MSMEs

PPP has been widely recognized as a mechanism to enhance efficiency in public service delivery and infrastructure provision. Globally, PPP has been applied in sectors such as transportation, water, energy, and health, addressing limitations in government capacity and budgetary constraints [13]. In Indonesia, PPP is formally institutionalized through Presidential Regulation No. 38 of 2015, which primarily targets large scale infrastructure projects. However, the application of PPP for soft infrastructure particularly in supporting MSMEs' digital ecosystem remains limited. MSMEs, which account for over 99% of enterprises and play a vital role in employment, face challenges in adopting digital transformation due to limited resources and lack of collaborative platforms. Thus, extending PPP to strengthen MSME competitiveness represents an untapped opportunity [14].

### 2.2. Digital Marketing and MSME Competitiveness

Digital marketing has become a strategic tool for enhancing MSME competitiveness, enabling wider market reach, cost efficiency, and real time interaction with customers. Reports from the Boston Consulting

Group (2022) highlight three pillars for MSME digital transformation: access to financing, improved digital literacy, and simplified regulations [15]. Despite these opportunities, barriers persist 29% of MSMEs in Indonesia lack sufficient digital knowledge, and another 29% face significant funding constraints. Government interventions, such as Regulation No. 80 of 2019 on Trading Through Electronic Systems, have been introduced to address these barriers, yet challenges in coordination and execution remain [16]. Collaborative approaches that integrate both public and private sector resources are needed to accelerate MSME digital adoption sustainably.

### 2.3. Scenario Planning for Policy Development

Scenario planning is a strategic tool that enables policymakers and organizations to anticipate future uncertainties by constructing alternative future pathways. The TAIDA framework tracking, analyzing, imaging, deciding, and acting has been widely used to guide long term planning under complex conditions [17]. In the context of MSME digitalization, scenario planning allows policymakers to evaluate multiple institutional models for PPP implementation, balancing regulatory, financial, technological, and social factors [18]. This approach ensures that policy recommendations are robust and adaptive to rapid changes in digital environments.

### 2.4. Fuzzy Analytical Hierarchy Process (FAHP) in Decision Making

The Analytical Hierarchy Process (AHP) is a widely used multi criteria decision making method that structures complex problems into hierarchical models. However, traditional AHP has limitations when dealing with uncertainty and subjective judgments [19]. The Fuzzy AHP (FAHP) approach integrates fuzzy logic into AHP, improving its ability to handle imprecision in expert assessments. Prior studies demonstrate FAHP's effectiveness in evaluating policy alternatives, prioritizing strategies, and resolving conflicts in resource allocation. For MSME digital marketing policies, FAHP provides a systematic framework to prioritize institutional strategies such as establishing guidelines, forming task forces, fostering commitment, and creating PPP patterns.

### 2.5. Research Gap

Existing literature emphasizes PPP's role in infrastructure projects and digital marketing's potential to strengthen MSME competitiveness. However, few studies combine PPP, digital marketing, and MSME development within a single analytical framework using scenario planning and FAHP [20]. This research seeks to fill that gap by constructing institutional scenarios and formulating strategic priorities for PPP based digital marketing policies in Indonesia, offering both theoretical and practical contributions.

## 3. METHODOLOGY

This research is conducted utilizing scenario planning and fuzzy analysis as part of a comprehensive mixed method approach designed to capture both the qualitative dimensions of stakeholder perspectives and the quantitative rigor needed for prioritization and decision making [21]. The Analytical Hierarchy Process (AHP) is employed as a decision support tool because it is capable of drawing systematic conclusions from a number of interrelated phenomena and organizing them into a structured hierarchy, thereby enabling a more thorough and in depth investigation of complex policy alternatives. Building upon this, the study adopts the TAIDA framework tracking, analyzing [22], imagining, deciding, and acting as the foundation of scenario planning, which provides a structured lens to anticipate, conceptualize, and characterize possible futures that may affect MSME digital transformation through PPP. The process begins with the tracking stage, during which researchers closely monitor, investigate, and categorize various developments, identifying both opportunities and risks (problems) as well as structural and behavioral changes that manifest as trends within the ecosystem [23]. This stage ensures that the subsequent scenarios are not speculative but rather grounded in actual dynamics observed in the field.

Within this methodological framework, the PPP model is introduced as a collaborative institutional mechanism for delivering infrastructure that integrates contributions and active participation from the private sector alongside government initiatives [24]. The PPP plan allows the public and private sectors to share responsibilities, risks, and accountability, thereby creating a balanced distribution of tasks that enhances both efficiency and sustainability. Specifically, the government assumes responsibility for planning and overseeing the development of public soft infrastructure [25], which includes regulatory frameworks, digital support systems, and policy direction. Meanwhile, the private sector, over a designated contractual period, takes on the

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role of supplying, managing, and overseeing the operation of such soft infrastructure to ensure its effective utilization in supporting MSMEs' digital marketing initiatives [26]. This collaboration reflects the spirit of PPP, where both sectors complement each other's strengths in order to accelerate MSME digital adoption.

To ensure research reliability and validity, expert respondents were selected based on professional roles, competence, and at least ten years of experience in MSME digitization [27]. Data were collected through in depth online interviews from June to September 2023, providing flexibility to involve diverse experts while minimizing logistical barriers [28]. All sessions were documented, encrypted, and analyzed under strict ethical standards, ensuring the insights could be reliably integrated into scenario planning and the Fuzzy Analytical Hierarchy Process (FAHP) for developing PPP based digital marketing strategies for MSMEs [29].

Table 1. Respondent

No.	Position	Organization	Total Person
1.	Director of Information and Communication and Maritime Affairs	Ministry of Communication and Information	1
2.	Director of Craft, Culinary, Fashion and Design	Ministry of Tourism and Creative Economy	1
3.	Director of Digital Economy Governance,	Directorate of Digital Economic Governance, Ministry of Tourism and Creative Economy	1
4.	Head of SME partnerships	Ministry of Cooperatives and SMEs	1
5.	Chairman of the Association	Indonesian Business Development Services Association (ABDSI)	1
6.	Coordinator for Local Product Development at the Ministry of Trade	Ministry of Trade	1
7.	Chairman	Indonesian E-Commerce Association (idEA)	1
8.	Marketing Director	Ministry of Maritime Affairs and Fisheries	1
9.	Expert Staff for Finance and MSME Development	Ministry of BUMN	1
10.	Director of Digital Business	Telkom Indonesia	1
11.	Academician and Researcher	Universitas Indonesia	1
12.	Head of MSME	Bank Indonesia	1
13.	LPEM FEB UI researcher, in the fields of International Economics, Industrial Economics, MSME Development, Tourism	Universitas Indonesia	1
14.	Chairman	Ministry of Maritime Affairs and Fisheries	1
15.	Head of BI Representative of Babel	PT. Sumber Alfaria Trijaya, Tbk	1
16.	Head of Creative Economy Development Strategy Division	University of Indonesia	1
17.	Senior Merchandising Manager	DKI Jakarta Provincial Government	1

In Table 1 the study then explores in greater depth the steps and significance of applying the Fuzzy Analytical Hierarchy Process (FAHP) technique, which represents a development and refinement of the traditional Analytical Hierarchy Process (AHP). FAHP builds upon the solid foundation of conventional AHP by incorporating fuzzy logic into its structure, thus allowing for a more flexible and nuanced treatment of uncertainty and subjectivity in decision making situations. The Analytical Hierarchy Process itself is a widely recognized decision support model that structures complex multi factor or multi criteria problems into a hierarchical system, making them more manageable and easier to analyze systematically. One of the strengths of AHP is its capacity to incorporate subjective elements such as individual perceptions, preferences, experi-

ences, and intuition, which are often critical in shaping real world decisions yet difficult to capture through purely quantitative approaches. In managerial contexts, AHP provides significant benefits by assisting decision makers in systematically evaluating alternatives and making rational, transparent, and justifiable choices.

Decision making within this framework typically involves a range of interconnected processes, including but not limited to: (1) long term planning and strategy development, (2) generating a comprehensive set of alternatives, (3) prioritizing these alternatives based on their relative importance, (4) selecting specific policies after identifying different options, (5) allocating limited resources effectively, (6) identifying essential needs or requirements, (7) projecting future results or outcomes, (8) designing systems to support implementation, (9) measuring organizational or program performance, (10) ensuring system stability and resilience, (11) conducting optimization to achieve maximum efficiency, and (12) resolving conflicts that may arise in the decision making process. Since these areas of decision making are frequently influenced by a wide variety of unstructured, uncertain, and context specific factors, it becomes necessary to employ expert judgment and professional insights to integrate these aspects into the study in a meaningful way. This is precisely where FAHP provides added value, as it allows ambiguity and uncertainty in human judgments to be mathematically represented, making the overall analysis more robust and credible.

In the context of this research, FAHP is applied through the active participation of a carefully formed respondent group. This group consists of stakeholders drawn from multiple sectors who are directly engaged in or impacted by the creation of public private digital partnerships for MSMEs in the DKI Jakarta region. Their inclusion ensures that the analysis not only reflects theoretical constructs but also embodies the practical realities, challenges, and opportunities faced in implementing PPP based digital marketing policies. The diversity of stakeholders ranging from government representatives, private sector actors, financial institutions, and MSME associations to academics and technology experts enables the study to capture a comprehensive spectrum of perspectives. By integrating their judgments into the FAHP model, the study generates results that are more balanced, inclusive, and contextually relevant, thus offering strong empirical support for the formulation of strategies aimed at enhancing MSME competitiveness through sustainable digital transformation.

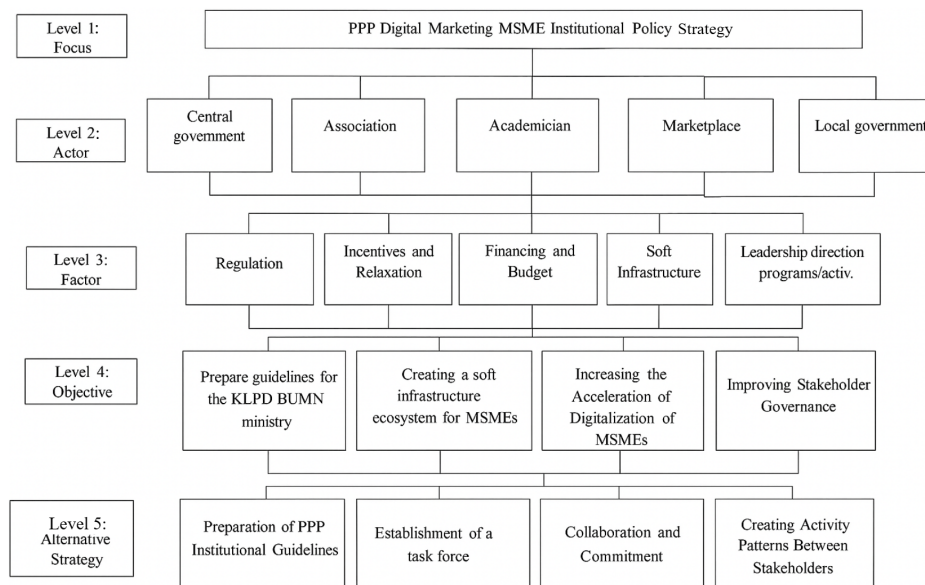


Figure 1. Analytical Hierarchy Structural for MSME PPP Digital Marketing

Identifying the knowledge or information being observed is the first step in implementing a hierarchical arrangement. A complex problem is first broken down into its key aspects, which are then further broken down into their components, and so on. The findings of the preliminary theoretical and empirical investigations in this study are shown in Figure 1. Every hierarchical level is evaluated using pairwise comparisons. A scale of 1 to 9 is the most effective for expressing thoughts on a variety of topics. Pairs of elements at each hierarchical level are compared to an element at the top level using a scale of 1 to 9. The degree to which we can distinguish between the intensity of the link between items can be described by a nine unit scale. Every hierarchical level is evaluated using pairwise comparisons. A scale of 1 to 9 is the most effective for expressing thoughts on a

variety of topics. Pairs of elements at each hierarchical level are compared to an element at the top level using a scale of 1 to 9. The degree to which we can distinguish between the intensity of the link between items can be described by a nine unit scale.

## 4. FINDING AND DISCUSSION

### 4.1. Tracking

PPP digital marketing is influenced by technological, social, cultural, and economic factors. Digital marketing removes time and location barriers, giving MSMEs opportunities to expand into the digital economy. Of the 64.2 million MSMEs, 12 million are already engaged digitally, supported by the government's Go Digital MSME initiative aimed at accelerating digitalization, improving governance, and building a soft infrastructure ecosystem. To achieve this, PPP requires cooperation among stakeholders, including regional governments, associations, academics, and the central government as regulator and incentive provider. The government must also enhance its capacity in project identification, contract design, and policy development, including regulations, subsidies, and tariff reductions to support MSME digital marketing.

Cultural values such as mutual cooperation strengthen MSME development and unity, while national and regional policies provide the basis for PPP driven soft infrastructure. Policies should be tailored to sectoral and regional needs, enabling MSMEs to adapt by using appropriate materials and digital platforms. Enhancing the digital marketing environment further requires clear regulations, incentives, and budgets, as well as strong technological adoption and digital payment systems. MSMEs with quality products and experience in e-commerce are better prepared to sustain digital marketing, provided they embrace non cash transactions and social media as marketing tools.

The success of PPP in building MSME digital ecosystems depends on supportive regulations, government programs, corporate collaboration, and improved digital literacy. Given the government's limited resources, broad cooperation and synergy among stakeholders are essential to strengthen MSME competitiveness. These dynamics are captured during the tracking phase of scenario planning, which identifies core issues and priorities for PPP based digital marketing development.

### 4.2. Analysing

The analysis stage is crucial because it evaluates the outcomes of tracking, specifically related to policies and institutions. PPP digital marketing is influenced by policies, while collaborative and human capital play central roles. At this stage, both best and worst planning strategies are assessed in relation to technological, social, cultural, and economic factors.

- Scenario 1 organizational Policies establish institutional rules that guide PPP digital marketing. This benefits government and MSMEs by ensuring legal compliance, expanding local government revenue, and creating a supportive environment for private and academic actors. Although positively impactful, proper coordination and oversight are still necessary to ensure that digitalization progress is continuous and inclusive.
- Scenario 2 task Force Formation focuses on creating a task force to accelerate problem identification and contract approval. Involving government, business actors, and academics, this task force ensures effective PPP implementation and supports MSMEs by improving their competence in digital marketing management.
- Scenario 3 fostering Cooperation and Commitment emphasizes collaboration based on trust and public benefit. Regulations, incentives, and budgets guide PPP and digitalization, while leadership plays a key role in directing cooperation. Digital marketing provides MSMEs with multiple benefits, such as easier customer interaction, higher conversion rates, lower costs, and increased competitiveness. Platforms like GoFood, GrabFood, and ShopeeFood illustrate how digital collaboration strengthens MSMEs' market presence. For sustainability, MSMEs must internalize cooperation and commitment as part of their mandate in PPP digital marketing.
- Scenario 4 developing PPP Patterns focuses on creating structured models for MSME digital marketing. These include PPPbacked online training facilities on e-commerce, SEO, and data analytics, as well as collaborative digital platforms for knowledge and resource sharing. Such patterns should be tailored to

the specific characteristics of Indonesian MSMEs. Successful and long term implementation requires strong cooperation between the government, private sector, and MSMEs to ensure that PPP patterns effectively strengthen soft infrastructure and competitiveness.

#### 4.3. Imaging

The visualization of PPP scenarios in MSME digital marketing highlights different strategies and impacts on stakeholders [30]. Scenario 1 emphasizes the importance of completing PPP guidelines before implementation to reduce risks, increase transparency, and create a favorable investment climate, thereby promoting sustainable economic development. Scenario 2 focuses on forming a task force to accelerate processes from procurement to field implementation, ensuring better coordination, oversight, and collaboration among key actors such as government, private companies, financial institutions, academics, associations, and innovators [31]. Scenario 3 underscores the role of cooperation and commitment in sustaining PPP projects, where public private collaboration not only supports community welfare and economic growth but is also formalized through MoUs that define responsibilities and enable soft infrastructure initiatives with government support. Finally, Scenario 4 stresses the development of a structured PPP pattern in digital marketing, ensuring clarity of roles, efficient risk management, and effective resource use, which together enhance the overall quality and sustainability of MSME digital transformation efforts [32].

#### 4.4. Deciding



Figure 2. Four Scenarios of PPP-Based Digital Marketing Policy for MSMEs

Scenario 1: PPP Digital Marketing Institutional Guidelines can provide a strong framework and clear, sustainable direction. Scenario 1 provides guidelines for the creation of PPP institutions. Some strategies that can be implemented are:

- Analysis of Local Needs and Conditions
- Involve Related Parties
- Comparative studies on international practices that have been successful.
- Ensure that the draft PPP guidelines are in line with the applicable legal and regulatory framework.
- Form an expert team consisting of PPP experts, legal professionals, and other stakeholders to provide input and diverse views in preparing the guidelines.
- Test the guidelines in a small PPP project or pilot project. This will help identify potential problems and refine guidelines before they are implemented across the board.
- The contents of the guidelines must be clear, easy to understand, and comprehensive.

Scenario 2: Having a task force to facilitate coordination and strengthen synergy between the parties involved and minimize potential conflicts of interest. Some of the strategies used are:

- Selection of Competent Members. Task force members have relevant expertise and experience in the PPP field and have knowledge of regulations, project management, finance, law, and other aspects related to PPP.
- Determine the objectives and responsibilities of the task force clearly and specifically. Ensure that each member understands their role in achieving the set goals.
- There should be good interinstitutional coordination between institutions to avoid overlap and increase synergy.
- Monitoring and Evaluation: This involves periodically monitoring project progress and conducting performance evaluations.
- Effective communication, commitment, and dedication.

Scenario 3: Strengthening commitment and collaboration to create strong synergy between the public and private sectors, which will have a positive impact on infrastructure development, economic growth, and community welfare [33]. Some of the strategies concluded are:

- Understanding Common Goals. Good coordination begins with a clear understanding of the results to be achieved and the benefits expected.
- Open and continuous communication between all stakeholders is essential. Effective coordination requires timely and open sharing of information.
- Identify Roles and Responsibilities.
- Formation of a coordination team consisting of representatives from all parties involved in the PPP project.
- Plan regular meetings to monitor progress, convey important information, and discuss next steps.
- When problems arise, focus on finding solutions that are mutually beneficial for all parties.
- Take advantage of advanced communication and collaboration technology to facilitate coordination between the parties involved in the PPP project, especially if there are geographical differences.
- Effective coordination is based on teamwork. Make sure all team members contribute actively and support each other in achieving common goals.
- Always evaluate the coordination process and identify areas that require improvement.

With the participation of PPP actors, who play roles according to their skills and capabilities, PPP projects have a greater opportunity to achieve the desired goals and provide greater benefits to society [34]. It is important to ensure that all parties collaborate synergistically and have the same vision in order to achieve PPP project success. Scenario 4: Forming a PPP Pattern is crucial as it determines the appropriate financial structure and risk management [35]. The roles and responsibilities of each party are clearly regulated, and overlap is avoided. Some of the proposed strategies are:

- Involve stakeholders, including the community, private sector, and relevant government parties, in the process of determining the PPP pattern.
- Some common PPP patterns include BOT (Build Operate Transfer), BOO (Build Own Operate), DBOT (Design Build Operate Transfer), and other variations.
- Drafting a clear contract.
- Risk Identification and Mitigation.
- Financial Assessment and Financing.
- Project Management and Supervision.
- Communication and publication.
- Evaluation and Learning.

#### 4.5. Fuzzy Analytical Hierarchy Process (FAHP)

To find the outcomes of an interest based factor analysis, we performed a strategy analysis utilizing the FAHP approach. The purpose of this study was to determine the critical elements that could improve the institutional policy for MSME digital marketing PPP implementation. Fuzzy AHP software is used for strategy analysis in this study [36]. The weight value of each component in the hierarchical structure can be determined using the analysis results. This enables the FAHP phases to be used to rank the various PPP Digital Marketing UMKM institutional policy strategies: The PPP Digital Marketing UMKM Institutional Policy Model is the focus of the study, specifically:

- Actor criteria with local governments, university institutions, associations, and the federal government [37].
- Consider factors such as soft infrastructure, leadership, activities, money and budget, incentives and relaxation, rules, and sub criteria.
- Objective criteria with sub criteria to create a soft infrastructure ecosystem, expedite MSME digitalization, enhance stakeholder governance, and establish regulations for BUMN KLPD [38].

Alternative tactics are developed based on expert perspectives. Creating PPP institutional norms, establishing a task force, fostering commitment and cooperation, and establishing patterns of cooperative actions amongst stakeholders are some of these options. Figure 3 below illustrates the hierarchical structure used in this study.

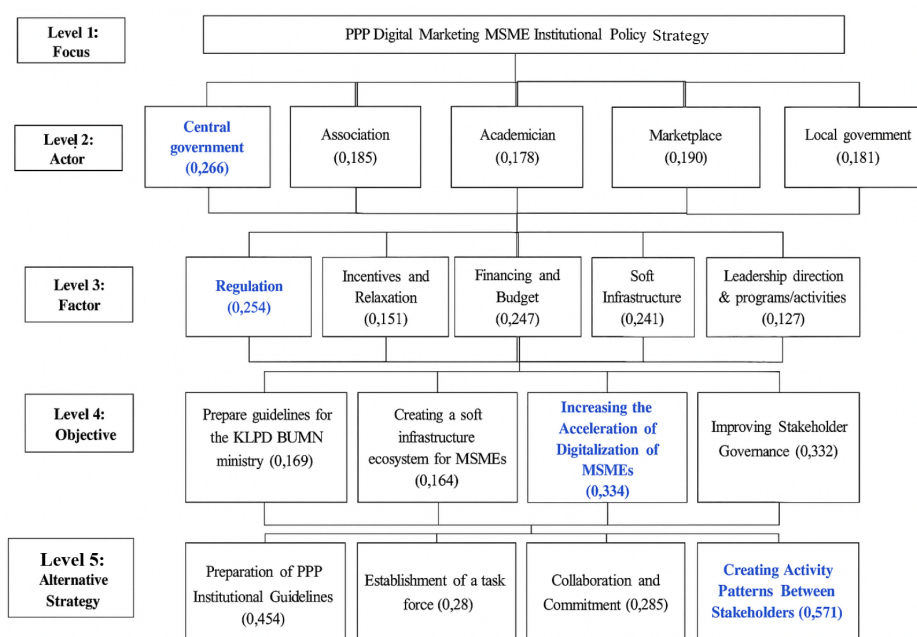


Figure 3. Hierarchical Structure of PPP Digital Marketing MSME Strategy

The Central Government (0.266) and the Marketplace (0.190) are key actors in supporting MSME digital marketing through PPP institutional policies [39]. As policymakers, the government ensures long term MSME sustainability by providing incentives, evaluations, and guidelines, while also facilitating digitalization through various assistance programs. At the same time, marketplaces hold significant commercial potential as hubs for consumer transactions and MSME innovation. Their rapid growth, supported by diverse payment options, positions e-commerce as a primary driver of Indonesia’s digital economy, which is projected to reach USD 100 billion by 2025 [40].

The factor criteria highlight two critical sub criteria: budget and financing (0.247) and regulatory support (0.254). Strong legal and financial frameworks enable MSMEs to contribute more significantly to the economy. Bank Indonesia’s policy requiring banks to gradually increase MSME credit allocation from 5% in 2015 to 20% in 2018 reflects a strong government commitment [41]. Access to financing programs, microloans,

and tax incentives has further supported MSMEs by expanding opportunities for innovation, reducing financial barriers, and strengthening their economic role [42]. In 2020 alone, MSMEs received IDR 123.46 trillion in funding, demonstrating intensive state support. Such initiatives, combined with collaboration with financial institutions, enhance MSMEs' capacity to grow, innovate, and sustain operations, forming a solid foundation for PPP frameworks.

The third key criterion emphasizes goals such as accelerating MSME digitalization (0.334) and improving stakeholder governance (0.332). Digitalization is essential for revitalizing Indonesia's economy, requiring strong digital infrastructure to reduce transaction costs, expand market access, and increase productivity [43]. Without adequate digital support, MSMEs risk being excluded from modern supply chains and global competition. Therefore, good governance and competent human resources are equally vital to ensure MSMEs adapt to technological advancements and maintain competitiveness. Competence in this case extends beyond digital literacy, encompassing managerial expertise, innovation capacity, and responsiveness to shifting market dynamics. Based on the priority vector analysis, four alternative strategies formulating institutional guidelines, establishing a task force, fostering cooperation and commitment, and developing PPP patterns are prioritized as the backbone of sustainable MSME digital transformation, as summarized in Table 2.

Table 2. Priorities for Alternative PPP Digital Marketing Policy Strategies for MSMEs

No.	Alternative Strategy	Priority Vector	Rank
1.	Creating Activity Patterns Between Stakeholders	0.571	1
2.	Preparation of PPP Institutional Guidelines	0.434	2
3.	Collaboration and Commitment (Alliances)	0.285	3
4.	Establishment of a task force	0.28	4

Establishing activity patterns among stakeholders is the primary priority and alternative technique that is thought to be the most dependable (0.571). Business actors are encouraged to collaborate and implement superior ideas through strategic alliances [44]. Activities that alter the patterns of communication between the company and its major environmental stakeholders are crucial components of these resource acquisition methods. The relative success of an organization's contacts with its environment is likely to be influenced by external managerial networking patterns with key stakeholders, as organizations are open systems made up of both internal and external coalitions. The need to manage environmental dependencies is becoming more and more crucial as the lines between public sector organizations and their stakeholders become more hazy and network forms of governance and service delivery gain prominence [45]. The quadrant's stakeholder positions can be used to categorize and classify the ways in which interests influence community forest management practices [46].

Developing PPP Institutional Guidelines is the next alternate tactic (0.434). In order to improve and build the organization with a more professional, flat, transparent, short hierarchy and decentralized authority, institutional rules were prepared [47]. The central and regional governments' institutional arrangements are more focused on efforts to streamline government bureaucracy in order to create organizations with more decentralized authority, flat, transparent, short hierarchies, and a professional appearance [48]. Thus, a clear vision and mission, an organizational structure pattern based on actual needs, and a strategy for accomplishing the organization's goals are the foundations around which regional apparatus organizations are built [49]. Jurisdictional limits, or the range of topics and objects that an institution covers, are one of the key components of an institution [50]. Next are property rights, which are duties and rights governed by law, tradition, custom, or agreement that define societal interactions based on resource interests [51]. Additionally, representational rules apply to those who wish to be involved in resource related decision making.

## 5. MANAGERIAL IMPLICATION

The study's findings show that PPP institutional rules are needed as the foundation for implementation. Based on existing criteria, a PPP collaboration pattern can be developed to identify key actors and stakeholders. To accelerate implementation, a task force should be organized involving public and private sectors, academia,

and MSME associations, with stakeholder commitment and cooperation as essential elements. Government agencies currently draft Memorandums of Understanding (MoUs) with business actors to clarify roles and responsibilities in PPP projects, ensuring alignment with institutional mandates.

The outcome of private sector programs must correspond with institutional responsibilities, while government and corporate actors collaborate to build soft infrastructure. Such initiatives, supported by tangible and intangible contributions from the government, should remain non profit and community focused. In addition, the inclusion of MSME representatives, associations, and community organizations in Focus Group Discussions (FGDs) provides a platform to exchange information, identify challenges, and propose solutions. Through PPP, both sectors can offer resources for MSME digital development, including training, mentoring, market access, and digital skills assistance, thereby strengthening soft infrastructure for digital marketing.


## 6. CONCLUSION


Internet marketing holds great promise as a way to leverage the internet economy for product promotion, according to the findings of the conducted research. E-commerce transactions make up the largest portion of Indonesia's digital economy. At the moment, domestic MSMEs are supported in their digital transformation and digital marketing introduction efforts through PPPs. Creating PPP digital marketing institutional guidelines to be able to provide a strong framework and clear and sustainable direction is one of the four scenarios based on the scenario planning study. Another scenario is the creation of a task force to help coordinate and strengthen the parties' synergy while minimizing potential conflicts of interest. Boost cooperation and dedication to forge a solid partnership between the public and private sectors, which will benefit community welfare, economic expansion, and infrastructure development. Establishing a PPP pattern can assist in choosing the best risk management and finance structure. To avoid overlap, each party explicitly defines their roles and duties. Developing a PPP pattern is an alternate priority method to expedite the adoption of PPP digital marketing, according to the results of the Fuzzy AHP. The next step is to develop PPP institutional rules. The central government and the market are the most crucial players in promoting the success of PPPs. The most significant legislation places a higher priority on the MSME ecosystem's increased digitization.

The findings indicate that using the internet economy for product promotion through digital marketing has a lot of promise. The largest contributor to the digital economy is digital marketing. To help MSMEs and speed up PPP, the government should promote a number of initiatives. Specifically digital marketing Putting money into digital infrastructure Strong and dependable digital infrastructure, such dependable and quick internet networks, must be developed by the government. MSMEs can more easily use digital technology and enter international markets with the support of strong infrastructure. Education and Training: Giving MSMEs instruction and training in digital marketing is a crucial first step. To assist MSMEs in comprehending and putting into practice successful digital marketing strategies, the government might fund workshops and training courses. In order to help MSMEs expand and compete in the global market, the government can make information about the newest developments in digital marketing, cutting edge digital technologies, and other resources easily accessible.

## 7. DECLARATIONS

### 7.1. About Authors

Trukan Sri Bahukeling (TS) 

Arif Imam Suroso (AI)  <https://orcid.org/0000-0002-4080-8106>

Agus Buono (AB)  <https://orcid.org/0000-0002-4273-0269>

Popong Nurhayati (PN)  <https://orcid.org/0009-0003-5665-5671>

### 7.2. Author Contributions

Conceptualization: PN; Methodology: AI; Software: AB; Validation: PN and AB; Formal Analysis: TS and AI; Investigation: PN; Resources: AB; Data Curation: TS; Writing Original Draft Preparation: AI and AB; Writing Review and Editing: TS and PN; Visualization: TS; All authors, TS, AI, AB, and PN, have read and agreed to the published version of the manuscript.

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### 7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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### 7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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