Unveiling The Power Of Adaptive Informationtechnology: A Catalyst For Elevating Sme Performance In Indonesia – A Case Study In Malang City

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Abstract.

This research seeks to comprehend the impact of information technology (IT) utilization on the performance of Small and Medium Enterprises (SMEs) in Malang. The study investigates the perceptions of SMEs stakeholders through a survey involving 90 SMEs respondents in Malang. Employing a questionnaire and utilizing the Partial Least Squares Structural Equation Modeling (PLS-SEM) method for data analysis, the research reveals positive and significant outcomes for latent variables such as performance expectations, business expectations, social influence, hedonic motivation, and habits concerning SMEs behavior in adopting information technology, based on the Unified Theory of Acceptance and Use of Technology (UTAUT 2). However, the latent variable of price value does not exert a significant influence on SMEs behavioral interest in adopting information technology. Additionally, SMEs behavioral interest positively and significantly influences their usage behavior in utilizing information technology, and the subsequent usage behavior has a positive and significant effect on SME performance.

Keywords: *Information Technology, UTAUT 2, Small and Medium Enterprises (SMEs), PLS-SEM, and Business Performance.*

I. INTRODUCTION

In the dynamics of national development, many developing countries allocate their primary focus to the pivotal role of Micro, Small, and Medium Enterprises (MSMEs). These entities not only act as engines for economic growth but also serve as pioneers in addressing unemployment challenges, while simultaneously supporting the acceleration of development in local regions (Windusancono, 2021). Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in the economy of both the nation and the region (Ciekanowski & Wyrębek, 2020). Emphasizes that the existence of MSMEs is not only a vital element but also a backbone supporting economic growth and the sustainable development of regions. In this era of globalization, the challenges of sustainable development have become increasingly complex. In Indonesia, the MSMEs sector plays a strategic role in supporting economic growth and achieving Sustainable Development Goals (SDGs). In line with this, the utilization of Adaptive Information Technology (IT) can be a crucial catalyst for enhancing MSMEs performance. The rapid expansion of MSMEs, reaching 7,716,172 units with a market share increase of 13.98% from 2012 to 2017 (Analia, 2020), highlights their significance, particularly in Indonesia's economic milieu. Dominating with 62,922,617 business units in 2019, MSMEs contribute almost 100% to the total business units, reaffirming their position as a key pillar in the economic structure. The consistent growth of MSMEs also has a significant impact on employment absorption, with MSMEs employing over 97% of Indonesia's workforce. As a major contributor to the Gross Domestic Product, MSMEs show sustained contributions, creating added value in both current and constant prices.

The increase in market share of GDP in both these parameters, by 78.27% and 296.21% respectively, underscores the strategic role of MSMEs in driving economic growth and national prosperity.Amidst their strengths, MSMEs must navigate challenges in the era of globalization and intense competition (Naradda Gamage et al., 2020; Prasetyo, 2023a). In the era of globalization and fierce competition, SME face the imperative of strategic development to amplify market value, particularly in response to the influx of foreign

products into Indonesia's industrial centers (Prasanna et al., 2021; Surya, 2021). The competitive business climate hinders conducive growth, and SME struggles with a lack of integrated guidance and community trust, impacting access to capital, market expansion, and information acquisition (Mai & Nguyen, 2023). In addition to the aforementioned challenges, institutional changes, as noted by Hernita (Hernita et al., 2021), are pivotal in unlocking greater productivity potential through efficient resource adaptation and innovation in production technologies. These changes represent a lasting transformative process integral to development, aiming to internalize heightened productivity potential and establish a new equilibrium (Hernita et al., 2021).Capturing productivity potential involves embracing technological changes that optimize the efficiency of both labor and capital utilization through alterations in production techniques. This involves discovering new processes or enhancing existing ones, leading to increased output with the same input or achieving the same output with fewer inputs. According to the production function, technology is a crucial factor in enhancing overall production (Onu & Mbohwa, 2021).

Technological development in a region is gauged through the Information and Communication Technology Development Index (ICT-DI). In Indonesia, the ICT-DI increased from 3.88 in 2015 to 4.34 in 2020 (Dewi et al., 2022). So, there has been a notable improvement in the Information and Communication Technology Development Index over the specified period.In 2018 and 2019, the pattern in the sub-indices of the ICT Development Index (ICT-DI) remains consistent. The highest sub-index is expertise (5.54), followed by access and infrastructure (4.88), and usage (3.19). Indonesia's global ranking improved from 114 in 2015 to 111 in 2016 out of 176 countries, but it still trails neighboring countries. According to the Ministry of Communication and Information Technology (ICT business sector, 2021), out of 803 businesses, 740 use computers, and 694 use the internet. The trend shows greater usage among large enterprises, with limited utilization in micro-level businesses. Specifically, website usage is low, with only 39.35% employing them. Given this limited technology use, addressing issues and sustaining competitiveness for SME will be challenging.Similarly, Micro, Small, and Medium Enterprises in Malang play a crucial role as the primary contributors to the city's economy (Hermawati et al., 2020). An analysis of the trajectory of small and medium businesses in Malang shows a consistent increase in SME numbers, marked by positive growth rates over the years. Data from the Central Statistics Agency underscores this trend, revealing a significant disparity in the number of large enterprises compared to MSMEs in Malang. With 99.8% representation, MSMEs dominate the business landscape, comprising 99,213 micro-scale businesses, 9,942 small-scale businesses, and 3,711 medium-scale businesses, whereas large-scale businesses total only 265 units. Recognizing the strategic significance of MSMEs, there is a necessity for them to adapt to ongoing changes to withstand competition from large enterprises.

Institutional changes, particularly in information technology, can aid MSMEs in this adaptation. Kamar et al. research (Kamar et al., 2023) supports this, emphasizing the crucial role of IT for SME to enhance competitiveness in the global and highly competitive era of globalization. Leveraging IT presents a strategic avenue for MSMEs to improve their competitiveness and explore better opportunities.Nevertheless, Ajeng et al. research (Arjang et al., 2023) reveals that the utilization of Information Technology (IT) in MSMEs faces challenges and is not optimally employed. The study highlights the low educational levels of MSMEs practitioners, particularly in IT-related education during their school years. As a result, integrating IT into their business operations proves impractical, given their limited abilities and skills in information technology to support their business. Age emerges as a significant barrier, as many are unwilling to undergo further learning, making the adoption of information technology challenging.Both studies imply that incorporating IT into MSMEs can positively impact their performance. However, the current utilization of IT in MSMEs is suboptimal and encounters obstacles. Given these findings, additional research is crucial due to the pivotal role SME play, notwithstanding their challenges in adapting to IT utilization. This research aims to enhance the performance of Micro, Small, and Medium Enterprises in Indonesia by dedicating special attention to the utilization of adaptive Information Technology. Through a case study in Malang City, the study aims to depict the practical implementation of this strategy in supporting inclusive and sustainable economic growth.The selection of Malang City as a case study considers the diversity of MSMEs and the dynamics of the local economy.

By exploring the potential of adaptive IT in this environment, it is hoped that applicable solutions can be identified to support MSMEs in various contexts. Through a profound understanding of this background and context, this research is directed towards providing valuable insights into supporting the achievement of SDGs targets, particularly in fostering inclusive economic growth through the utilization of adaptive IT in the MSMEs sector.In alignment with the Sustainable Development Goals (SDGs), the research endeavors to address the challenges faced by MSMEs in adapting IT usage. SDG 9, focusing on Industry, Innovation, and Infrastructure, underscores the significance of technological advancements in fostering economic growth. Despite the acknowledged potential of IT to positively impact MSMEs performance, the existing barriers, as indicated by Ajeng et al. study, highlight a critical gap that needs addressing. Bridging this gap is imperative for advancing towards SDG 8, which emphasizes Decent Work and Economic Growth, as the effective utilization of IT in MSMEs can contribute to the creation of more sustainable jobs and inclusive economic development. Through a focused investigation in the case study of Malang City, the research aims to offer insights that can inform strategies and policies, ultimately contributing to the attainment of these SDGs by enhancing the adaptive use of Information Technology in MSMEs and elevating their overall economic performance.

II. RESULT AND DISCUSSION
2.1 Results
Descriptive Analysis
1. Gender

   The majority of entrepreneurs in Malang's MSMEs who participated in the survey were male, comprising 68 individuals or 75.6% of the total respondents. Female entrepreneurs constituted only 22 individuals or 24.4% of the total respondents.

2. Age

   The majority of entrepreneurs from MSMEs in Malang who responded fell within the 18-30 age group, totaling 53 individuals or 58.9% of the total respondents. Entrepreneurs aged 31-40 accounted for 24 individuals or 26.7%, those aged 41-50 were 9 individuals or 10% of the total respondents, and entrepreneurs over 50 years old comprised 4 individuals or 4.4%.

3. Highest Education

   The majority of MSMEs entrepreneurs in Malang who participated had a highest education level of high school, totaling 39 individuals or 43.3% of the total respondents. Those with the highest education level of elementary school were 5 individuals or 5.6%, while those with the highest education level of junior high school constituted 14 individuals or 15.6% of the total respondents. Additionally, entrepreneurs with the highest education level of bachelor were 32 individuals or 35.5%.

4. Business Duration

   Most MSMEs entrepreneurs in Malang who participated in the survey had a business duration of 1-5 years, comprising 44 businesses or 48.9% of the total respondents. Businesses with a duration of <1 year constituted 15 businesses or 16.7%, those with a duration of 5-10 years were 23 businesses or 25.5% of the total respondents, and those with a duration of more than 10 years accounted for 8 businesses or 8.9%.

5. Business Field

   Most respondents were involved in the culinary field, with a total of 47 businesses or 51.1% of the total respondents. Additionally, the printing business had 18 businesses or 20%, laundry businesses had 11 businesses or 12.2%, retail businesses had 7 businesses or 7.8% of the total respondents, followed by fashion businesses with 3 businesses or 3.3%, education businesses with 1 business or 1.1%, and other fields with 4 businesses or 4.4% of the total respondents.

6. Duration of Information Technology Usage

   Most MSMEs entrepreneurs in Malang who participated in the survey had been using information technology for 1-5 years, comprising 71 businesses or 78.9% of the total respondents. Businesses with a duration of using information technology <1 year constituted 15 businesses or 16.7%, those with a

duration of 5-10 years were 4 businesses or 4.4% of the total respondents, and businesses with a duration of more than 10 years were 0 businesses or 0% of the total respondents.

Model Evaluation

The analysis of model evaluation in this research utilizes *Partial Least Squares* (PLS). Model evaluation is conducted through three stages: convergent validity, discriminant validity testing, and reliability testing.

Table 1. Algorithm Table

	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
PE	0.7307	0.9156		0.8773	0.7307	
E	0.7119	0.9079		0.8645	0.7119	
SI	0.8015	0.9237		0.877	0.8015	
PV	0.8131	0.9287		0.8844	0.8131	
HM	0.7334	0.9166		0.8784	0.7334	
H	0.6308	0.8721		0.8067	0.6308	
BI	0.6858	0.8968	0.5871	0.8454	0.6858	0.0389
BI	0.6777	0.8936	0.3367	0.8409	0.6777	0.2294
UB	0.6753	0.9121	0.3714	0.8816	0.6753	0.2297

Source: Primary Data, processed by the researcher, 2023.

Convergent validity aims to determine the validity of each relationship between indicators and their latent variables. In convergent validity, the parameters used for testing are based on three criteria: the Average Variance Extracted (AVE), communality, and factor loading values. The rule of thumb for AVE and communality parameters is above 0.50, and for factor loading values, it should be above 0.70. However, the indicators with loading values between 0.5 and 0.7 should not be removed from their constructs as long as the AVE and communality values are above 0.5 (Mohd Dzin & Lay, 2021). Based on Table 2, the results indicate that the AVE and communality values for the constructs are greater than 0.50, demonstrating that convergent validity has been satisfied.

Hypothesis Testing Research

In the Hypothesis Testing Research sub-section, this study will examine the formulated hypotheses to explore and confirm the relationships between the variables under investigation.

Table 2. Path Coefficient (Mean, STDEV, T-Values)

Variable Correlation	*Original Sample* (O)	*Sample Mean* (M)	*Standard Deviation* (STDEV)	*Standard Error* (STERR)	*T Statistics* (|O/STERR|)
PE -> BI	0,052	0,051	0,030	0,030	1,733
EE -> BI	0,164	0,164	0,025	0,025	6,586
SI -> BI	0,188	0,185	0,028	0,028	6,784
PV -> BI	0,017	0,014	0,033	0,033	0,508
HM -> BI	0,335	0,339	0,041	0,041	8,176
H -> BI	0,251	0,252	0,026	0,026	9,610
BI -> UB	0,580	0,576	0,030	0,030	19,029

Source: Data Processing with PLS, 2023.

In testing the research hypotheses, the researcher employed a one-tailed hypothesis with a T-statistics value. If T or T-Statistics ≥ 1.64, then the alternative hypothesis is supported. Conversely, if the T or T-Statistics ≤ 1.64, the alternative hypothesis is considered not supported. Based on the processed data results obtained by the researcher, valid tables have been generated.

Tabel 3. The Results of Hypothesis Testing

	Hypothesis	T-Statistic	Results
H1	Performance Expectancy has a direct and significant positive influence on Behavioral Intention.	1,733	Accepted
H2	Business Expectancy has a direct and significant positive influence on Behavioral Intention. Social	6,586	Accepted
H3	Influence has a direct and significant positive influence on Behavioral Intention.	6,784	Accepted
H4	Price Value has a direct and significant positive influence on Behavioral Intention.	0,508	Rejected

H5	Hedonic Motivation has a direct and significant positive influence on Behavioral Intention.	8,176	Accepted
H6	Habit has a direct and significant positive influence on Behavioral Intention.	9,610	Accepted
H7	User Behavior has a direct and significant positive influence on User Behavior.	19,029	Accepted
H7	User Behavior has a direct and significant positive influence on MSMEs Performance.	31,871	Accepted

2.2 DISCUSSION

Performance Expectation on MSMEs Behavioral Interest in Using Information Technology (H1)

Performance expectation in information technology implies that users perceive information technology as beneficial, enabling them to accomplish goal-oriented tasks (Venkatesh et al., 2016). This finding aligns with research by Chao and Horas et al. (Chao, 2019; Horas et al., 2023), which explains that performance expectation significantly influences behavioral intention. Chopdar et al. (Chopdar et al., 2018) also discovered that performance expectation has a significant impact on Behavioral Interest in adopting mobile shopping applications in India and the US. In various cultural contexts, Performance Expectation has been found to exhibit a significant positive relationship with Behavioral Interest in adopting m-commerce (Kalinić et al., 2021). Moreover, the study suggests that fostering a positive perception of information technology's performance benefits can contribute to greater behavioral interest and adoption in the context of larger MSMEs. In conclusion, larger MSMEs believe that information technology can be beneficial, as evidenced by a greater intention to use it.

Business Expectation on MSMEs Behavioral Interest in Using Information Technology (H2)

Business Expectation is described as the "level of ease associated with consumer technology use" (Venkatesh et al., 2003). It is measured by extending the perception of user-friendliness from the Technology Acceptance Model with items capturing the complexity and general ease of use. This result is consistent with the study by Alalwan et al. (Alalwan et al., 2018), explaining that Effort Expectancy significantly influences the intention and adoption of Jordanian customers of internet banking. Chopdar et al. (Chopdar et al., 2018) also found that Effort Expectancy has a significant impact on Behavioral Interest in adopting mobile shopping applications in India and the US. Similarly, Effort Expectancy has been found to have a significant positive relationship with Behavioral Intention to use mobile applications (Vahdat et al., 2021).Moreover, the study suggests that business expectations, reflecting the perceived ease of use and simplicity in technology, play a crucial role in determining users' behavioral intentions to adopt information technology. This aligns with the notion that a user-friendly and easy-to-use technology interface enhances users' willingness to engage with information technology in the context of larger MSMEs.

The Influence of Social Impact on Behavioral Interest in Using Information Technology (H3)

Social influence, as defined by Venkatesh et al. (Venkatesh et al., 2003)as "the extent to which an individual feels that they need to implement a new system," encapsulates the impact of social pressures and external opinions on an individual's decision to adopt a new technology. In the context of this study, social influence refers to how the perceptions and opinions of peers or family members can shape individual attitudes toward mobile banking adoption (Baptista & Oliveira, 2015). The study supports the notion that external factors, such as social pressure, play a significant role in influencing customer perceptions and behaviors related to engaging with mobile banking services (Ho et al., 2020).This finding is consistent with the research conducted by Lin et al. (Lin et al., 2020), where they observed a positive effect of Social Impact on the intention to adopt mobile payment services. Further supporting evidence is seen in studies conducted in Malaysia, where Social Impact was found to be significantly and positively correlated with the intention to use m-commerce (Ashraf et al., 2021). This positive relationship between social impact and the intention to use information technology is reinforced by findings from other studies conducted by (Ho et al., 2020; Singh & Srivastava, 2020) In conclusion, the study affirms that social influence, emanating from external opinions and social pressures, holds considerable sway in shaping users' intentions and interest in adopting information technology, specifically in the context of larger MSMEs.

Value for Money on MSMEs Behavioral Interest in Using Information Technology (H4)

Value for money, conceptualized as the "consumer cognitive trade-off between perceived benefits from the application and the monetary costs to use it" (Venkatesh et al., 2012), becomes a crucial factor influencing Behavioral Interest when customers perceive that the benefits of using information technology (IT) outweigh the associated costs. This aligns with findings from Bapista and Oliviera (Baptista & Oliveira, 2015), who, in their research integrating the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) with cultural moderators, identified performance expectations, hedonic motivation, and habits as the most significant antecedents to Behavioral Interest in using mobile banking.However, in the context of MSMEs in Malang City, the perceived value for money offered by information technology does not uniformly align with the gains anticipated by MSMEs players. The study reveals a varied perspective among MSMEs players, as some consider the costs of using IT relatively high, while others find them affordable. Factors such as limited capital, simple business management, and a market that can still be reached conventionally contribute to the overall perception that the value-for-money variable does not consistently yield positive results for the behavioral interest of MSMEs in adopting information technology.

Hedonic Motivation on Behavioral Interest in Using Information Technology (H5)

Venkatesh et al. (Venkatesh et al., 2012) define hedonic motivation as the feelings of joy, delight, or pleasure induced by the application of technology. In simpler terms, the more enjoyable a technology is, the more acceptable it becomes to customers. This finding aligns with the research by Hew et al. (Hew et al., 2015), which observed that hedonic motivation positively influences behavioral interest in using mobile applications. Consistent with Hew et al., a more comprehensive analysis of relevant literature in customer behavior and technology acceptance, as expressed by Venkatesh et al. (2012), identifies factors like play, excitement, and pleasure capturing hedonic motivation as significant determinants of customer technology acceptance.Moreover, understanding the emotional aspects of MSMEs while using information technology is crucial. MSMEs owners who experience joy and delight in the utilization of technology are more likely to be motivated to adopt it extensively. These positive emotions contribute to a favorable behavioral interest in incorporating information technology within their business operations. Therefore, in this study, the emotional component of hedonic motivation emerges as a vital determinant of MSMEs behavioral interest in adopting information technology.

Habit on Behavioral Interest in Using Information Technology (H6)

The concept of habit is defined as the extent to which individuals tend to perform actions automatically due to learning (Jeyaraj et al., 2023). In this context, habit or the establishment of habit reflects the dual outcomes of past experiences (Venkatesh et al., 2012), with the regularity of past behavior considered a primary determinant of current behavior (Ajzen & Schmidt, 2020). This finding aligns with research conducted by Baptista and Oliveira (Baptista & Oliveira, 2015) in their study of mobile banking in Mozambique, where habit was identified as a significant influencer of behavioral interest and deemed the most crucial antecedent of usage behavior. In a separate study conducted in Malaysia, Hew et al. (Hew et al., 2015) identified habit as the strongest predictor of behavioral interest in using mobile applications.In conclusion, the stronger the habit formed and the more accustomed individuals become to using information technology, the greater their interest in incorporating it into their daily activities. Therefore, in this study, habit emerges as one of the determinants of MSMEs behavioral interest in adopting information technology.

Behavioral Interest of MSMEs towards Using Information Technology (H7)

The Use Behavior construct has been considered in the literature as the primary construct describing the determinants of computer usage behavior, treated as a special case (Davis et al., 1989). UTAUT2 does not explicitly define usage behavior, and in the original specification, it is assessed through items available in the registered system (Venkatesh et al., 2003). The primary antecedent of usage behavior in the UTAUT model is Behavioral Intention (BI), having a direct impact on an individual's actual use of a given technology. This construct is rooted in the Theory of Reasoned Action, defined as the '*measure of the strength of an individual's intention to perform a specific behavior'* (Hale et al., 2002).This finding aligns with the research by Ajzen and Schmidt (Ajzen & Schmidt, 2020) in the Theory of Planned Behavior, which indicates a strong correlation between behavioral interest and actual behavior. Chopdar et al. (Chopdar et al.,

2018) also discovered that behavioral interest positively influences consumer information technology usage behavior. MSMEs players in Malang openly express their interest in using information technology due to the benefits they gain, ease of use, and other supporting reasons, leading them to decide to incorporate information technology into their business operations. Based on the explanations above, this study concludes that MSMEs behavioral interest is a robust determinant of consumer information technology usage behavior.

Behavioral Interest of MSMEs towards MSMEs Performance (H8)

MSMEs performance refers to the overall achieved results compared with predetermined and mutually agreed-upon work results, targets, objectives, or criteria in a business entity, which includes asset and revenue criteria outlined in the law. This concept aligns with the explanation of the economic growth process in the context of endogenous dynamics, incorporating innovation and technological change as dynamic endogenous variables alongside capital, labor, and land, known as the new growth theory (Potts, 2019).According to Bi et al. (Bi et al., 2017), enhancing MSMEs performance through the utilization of information technology resources and capabilities provides a competitive advantage, fostering rapid growth and the development of core competencies compared to competitors. Narada et al. and Prasetyo (Naradda Gamage et al., 2020; Prasetyo, 2023b) also emphasizes the need for MSMEs to leverage IT to enhance competitiveness, especially in the era of globalization, where the business landscape is increasingly competitive and global.In Malang, the use of information technology by MSMEs has resulted in increased sales, facilitated by the widespread and massive dissemination of information about their products. This sales growth corresponds to an increase in capital, demonstrating achievable market growth and continuous evolution in marketing efforts. Most importantly, MSMEs businesses in Malang experience increased profits as a result of their improved performance.

III. CONCLUSION

Based on the formulated problems, the results of analysis, and hypothesis testing conducted in the previous chapters, the following conclusions can be drawn from the research:

1. Adaptation of Information Technology Utilization in MSMEs in Malang City
   a. The performance expectation on behavioral interest in using information technology is positive and significant. MSMEs actors in Malang City believe that the use of information technology is beneficial for managing MSMEs.
   b. Business expectations have a positive and significant influence on MSMEs behavioral interest in using information technology. MSMEs actors do not find it difficult to learn and gain experience with information technology in managing MSMEs.
   c. Social influence has a positive and significant impact on behavioral interest in using information technology. MSMEs behavioral interest and decision to adopt information technology are strongly influenced by both positive and negative opinions from their external environment in using Information Technology.
   d. The construction of value for money does not have a positive and significant influence on MSMEs behavioral interest in using information technology. This occurs because information technology provides affordable prices that are suitable for what MSMEs actors will get.
   e. The construction of hedonic motivation has a positive and significant impact on MSMEs behavioral interest in using information technology. This means that MSMEs actors enjoy and feel happy using information technology that can enhance self-satisfaction and prestige in this condition.
   f. The habit construction from UTAUT 2 has a positive and significant effect on MSMEs behavioral interest in using information technology. This happens because the more often people use information technology, the more skilled they become.
   g. The MSMEs behavioral interest construction has a positive and significant effect on MSMEs actual usage behavior in using information technology. This means that if MSMEs actors have a strong interest in using information technology, it will greatly encourage actual behavior to use information technology.

2. Impact of Information Technology Utilization on MSMEs Performance in Malang City
The construction of MSMEs usage behavior is positive and significant for MSMEs performance. This means that if MSMEs actors have good usage behavior abilities in using information technology, it will greatly help improve MSMEs performance.

In light of the research findings, the following concise recommendations are proposed for the benefit of Micro, Small, and Medium Enterprises in Malang City, along with the government and stakeholders. Firstly, MSMEs in Malang City should adapt to information technology to stay competitive. Secondly, the formation of MSMEs communities based on their fields is crucial for collaborative growth. Thirdly, implementing business classes is essential for MSMEs to stay informed and relevant. Lastly, the Malang City government is encouraged to map MSMEs potential, leveraging local wisdom for accelerated development.

IV. ACKNOWLEDGMENTS

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