

# Innovations

## **Navigating Tradition in a Digital World: Analyzing the Impact of Digital Transformation of Igbo Apprenticeship Business Model on the Survivability of SMEs in Southeast Nigeria**

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**Abstract:** *The study investigated the Impact of Digital Transformation of Igbo Apprenticeship Business Model on the Survivability of SMEs in Southeast Nigeria. The specific objectives were: to analyse the extent to which digital infrastructure affect the financial performance of SMEs within the Igbo apprenticeship system; to assess the degree to which adoption of digital tools enhance market adaptability of SMEs operating within the Igbo apprenticeship system; and finally, to examine the extent to which effective management of cultural resistance to change affect innovation capacity among SMEs in Southeast Nigeria. The study adopted survey research design with a total population of 197 SMEs. Cronbach's Alpha Statistic was used to test the reliability of the instrument, of which the results were all above 90% respectively. Data analysis was conducted using regression analysis with the aid of SPSS. The study found that Digital Transformation of Igbo Apprenticeship Business Model has a significant positive impact on the Survivability of SMEs in Southeast Nigeria. Based on the findings of the study, it was recommended, inter alia, that policymakers and stakeholders prioritize initiatives aimed at fostering comprehensive digital transformation within the Igbo apprenticeship system to enhance the survivability and resilience of SMEs in Southeast Nigeria.*

**Keywords:** Limited Digital Transformation; Igbo Apprenticeship System; Survivability of SMEs

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## 1.0 Introduction

The complex interplay between tradition and modernity has long been a subject of scholarly inquiry, particularly within the context of socio-economic systems. In Southeast Nigeria, where the Igbo apprenticeship system has flourished for generations, this complex interplay takes on a profound significance. Rooted in cultural heritage and steeped in communal values, the Igbo apprenticeship system embodies a centuries-old tradition that has facilitated the transfer of skills, knowledge, and resources from one generation to the next (Emeali et al, 2023).

In exploring the impact of limited digital transformation of the Igbo apprenticeship system, the survivability of Small and Medium Enterprises (SMEs) in Southeast Nigeria emerges as a critical source of concern. SMEs represent the lifeblood of local economies, serving as engines of innovation, employment generation, and economic diversification (Ugwu et al, 2023). As such, their ability to thrive or falter within the evolving socio-economic landscape holds profound implications for community well-being, economic resilience, and cultural continuity (Osita et al, 2022; Ugwu, & Mbah, 2022).

The survivability of SMEs encapsulates a multilayered construct, encompassing various dimensions of organizational resilience, sustainability, and adaptability (Emeali et al, 2023). It encompasses not only the capacity of SMEs to withstand external shocks and navigate turbulent market conditions but also their ability to seize emerging opportunities, leverage available resources, and evolve in response to changing consumer preferences and technological advancements. Within the framework of the Igbo apprenticeship system, the survivability of SMEs is intricately intertwined with the dynamics of tradition, digitization, and socio-economic context (Igwe 2021; Igwe et al, 2020). The extent to which SMEs can leverage traditional apprenticeship networks, access digital tools and platforms, and adapt their business models to emerging market realities profoundly shapes their prospects for long-term viability and growth (Igwe et al, 2023; Igwe et al, 2018).

Moreover, the survivability of SMEs is deeply influenced by broader structural factors, including regulatory frameworks, infrastructure development, access to finance, and institutional support (Okafor et al, 2023). These external conditions exert a significant impact on the operational environment of SMEs, influencing their ability to navigate the challenges posed by limited digital transformation while capitalizing on the opportunities it presents (Nosike, 2024; Omol, 2023; Bryda & Costa, 2023; Qureshi, 2022). Thus, as the digital age sweeps across global landscapes, challenging established norms and reshaping traditional paradigms (Enaifoghe, 2021), the Igbo apprenticeship system finds itself at a crossroads.

The advent of digital technologies promises unprecedented opportunities for economic growth and innovation (Ghosh et al, 2022; Dornberger, & Schwaferts, 2021; Attaran, 2020; Brock, & Von Wangenheim, 2019; Dąbrowska ET AL, 2022), yet it also presents formidable challenges to age-old customs and practices (Budagov, & Sukhova, 2020; Deloitte, 2014; Gong, 2023; Grover et al, 2022; and, Hai et al, 2021). In this milieu, the limited digital transformation of the Igbo apprenticeship system emerges as a focal point of inquiry, raising profound questions about its impact on the survivability of Small and Medium Enterprises (SMEs) in Southeast Nigeria.

This research seeks to explore this complex interplay. Thus, by delving into the relationship between tradition and digital transformation, it seeks to elucidate the extent to which the limited integration of digital technologies within the Igbo apprenticeship system influences the viability and resilience of SMEs operating within its framework. Through an analysis encompassing historical perspectives, socio-economic factors, and technological considerations, this study aims to provide valuable insights into the challenges and opportunities inherent in navigating tradition in a rapidly digitizing world. In doing so, the study aspires to contribute to the development of strategies and interventions aimed at promoting sustainable growth, fostering cultural preservation, and ensuring the continued vitality of SMEs within the rich tapestry of Igbo tradition. Thus, the main objective of this study is to analyse the Impact of Digital Transformation of Igbo Apprenticeship System on the Survivability of SMEs in Southeast Nigeria. Thus, the study addresses the following three research questions below:

- RQ1:** To what extent does access to digital infrastructure affect the financial performance of SMEs within the Igbo apprenticeship system?
- RQ2:** To what degree does adoption of digital tools enhance market adaptability of SMEs operating within the Igbo apprenticeship system?
- RQ3:** To what extent does effective management of cultural resistance to change affect innovation capacity among SMEs in Southeast Nigeria?

By exploring the three research questions above, the study aims to achieve several key objectives and contribute significantly to the existing body of knowledge. First, through investigating the extent to which access to digital infrastructure affects the financial performance of SMEs within the Igbo apprenticeship system, the study seeks to provide insights into how investments in digital connectivity can influence economic outcomes for small businesses. By elucidating the relationship between

digital infrastructure and financial performance, the research contributes to understanding the mechanisms through which digitalization can drive economic growth and resilience in traditional apprenticeship contexts. Second, by assessing the degree to which adoption of digital tools enhances the market adaptability of SMEs operating within the Igbo apprenticeship system, the study aims to shed light on the transformative potential of digital technologies for small businesses. Understanding how digital tools enable SMEs to respond effectively to market dynamics, customer preferences, and competitive pressures can inform strategies for enhancing business agility, expanding market reach, and sustaining long-term competitiveness within traditional socio-economic frameworks. Third, through investigating the extent to which effective management of cultural resistance to change affects innovation capacity among SMEs in Southeast Nigeria, the study seeks to uncover the socio-cultural barriers and enablers shaping the adoption of digital technologies within traditional apprenticeship systems and managing them appropriately to aid in the digitalisation process. By exploring the interplay between cultural norms, values, and attitudes towards innovation, the research contributes to understanding the complexities of technology adoption in culturally rich and diverse contexts. Moreover, by identifying strategies for addressing cultural resistance and fostering innovation, the study can inform efforts to promote inclusive and sustainable digital transformation initiatives in traditional communities. Thus, through the study's empirical analysis and theoretical insights, the research contributes to both academic literature and practical policy discourse by informing strategies for promoting economic development, cultural preservation, and technological innovation in Southeast Nigeria and beyond.

## **2.0 Literature Review**

### **2.1 Access to Digital Infrastructure and Financial Performance of SMEs**

Extant literatures have variously examined access to digital infrastructure and the financial performance of Small and Medium Enterprises (SMEs) across diverse socio-economic contexts. For instance, Shettima & Sharma (2020) conducted a study on the Impact of Digitalisation on Small and Medium Enterprises in Nigeria and found that digitalisation exerts a significant impact on Small and Medium Enterprises of Nigeria, as it automates both product and process, resulting in enhanced quality and production. Similarly, Ihenyen et al (2023) investigated the impact of digital transformation on the growth of businesses in Nigeria, particularly small and medium-sized enterprises (SMEs), and found a notable positive relationship between the adoption of digital transformation and the financial performance of SMEs. Additionally, Mushtaq et al (2022) examined the association between ICT adoption, innovation, and SMEs' access to finance using the World Bank Enterprise Survey (WBES) data of 171,000 SMEs from 149 countries between 2006 and 2020.

SMEs' access to finance was dissected into two components, comprising basic and advanced access to finance. Basic access to finance was gauged by two indicators; namely, the firm's bank account and line of credit from a financial institution, while advanced access was determined by whether the firm's investments and working capital were financed by the bank. The findings confirm that ICT adoption diminishes information asymmetry between SMEs and banks, thereby rendering banks more inclined to extend credit and finance projects, as well as the working capital needs of innovative SMEs. These results suggest that SMEs with greater access to and utilisation of new technologies are more likely to secure financial resources from banks. Teng et al (2022) explored the Impact of the Digital Transformation of Small- and Medium-Sized Listed Companies on Performance: Based on a Cost-Benefit Analysis Framework. The study illustrated that the digital transformation of small- and medium-sized listed companies correlates positively with operational performance.

## **2.2 Adoption of Digital Tools and Market Adaptability of SMEs**

Several empirical studies have delved into the adoption of digital tools and market adaptability among Small and Medium Enterprises (SMEs) across diverse contexts. For example, Oladimeji et al. (2014) scrutinised the Benefits of Information and Communication Technologies (ICTs) on Practices of Enterprises from a Nigerian perspective, revealing a significant positive impact of digital tool adoption on SME productivity. Bruce et al. (2023) investigated Digital Marketing Adoption's effect on SMEs' Sustainable Growth in Ghana, with findings indicating that while attitudes towards digital marketing didn't influence adoption intention, subjective norms and perceived behavior control did, with a direct positive link between subjective norms and actual digital marketing use. Radicic&Petković (2023) explored digitalization's Impact on Technological Innovations in German SMEs, finding heterogenous effects depending on digitalization form and innovation type, moderated by internal R&D activities. Vrontis et al. (2022) focused on the Adoption of Digital Technologies by Indian SMEs for Sustainability and Value Creation, highlighting digital tech's potential to enhance economic sustainability and social value, while Salah & Ayyash (2024) examined E-commerce Adoption in Palestinian SMEs, revealing positive effects on marketing performance, influenced by AI integration, innovation culture, and customer tech-savviness within the TOE framework. These studies collectively underscore the multifaceted dynamics shaping SMEs' digital transformation and its implications for market adaptability and sustainability, offering insights crucial for policymaking and managerial strategies in fostering SME growth and resilience.

### **2.3 Effective Management of Cultural Resistance to Change and Innovation Capacity among SMEs**

Various research studies have explored cultural resistance to change on innovation capacity within Small and Medium Enterprises (SMEs), providing insights germane to the context of Southeast Nigeria. Zhang et al. (2020) delved into comprehending how organizational culture shapes innovation performance from a management perspective, uncovering the mediating role of social and performance management contexts in the influence of factors like psychological safety, collectivism, and power distance on innovation performance. Their survey of 301 employees in Chinese organizations illuminated pathways for firms to cultivate management contexts conducive to bolstering innovation performance. Similarly, Khan et al. (2023) investigated the Impact of Cultural, Marketing, and Product Innovations on SMEs' Performance, focusing on the interconnections between cultural, product, and marketing innovations in SMEs, particularly within Pakistan's manufacturing hub in Multan. With a sample of 291 SME workers and owners, their regression analysis unveiled significant relationships among these variables, shedding light on the intertwined dynamics influencing SME performance. These studies collectively underscore the significance of addressing cultural resistance within SMEs and implementing strategies to foster innovation capacity, offering valuable guidance for managerial practices aimed at enhancing organizational performance and resilience in dynamic environments. Bilichenko et al. (2022) conducted a study on Managing Strategic Changes in Personnel Resistance to Open Innovation in Companies. The primary objective was to develop theoretical, methodological, and applied foundations and practical recommendations for managing strategic changes in personnel resistance to open innovations in companies. The study utilised comparative and economic-statistical analysis to assess the level of unique, threshold, and average opportunities for resistance to changes in open innovation, with experts—middle managers of five branches of international car companies in Poland: Fiat, Opel, Toyota, Volkswagen, and Volvo—contributing through questionnaires. The study concluded that resistance to open innovations typically arises at the individual level of personnel and is addressed through informational and motivational measures. It highlighted system resistance as a threat to strategic change management in companies such as Opel and Toyota, leading to the development of a predominantly fiduciary corporate culture that minimises resistance to open innovation. The approbation of approaches of the companies under study demonstrated a combination of different types of strategies in current conditions.

### 3.0 Methodology

The study adopted a survey research design. The population of the study comprised 197 selected SMEs in South-East Nigeria. The study adopted stratified sampling technique to reach out to different strata (Abia, Anambra, Ebonyi, Enugu and Imo States, respectively) using a structured questionnaire. The research instrument was validated using face and content validity. Cronbach’s Alpha Statistic was used to test the reliability of the instrument, which indicated a reliability coefficient of 90%. Regression analysis was used for data analysis.

### 4.0 Data Analysis, Results/ Implication and Discussion

#### 4.1 Data Analysis

**Ha1:** Access to digital infrastructure has no significant effect on the financial performance of SMEs

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.382	.825		7.739	.000
	Access to Digital Infrastructure	.714	.043	.763	16.481	.000

a. Dependent Variable: Financial Performance of SMEs

In the Coefficient Table above, the beta weight measures how much the outcome variable increases (in standard deviations) when the predictor variable is increased by one standard deviation assuming other variables in the model are held constant. These are useful measures to rank the predictor variables based on their contribution in explaining the outcome variable. Thus, in this case, **Access to digital infrastructure** is contributing **0.763** to explain **Financial Performance of SMEs**. Under the **T and Sig. Columns**, the analysis provides the t-value and p-value used in testing the hypothesis that the coefficient/parameter is 0 (that is, the test of significance). Coefficients having p-values less than alpha are statistically significant. Here, the alpha is 0.05 (5%). Thus,  $p(.000) < 0.05$  is statistically significant.

**Ha2:** Adoption of digital tools has no significant effect on market adaptability of SMEs

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.100	.781		9.086	.000
	Adoption of Digital Tools	.687	.041	.768	16.747	.000

a. Dependent Variable: Market Adaptability of SMEs

In the Coefficient Table above, the beta weight measures how much the outcome variable increases (in standard deviations) when the predictor variable is increased by one standard deviation assuming other variables in the model are held constant. These are useful measures to rank the predictor variables based on their contribution in explaining the outcome variable. Thus, in this case, **Adoption of Digital Tools** is contributing **0.768** to explain **Market Adaptability of SMEs**. Under the **T and Sig. Columns**, the analysis provides the t-value and p-value used in testing the hypothesis that the coefficient/parameter is 0 (that is, the test of significance). Coefficients having p-values less than alpha are statistically significant. Here, the alpha is 0.05 (5%). Thus,  $p(.000) < 0.05$  is statistically significant.

**Ha3:** Effective Management of Cultural resistance to change has no significant influence on innovation capacity among SMEs

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.264	.790		9.193	.000
	Effective Management of Cultural Resistance to Change	.674	.041	.759	16.286	.000

a. Dependent Variable: Innovation Capacity Among SMEs



In the Coefficient Table above, the beta weight measures how much the outcome variable increases (in standard deviations) when the predictor variable is increased by one standard deviation assuming other variables in the model are held constant. These are useful measures to rank the predictor variables based on their contribution in explaining the outcome variable. Thus, in this case, **Effective Management of Cultural Resistance to Change** is contributing **0.759** to explain **Innovation Capacity Among SMEs**. Under the **T and Sig. Columns**, the analysis provides the t-value and p-value used in testing the hypothesis that the coefficient/parameter is 0 (that is, the test of significance). Coefficients having p-values less than alpha are statistically significant. Here, the alpha is 0.05 (5%). Thus,  $p(.000) < 0.05$  is statistically significant.

#### 4.2 Results and Implication

- I. Access to digital infrastructure had a significant effect on the financial performance of SMEs ( $\beta = 0.763$ ); ( $p < 0.05$ ). This implied that Improved access to digital infrastructure positively impacts the financial performance of SMEs, highlighting the necessity of technological investment for economic growth.
- II. Adoption of digital tools has significant effect on market adaptability of SMEs ( $\beta = 0.768$ ); ( $p < 0.05$ ). This finding implied that adoption of digital tools significantly enhances the market adaptability of SMEs, indicating that embracing technology is crucial for maintaining competitiveness in dynamic business environments.
- III. Effective Management of Cultural resistance to change has significant influence on innovation capacity among SMEs ( $\beta = 0.759$ ); ( $p < 0.05$ ). This implied that effective management of cultural resistance to change plays a significant role in bolstering innovation capacity among SMEs, emphasizing the importance of proactive strategies to address organizational culture for fostering innovation and adaptation.

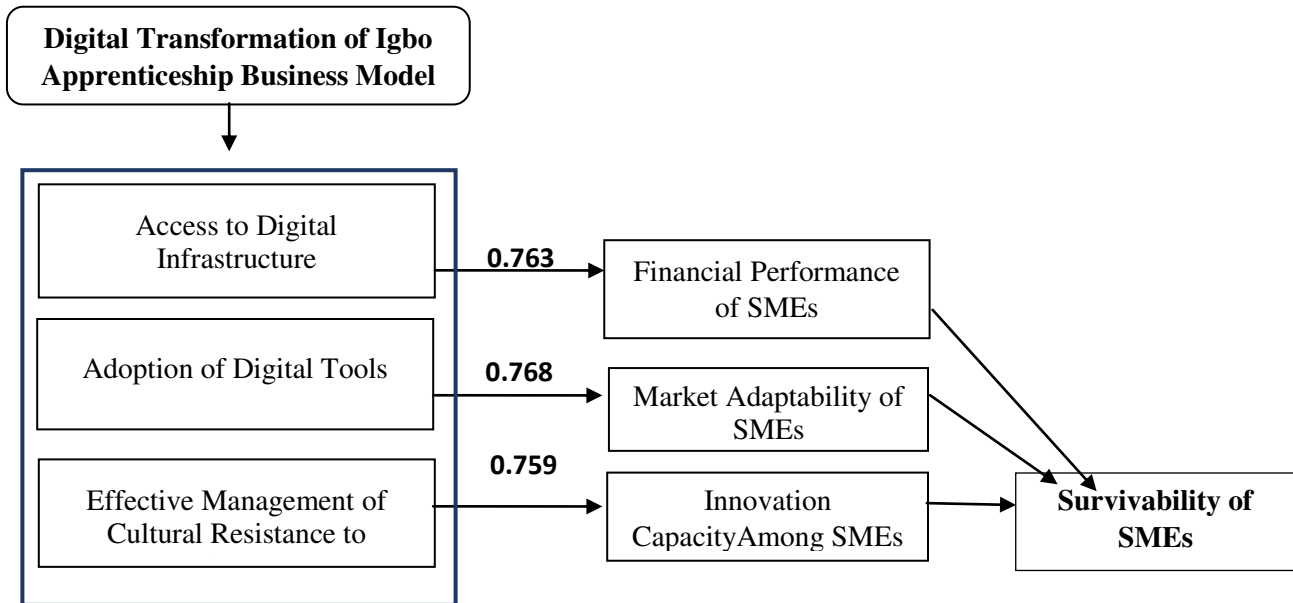


Figure 4.2: Conceptual Model Showing the Results

### 4.3 Discussion of Findings

#### 4.3.1 Access to digital infrastructure and financial performance of SMEs

The findings of our study align with the findings of some of the previous research studies indicating that access to digital infrastructure has a significant effect on the financial performance of Small and Medium Enterprises (SMEs). Shettima & Sharma (2020) revealed in their study on the Impact of Digitalisation on Small and Medium Enterprises in Nigeria that digitalization significantly affects SMEs by automating both product and process, leading to improved quality and production, which could translate into enhanced financial performance. Similarly, Ihenyen et al. (2023) found a positive relationship between digital transformation adoption and the financial performance of SMEs in Nigeria, emphasizing the pivotal role of digitalization in driving SME growth. Moreover, Mushtaq et al. (2022) demonstrated that ICT adoption reduces information asymmetry between SMEs and banks, thereby increasing SMEs' access to finance, particularly for innovative ventures. This underscores the importance of digital infrastructure in facilitating financial resources for SMEs, as echoed by the current study's finding on the significant effect of digital infrastructure on SMEs' financial performance. Furthermore, Teng et al. (2022) highlighted the positive correlation between the digital transformation of small- and medium-sized listed companies and operational performance, further emphasizing the beneficial impact of digitalization on SMEs' overall performance metrics. Overall, these findings collectively underscore the critical role of digital infrastructure in enhancing the financial performance and operational capabilities of SMEs, providing

valuable insights for policymakers and practitioners seeking to promote SME growth and sustainability through digitalization initiatives.

#### **4.3.2 Adoption of digital tools and market adaptability of SMEs**

Our study's findings align with the findings of some of the previous research studies indicating that adoption of digital tools has a significant positive effect on the market adaptability of Small and Medium Enterprises (SMEs). Oladimeji et al. (2014) highlighted the significant positive impact of digital tool adoption on SME productivity from a Nigerian perspective, underscoring the importance of technological integration for enhancing business operations. Similarly, Bruce et al. (2023) emphasized the role of subjective norms and perceived behavior control in influencing digital marketing adoption among SMEs in Ghana, indicating the relevance of internal factors in driving digital tool uptake and utilization. Radicic&Petković (2023) provided insights into the heterogenous effects of digitalization on technological innovations in German SMEs, suggesting that the type of digitalization and innovation activities can influence market adaptability differently. Moreover, Vrontis et al. (2022) demonstrated the potential of digital technologies to enhance economic sustainability and social value creation among Indian SMEs, further highlighting the transformative impact of digital adoption on market adaptability and business sustainability. Additionally, Salah & Ayyash (2024) revealed the positive effects of e-commerce adoption on marketing performance in Palestinian SMEs, emphasizing the importance of factors such as AI integration and innovation culture within the Technology-Organization-Environment (TOE) framework. Collectively, these studies underscore the complex interplay between digital transformation and market adaptability within SMEs, providing valuable insights for policymakers and managers seeking to navigate the digital landscape and foster sustainable growth in SME sectors globally.

#### **4.3.3 Effective Management of Cultural resistance to change and innovation capacity among SMEs**

Our study's findings resonate with some previous research studies, highlighting the substantial influence of managing cultural resistance to change on the innovation capacity of Small and Medium Enterprises (SMEs). Zhang et al. (2020) provided insights into how organizational culture shapes innovation performance, highlighting the mediating role of social and performance management contexts in influencing innovation outcomes. Their study illuminated pathways for cultivating management contexts conducive to bolstering innovation performance, underscoring the importance of addressing cultural factors in enhancing SME innovation capacity.

Similarly, Khan et al. (2023) explored the impact of cultural innovations on SME performance, emphasizing the interconnected dynamics between cultural, product, and marketing innovations in driving organizational success. Their findings underscored the significance of addressing cultural resistance within SMEs to foster innovation capacity, aligning with the current study's focus on effective management of cultural resistance to change. Additionally, Bilichenko et al. (2022) delved into managing strategic changes in personnel resistance to open innovation, highlighting the individual-level nature of resistance and the importance of addressing it through informational and motivational measures. The study's emphasis on addressing system resistance as a threat to strategic change management resonates with the current findings on the significance of managing cultural resistance within SMEs to enhance innovation capacity. Overall, these studies collectively underscore the critical role of effective management of cultural resistance to change in fostering innovation capacity among SMEs, providing valuable insights for managerial practices aimed at enhancing organizational performance and resilience in dynamic environments.

## **5.0 Conclusion and Recommendation**

### **5.1 Conclusion**

Flowing from the findings, the study therefore concluded that Digital Transformation of Igbo Apprenticeship System has a significant positive impact on the Survivability of SMEs in Southeast Nigeria.

### **5.2 Recommendation**

- I. Given the significant impact of access to digital infrastructure on the financial performance of SMEs, policymakers and business leaders should prioritize investments in digital infrastructure development. This includes initiatives to improve internet connectivity, expand access to technology resources, and provide training programs to enhance digital literacy among SME owners and employees. By investing in digital infrastructure, SMEs can unlock new opportunities for growth, improve operational efficiency, and enhance their competitiveness in the marketplace.
- II. Recognizing the positive effect of digital tool adoption on market adaptability among SMEs, stakeholders should implement initiatives to promote the widespread adoption of digital tools and technologies. This could involve providing incentives for SMEs to invest in digital solutions, offering training and support programs to facilitate technology adoption, and fostering collaboration between SMEs and digital service providers. By embracing

digital tools, SMEs can enhance their agility, responsiveness to market changes, and ability to innovate, thereby strengthening their market position and sustainability.

- III. Building on the significance of effective management of cultural resistance to change in enhancing innovation capacity among SMEs, organizational leaders should prioritize efforts to cultivate a culture that embraces change and innovation. This involves promoting open communication, fostering a supportive and inclusive work environment, and providing opportunities for employees to contribute ideas and participate in decision-making processes. By nurturing a culture that values innovation and embraces change, SMEs can foster creativity, adaptability, and resilience, enabling them to thrive in dynamic and competitive business landscapes.

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