

An Investigation on the Effects of Digital Transformation on Small and Medium-Sized Enterprises (SMEs) in Malaysia

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Abstract

Exploring the effects of digital transformation on SMEs in Malaysia is the primary goal of this research. Small and medium-sized enterprises (SMEs) confront possibilities and threats as they adjust to the digital transformation brought about by the fast development of technology and the growing digitalization of business activities. The purpose of this research is to identify the complex impacts of digital transformation on small and medium-sized enterprises (SMEs) in Malaysia by conducting a thorough literature review, case study evaluation, and data analysis. Changes in the competitive environment, organizational structure, customer interaction tactics, and company operations are some of the important elements that will be examined. The research will also look at what makes small and medium-sized enterprises (SMEs) use digital technology and how that affects their performance. The findings of this study will add to the existing literature on digital transformation and will also be useful for politicians, business owners, and practitioners in the field who are trying to figure out how to make it in the digital world.

Keywords: Entrepreneurship, Micro business, Management, Digital Era.

Introduction

In the rapidly evolving digital landscape of today, small, and medium-sized businesses (SMEs) confront both enormous opportunities and formidable challenges. The massive wave of digital transformation is changing entire industries, and small and medium-sized enterprises (SMEs) must adapt to survive. Adopting digital technologies and strategies can benefit SMEs in many ways, from increased innovation and market penetration to better customer engagement and operational efficiency. However, managing the challenges of digital transformation necessitates careful planning, deliberate execution, and

continuous learning. This journey, despite its challenges, has the potential to propel SMEs to new heights, boosting their competitiveness and guaranteeing their long-term survival in a rapidly evolving digital landscape. The digital revolution has permanently altered the business landscape, and SMEs are no exception. This revolutionary wave presents a unique chance for unrivalled growth and progress, but if not managed carefully, it also carries risk. The use of automation, cloud computing, and data analytics by SMEs can result in better decision-making, more efficient operations, and more solid customer relationships. Higher productivity, lower costs, and ultimately a stronger competitive advantage are the outcomes of this. Digital tools also give SMEs access to new markets, which helps them increase their consumer base and global reach. There are challenges along the way to digital transformation, though. Taking on new technologies requires careful planning, a substantial financial commitment, and ongoing adaptation. Small and medium-sized businesses (SMEs) need to make sure that their workforce is equipped with the skills necessary to adjust to a constantly changing environment, cultivate an innovative culture, and improve their digital capabilities. Ultimately, a SME's capacity to effectively navigate the digital transformation process is contingent upon its strategic vision, learning mindset, and ability to adjust to a rapidly evolving digital landscape, in addition to its adoption of new technologies. Small and medium-sized businesses (SMEs) are facing a pivotal moment as the digital landscape continues to expand at an unprecedented rate. This revolutionary era presents an enticing offer: on the one hand, innovative technologies with the potential to drive unprecedented growth and advancement include automation, cloud computing, and data analytics. Conversely, there is a real chance of falling behind in a rapidly evolving environment. Adopting digital transformation offers many enticing benefits, such as enhanced decision-making, streamlined processes, stronger relationships with customers, and entry into new markets. Higher productivity, lower costs, and eventually a stronger competitive advantage are the immediate results of these developments. However, there are impediments to this path. Implementing complex technology requires a lot of planning, a significant financial outlay, and ongoing flexibility. To effectively navigate this intricate terrain, SMEs must cultivate a creative environment, equip their personnel with relevant education, and establish robust digital competencies. Ultimately, a small and medium-sized enterprise's capacity to effectively embrace a digital world hinge not only on integrating new technologies but also on possessing a well-defined strategic vision, a relentless pursuit of knowledge, and an inherent ability to adjust and thrive in a dynamic digital environment. It is now imperative for SMEs to embrace this digital transformation journey to ensure their long-term sustainability and survival in a world where technology is advancing and becoming more connected by the day. The business landscape has been permanently changed by the digital revolution, offering small and medium-sized enterprises (SMEs) a rare chance for expansion and change (McKinsey Global Institute, 2018). SMEs can reap a host of advantages by adopting digital technologies like cloud computing, AI, and data analytics, such as improved customer engagement, increased operational efficiency, broader market reach, and increased potential for innovation (World Economic Forum, 2020). Nevertheless, many SMEs encounter difficulties in effectively navigating their digital transformation journey, even despite the potential advantages. These obstacles include a lack of digital skills and knowledge, a lack of resources, and trouble modifying organizational cultures and structures to make room for new technologies (Eurostat, 2020). As a result, for many SMEs, there is a big disparity

between the potential benefits of digital transformation and their actual realization (OECD, 2021).

Problem Statement

SMEs are facing a crucial decision: they can either seize the opportunity presented by digital technology to achieve unparalleled expansion or else they run the risk of slipping behind in the quickly changing digital market. Although digital transformation has many potential advantages, such as improved customer engagement and efficiency as well as increased market reach and innovation (McKinsey Global Institute, 2018), many SMEs encounter major obstacles that prevent them from achieving these advantages. The lack of resources is one of the main challenges (Eurostat, 2020). Their inability to build the digital infrastructure and invest in the technologies needed for successful digital adoption is hampered by their limited financial resources. Furthermore, a lot of SMEs lack the human capital—that is, the knowledge and abilities needed to use digital tools and carry out strategic initiatives—that is required (World Bank, 2020). A major obstacle to fully utilizing the potential of digital technologies is this lack of experience. Furthermore, according to Hitt and Brynjolfsson (2019), organizational inertia can be a major obstacle. Internal barriers to change may arise from the resistance of current organizational structures and cultures to the adoption of new technologies and procedures. This resistance can prevent employees from supporting change initiatives and make it more difficult for them to be implemented successfully. Furthermore, SMEs may find it difficult to find and implement the right technological solutions (Gartner, 2021). It can be challenging to navigate the wide range of options available, and it can be particularly challenging to find solutions that are suited to the needs of industries and levels of technological proficiency. Furthermore, careful planning and execution are needed for the process of integrating these solutions into the current workflows and systems. Lastly, different industries and geographical areas may experience very different effects from digital transformation (World Bank, 2020). The impact and success of digital initiatives can be influenced by various factors, including industry regulations, infrastructure accessibility, and cultural contexts. This unequal playing field makes things harder for SMEs in some industries and areas, which emphasizes the need for specialized assistance and intervention plans. Unlocking the full potential of digital transformation for small and medium-sized enterprises (SMEs) requires tackling these crucial challenges. This research aims to provide useful insights for academics and practitioners by examining the elements that lead to a successful digital transformation, the long-term impact on performance and sustainability, and the difficulties faced by various sectors and regions. In the end, this knowledge will aid in the creation of more potent empowerment strategies for SMEs, empowering them to close the gap between potential and reality and capitalize on the transformative power of digital technologies for sustainability and long-term success.

Research Objectives

- Determine and examine the essential elements that lead to SMEs' successful digital transformation.
- Examine how the digital transformation will affect key performance indicators (KPIs) that measure the sustainability and performance of SMEs over the long run.

Review Of Literature

(Olivia Fachrunnisa, Ardian Adhiatma, Najah Lukman, Md Noh Ab. Majid, 2020) Towards SMEs' digital transformation: The role of agile leadership and strategic flexibility. This article examines important ideas, theories, and research on the digital transformation of small and medium-sized businesses (SMEs). The key concept from this article is digital transformation, the procedure of incorporating digital technologies into different areas of a company, and the crucial roles that strategic adaptability and agile leadership play in enabling this change. Theoretical frameworks such as the Resource-Based View (RBV) and Dynamic Capabilities Theory are used to comprehend how SMEs' competitive advantage is influenced by their digital capabilities and flexibility. The research explores the relationship between strategic flexibility and competitive advantage, looks at the real-world application of agile leadership principles, and analyses case studies of successful digital transformations in SMEs. This article also covers issues about organisational resistance to change, the return on investment in digital transformation, and the delicate balance between strategic flexibility and stability. The authors also probably go over frameworks like Scrum and Kanban in the context of agile methodologies, and they look at trends like using digital ecosystems and data-driven decision-making for small and medium-sized enterprises. Now, we know that customer demand is very important to SMEs' business improvement. (Mandviwalla, and Flanagan 2021) Small Business Digital Transformation in the Context of the Pandemic. This article examines important ideas, theories, and research on the digital transformation of small and medium-sized businesses (SMEs) in the context of the pandemic. Digital transformation, small businesses, and the pandemic's effects are the three main ideas covered in the paper Small Business Digital Transformation in the Context of the Pandemic. The double movement that small businesses enact is discussed by the authors. This movement involves major innovation, radical performance improvement, operational changes, and the consideration of new digital business models, all of which can happen quickly and flexibly. The significance of ecosystems in assisting small businesses with their digital transformation journey is also highlighted in the paper. To guide their research, the writers consult theories like the new organising logic of digital innovation and service-dominant logic. The study on the effects of digital transformation on small businesses and the difficulties they encounter in implementing new technologies is cited in the paper. The usefulness of digital transformation in addressing small businesses' problems, the role of ecosystems in assisting small businesses, and the necessity of continuing research to direct small businesses' double movement in their digital transformation journeys are some of the major topics of discussion and controversy. (Sindhu Yoga, Dyah Permatha Korry, Dhian Rani Yulianti, 2019) Information Technology Adoption on Digital Marketing Communication Channel. The use of websites and social media by marketers in the tourism industry to increase brand awareness and attract customers is one of the key concepts, theories, studies, debates, and controversies surrounding the adoption of information technology in digital marketing communication channels for SMEs in Bali. Other debates centre on the potential benefits of integrating traditional and digital marketing communication, such as reaching a wider audience and improving customer engagement, and the effectiveness and return on investment (ROI) of digital marketing strategies compared to traditional methods. Furthermore, research has looked at the difficulties SMEs have using and interpreting data from digital marketing channels as well as their incomplete integration of traditional and digital marketing initiatives. Castagna et al (2020) Customer Knowledge Management in SMEs Facing Digital Transformation. In small and medium-sized businesses (SMEs) in the luxury jewellery industry, the study focuses on customer knowledge

management (CKM) and how it intersects with customer relationship management (CRM) and knowledge management (KM). According to the survey results, SMEs in the creative industries are more likely to use conventional technologies for CKM procedures than cutting-edge digital ones. This research emphasises the difficulties small and medium-sized enterprises (SMEs) have adjusting to the quick changes in technology and the lack of assistance from IT vendors in selecting appropriate digital systems. The study also makes the case that to provide SMEs with digital solutions that are specifically suited to their needs, it is necessary to fortify the relationship between KMS providers and businesses through direct channels and establish new market niches. (Lisa Savey, Yousef Ibrahim Daradkeh, and Luis Borges Gouveia, 2020) The Success of Startups Through Digital Transformation. The success factors of digitally transformed startups are discussed in the article. It clarifies the distinction between digital transformation and digitalization and how startups can use technology's low entry barriers to disrupt established businesses by implementing new business models and strategies. The success of startups during the digital transformation is emphasised in the article as being highly dependent on their customers. Three important ideas are customer centricity, low entry barriers, and digital transformation. The essay discusses theories and research on the subject, such as how digital transformation can cause startups to upend established businesses and the significance of implementing an alternative business plan. Whether digital transformation is required for startups to succeed and whether customer centricity is the most crucial component in startup success during digital transformation are two of the main arguments and controversies.

Research Design

A quantitative approach will be used in the research design, with a focus on gathering original data via surveys or experiments. The goal of the study is to find and comprehend relationships between variables by concentrating on correlational analysis. This strategy will make it possible to examine relationships and patterns in the data, offering insightful knowledge about how various factors interact. The goal of the research is to find any potential correlations between the variables under study by methodically gathering quantitative data. This methodology will facilitate exhaustive scrutiny of the data, thereby permitting an extensive analysis of the correlations and trends that surface, thereby culminating in a more profound comprehension of the research subject.

Data Analysis

Age of the Respondents

	Frequency	Percent
16-20	36	18.0
21-25	113	56.5
26-30	39	19.5
31-35	10	5.0
36 and above	2	1.0
Total	200	100.0

Interpretation: Of the respondents, 18% are between 16 and 20 years old, and 56.5% are between 21 and 25 years old. Secondly, 19.5% of those surveyed are in the 26–30 age

range. Just 1% of respondents are older than 36, whereas 5% of respondents are between the ages of 31 and 35.

Note: IV= Digital Transformation & DV = SME's

Reliability for IV: Digital Transformation

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.920	.920	10

In summary, Cronbach's Alpha values of 0.920 (both for the original and standardized items) indicate that the 10 items in your scale have high internal consistency. This is generally considered a positive indicator, indicating that the scale's items measure a similar construct or trait. It implies that the scale is consistent and reliable in measuring whatever it is intended to measure.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
42.73	37.688	6.139	10

The mean of 42.73 indicates that the respondents scored around this value on average across the ten items. The variance of 37.688 represents the spread or dispersion of scores around the mean. The standard deviation of 6.139 is the square root of the variance and provides a more readable measure of the score distribution. These statistics, with a total of ten items, provide an overview of the central tendency and variability of responses on your scale. These measures can help you understand the distribution and characteristics of the scores on your survey or assessment items.

ANOVA with Friedman's Test

	Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People	749.988	199	3.769	23.747	.005
Between Items	7.262 ^a	9	.807		
Within People	Residual	1791	.303		
	Total	1800	.306		
Total	1300.488	1999	.651		

In conclusion, the analysis investigates differences between groups (Between People) and within individuals across different items (Within People: Between Items). Because the Friedman's Chi-Square for "Between People" is not provided, the interpretation of group differences is limited. The test for differences in responses to different items is significant, indicating that item responses vary. The Kendall's coefficient of concordance is extremely low, indicating that there is little agreement among rates or observers.

Reliability test for DV- Small and Medium Enterprise (SME)

200 cases are initially considered valid, and none are excluded based on the listwise deletion criteria. Typically, listwise deletion entails removing cases with missing values in any of the variables used in the analysis. As a result, all cases are retained for analysis in this context, and none are excluded due to missing data.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.921	.923	10

In summary, Cronbach's Alpha values of 0.921 and 0.923 indicate that the 10 items on your scale have a high level of internal consistency, both in their original form and when standardized scores are considered. This is a good sign for the scale's reliability because it shows that the items consistently measure the same underlying concept. Cronbach's Alpha is commonly used by researchers to assess the reliability of a scale, particularly in psychology and social sciences.

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
42.68	36.773	6.064	10

In summary, the average score for all items is 42.68. The variance of 36.773 indicates the degree to which scores are spread or dispersed around the mean. A higher variance indicates that the responses are more variable. The standard deviation of 6.064 is the square root of the variance and provides a more readable measure of the range of scores. It shows how much individual scores typically differ from the mean. The number of items is: This indicates that your scale contains ten items. These statistics, taken together, provide information about the central tendency and variability of responses on your scale. They assist researchers and analysts in understanding the distribution and characteristics of the scores on your survey or assessment items.

ANOVA with Friedman's Test

		Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People		731.788	199	3.677	37.501	.000
	Between Items	11.002 ^a	9	1.222		
Within People	Residual	517.098	1791	.289		
	Total	528.100	1800	.293		
Total		1259.887	1999	.630		

In summary, the significant Friedman's Chi-Square in the "Between Items" section indicates that responses to different items differ significantly. Without Friedman's Chi-

Square and significance values for "Between People," it is difficult to draw definitive conclusions about differences between groups or individuals in this study.

Correlations

Correlations			
		IV_MEAN	DV_MEAN
	Pearson Correlation	1	.791**
IV_MEAN	Sig. (2-tailed)		.000
	N	200	200
	Pearson Correlation	.791**	1
DV_MEAN	Sig. (2-tailed)	.000	
	N	200	200

In summary, the correlation between IV_MEAN and DV_MEAN is strong (0.791). The correlation is statistically significant at the 0.01 level, implying that it did not happen by chance. The results for both IV_MEAN and DV_MEAN is based on a sample size of 200 observations. This data shows a strong and statistically significant relationship between the mean values of your dataset's independent and dependent variables. The positive correlation means that as one variable's mean rises, so does the mean of the other variable.

Regression

Variables Entered-Model	Variables Entered	Variables Removed	Method
1	IV_MEAN ^b	.	Enter

Model 1 includes a linear regression analysis with the dependent variable DV_MEAN. The independent variable, IV_MEAN, is entered into the model via the "Enter" method, which means it is included without regard for variable selection criteria. The dot (.) indicates that no variables are removed in this model. The analysis is focused on understanding the relationship between IV_MEAN and DV_MEAN, and the model includes all requested variables. This is a common output from a linear regression analysis, and it provides insight into the variables included and the method used to enter them into the model.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.791 ^a	.625	.623	3.72143	.625	330.402	1

Model Summary			
Model	Change Statistics		Durbin-Watson
	df2	Sig. F Change	
1	198 ^a	.000	2.086

In summary, the coefficient of determination (R) between predicted and actual values is 0.791. IV_MEAN accounts for approximately 62.5% of the variability in DV_MEAN. The change in R Square is statistically significant (p-value 0.05), indicating that including IV_MEAN improves the model significantly. The Durbin-Watson statistic is 2.086, indicating that the residuals have no significant autocorrelation. This output shows how well the independent variable (IV_MEAN) predicts the dependent variable (DV_MEAN).

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	4575.760	1	4575.760	330.402	.000 ^b
1	Residual	2742.115	198	13.849		
	Total	7317.875	199			

In summary, the regression model containing the constant and IV_MEAN is statistically significant. The F-statistic (330.402) corresponds to a very low p-value (0.000), indicating that the model fits well and that at least one predictor is significantly related to the dependent variable (DV_MEAN). The residual sum of squares and the total sum of squares provide information about the variability in DV_MEAN that the model does not explain, as well as the total variability.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	9.303	1.855		5.016	.000
1					
IV_MEAN	.781	.043	.791	18.177	.000

In summary, the constant intercept is 9.303, which is statistically significant (p-value = 0.000). The slope (IV_MEAN) is 0.781, indicating that a one-unit change in IV_MEAN results in a one-unit change in DV_MEAN. It is statistically significant as well (p-value = 0.000). The standardized coefficient (Beta) for IV_MEAN is 0.791, which measures the relationship's strength and direction in standard deviation units. These coefficients aid in understanding the estimated relationships in the regression model between the predictors (constant and IV_MEAN) and the dependent variable (DV_MEAN).

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	17.1136	48.3575	42.6750	4.79518	200
Residual	-17.32761	11.01568	.00000	3.71207	200
Std. Predicted Value	-5.331	1.185	.000	1.000	200
Std. Residual	-4.656	2.960	.000	.997	200

In summary, predicted Value: This column contains information about the predicted values for DV_MEAN, such as their range and distribution. The difference between the observed and predicted values, including their range and distribution, is referred to as residual. The fact that the mean residual is close to zero indicates that the model is well-fitted. Std. Predicted Value provides standardized predicted values in standard deviation units, which are useful for assessing the influence of individual data points. Std. Residual provides standardized residuals, which express residuals in standard deviation units, assisting in the identification of outliers or unusual observations. These statistics are useful for evaluating the regression model's performance, identifying potential outliers, and comprehending the distribution of residuals around the predicted values.

Practical Implications

The survey's findings have significant ramifications for policymakers and Small and Medium-sized Enterprises (SMEs), as they will have a profound impact on their operational approaches and strategies related to digital transformation. Businesses and policymakers can make informed decisions that promote growth, improve efficiency, and boost overall competitiveness by acquiring a comprehensive understanding of the dynamics of digital adoption and its effects on SMEs. The survey's findings serve as an invaluable guide for SMEs as they navigate the complexities of the digital environment. Companies can use these results to first evaluate how prepared they are for the digital transformation, pinpointing areas that require work and deciding which digital technology purchases to make first. Furthermore, the insights assist small and medium-sized enterprises (SMEs) in creating customized digital transformation plans that correspond with their unique business goals, available resources, and market circumstances. In addition to offering useful advice on efficient implementation techniques, such as integration into workflows, business processes, and employee training programmes, the survey helps small and medium-sized enterprises (SMEs) choose the best digital tools for their industry, operations, and clientele. Furthermore, by using the findings, SMEs can create key performance indicators (KPIs) to monitor the development and results of their digital transformation projects. Concurrently, the survey's findings provide policymakers with the basis upon which to base evidence-based decisions designed to foster an atmosphere in which SMEs adopt digital transformation. With the use of these insights, policymakers can create initiatives and programmes that are specifically designed to meet the needs and difficulties that SMEs encounter while undergoing a digital transformation. One way to make sure SMEs have the resources and tools they need to succeed in the digital age is to prioritize strategic infrastructure investments, such as broadband connectivity, digital literacy training, and technology support services. Moreover, the results guide the development of regulations that support fair competition in the digital market, protect data privacy, and foster innovation. Essentially, this survey offers SMEs and policymakers a comprehensive framework to work together to navigate and take advantage of the transformative potential of the digital landscape.

Contributions to Knowledge

This survey has the potential to add a great deal of diverse and meaningful information to the body of knowledge currently available about how digital transformation affects small and medium-sized businesses (SMEs). The results of this thorough investigation should allow us to gain a deeper understanding of the complex factors influencing SMEs' adoption and spread of digital technologies. The survey will contribute to our understanding of the various paths small and medium-sized enterprises take on this transformative journey by illuminating the incentives, obstacles, and contextual subtleties that push these businesses towards digital integration. In addition, the survey is expected to stimulate the creation of new theories and models that are particular to digital transformation in the context of SMEs. The intricate details unique to small and medium-sized businesses will be reflected in these contributions, offering a more precise and contextually appropriate framework for comprehending the challenges of digital transformation in this industry. The results present a challenge to preconceived notions regarding the general advantages of digital transformation for SMEs, which may broaden our viewpoints and highlight the need for a more detailed comprehension of the various effects on various SME kinds. Apart from its immediate implications, this survey has the potential to lay a strong foundation for future research projects. It is anticipated that the insights produced will act as a spur for additional research into areas of interest, like how supply chain management, customer relationship management, and employment practices in SMEs will be affected by digital transformation. All told, the survey stands to improve SMEs' actual implementation of digital transformation strategies as well as help create evidence-based policies that effectively assist and direct their digital transformation. To conclude, the survey's contributions go beyond the present situation and open the door to further developments in our comprehension of the complex relationship between digital transformation and small and medium-sized enterprises.

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