

# The Digital Transformation of SMEs: The Difference between East and West in China

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## Abstract

With the advancement and widespread application of digital technology, digital transformation (DT) is becoming an increasingly important aspect in the long-term development of Small and Medium-Sized Enterprises (SMEs). However, the facts show that the digital transformation process is delayed and has a significant impact on SMEs in China, particularly during the recent epidemic era. During the DT, Chinese SMEs face numerous problems and difficulties. Therefore, the purpose of this study is to compare the features of SMEs' digital transformation in China between economically developed eastern coastal districts and the economically undeveloped western mainland district. The advancement of research on the digitalization of SMEs is critical to the practical value of boosting the digital economy in China. This study employed a questionnaire to survey 318 SMEs in China. The result discovered a considerable disparity between SMEs in different regional economies: (a) Eastern SMEs are more advanced than western SMEs in terms of digitization, digital investment, digital awareness and maturity levels of DT, (b) SMEs in various industries demonstrate diverse present digitalization conditions; the tertiary industry demonstrated the most significant transformation will, while the secondary industry demonstrated better transformation process execution. As a result, the findings provide the Chinese government with practical implications on how to deal with post-epidemic economic shifts as well as policy recommendations for the long-term sustainable development of SMEs.

**Keywords:** SMEs, Digital Transformation, Digital Technology, East in China, West in China

## Introduction

The modern world is experiencing VUCA (volatile, uncertain, complex, and ambiguous) conditions (Hadar et al., 2020). The world was at war, and epidemics such as covid-19, mpox, and others were spreading all over the place. As of March 28, 2022, there have been over 480 million confirmed illnesses and over six million deaths documented in approximately 200 nations (Organization, 2022). According to a Globe Bank analysis, as global central banks raise interest rates in reaction to inflation, the world may be on the verge of a worldwide recession in 2023, as well as a spate of financial crises in emerging markets and developing countries. As a result, many countries are suffering economic consequences connected to production and consumption, international trade, and supply chain (Wang & Su, 2020). The current crisis is posing significant challenges to all industries. Numerous firms are witnessing a drop in demand; some industries are experiencing labor shortages, sales are stopped, and different

operational limitations have put many businesses at risk of insolvency, with some even forced to close. Small and medium-sized businesses, in particular, face more survival pressures than larger corporations (Bai et al., 2021).

SMEs are the most dynamic organizations, significantly contribute to global economic development, generate a large number of employment opportunities, and account for 90 percent of all businesses worldwide. In 2021, China had more over 40 million SMEs, which provided 80% of the country's employment opportunities, 70% of its creative products, and 50% of its total corporate income tax (Jiang & Hui, 2021). In the post-epidemic age, SMEs are developing innovative and creative digital value offerings. According to the report, when businesses are digitalized, the economy becomes more efficient. Accelerating the digital transformation of the business model is crucial and cannot be delayed.

The research on the process of digital transformation of SMEs covers from technology application and integration to organizational reform and system transformation. Lee contends that digital transformation is the application of technology in production. In addition, the new digital technologies include the Internet of Things (IOT), additive manufacturing, big data, artificial intelligence, cloud computing, augmented and virtual reality (Rindfleisch et al., 2017). Vial regards digital transformation as a process that compels businesses to alter their value creation and innovation strategies. According to some experts, digitalization can have far-reaching effects in terms of new players, institutions, and value propositions (Henriette et al., 2015). Xiao Jinhua contends that the transition of firms from industrialization to digitalization is a process that include system transformation, as opposed to merely modifying the same system (Xiao et al., 2019).

Vision 2035 of the Chinese government advocates boosting digital development and constructing a digital China. 53% of the plans in the 14th five-year plan of the central ministries and commissions for the digital transformation of the manufacturing industry include digital transformation as a major task or key project, ensuring the digital transformation of companies in terms of digital infrastructure, research and development of key technologies, and layout of the digital industry (Zhou et al., 2022). Since 2022, 31 provincial, regional, and municipal governments in China have incorporated the digital transformation of SMEs into their work priorities and aggressively pursued new opportunities to assist SMEs in enhancing their digital transformation (SME Analysis of Digital Transformation Report, 2021).

Digital transformation (DT) has become an efficient means of boosting competitiveness and aiding an organization's survival in a hostile external pandemic environment, resulting in a favorable impact on business performance for an increasing number of businesses (Chen et al., 2021). Despite the perception that SMEs are agile, dynamic, less rigid, and more relaxed (Calipinar & Ulas, 2013), only 25% of Chinese SMEs have undergone digital transformation. There is a paucity of study addressing the current state of DT for SMEs in China, particularly examining the difficulties, policy demands, applications of digital technologies, and drivers when small businesses encounter DT. It is also essential to determine the effect of regional economic disparities on the DT of Chinese SMEs. In the post-epidemic period, the purpose of this article is to gain a deeper understanding of the current position of DT SMEs in China, as

well as their unique characteristics in different economic sectors. Also, offer advice to SMEs and support government measures to assist Chinese SMEs in promoting growth and identifying a clear route to a swift recovery from the epidemic.

This paper's remaining sections are organized as follows: First, a literature review on the digital transformation of SMEs is presented. The description of our research methodology, data gathering, and data analysis procedures follows. Then, this study present and discuss our findings. The study finish with a discussion of the implications and limitations of our research, as well as suggestions for future study.

### **Background**

Eastern China and western China have major economic contrasts. The eastern region, including Beijing, Shandong, Zhejiang, Shanghai, Guangdong, and Fujian, is located near the sea and consists primarily of fertile and economically developed plains and hills. Western China, in contrast, consists of high mountain plateaus and deserts, such as Gansu, Xinjiang, Qinghai, Tibet, with plainly inconvenient traffic and meagre resources, and a lagging economic development. Since the Chinese government implemented the open and reform policy, eastern China has significantly benefited from the good economic strategy and the government's strong backing. The gap in economic progress between eastern and western China has widened (Wang & Wang, 2019).

### **Digitalization and Digital Transformation (DT)**

Some study fields are unclear about the distinction between digitalization and digital transformation. Numerous research has examined digitalization and DT. Some contend that digitalization is the first step towards DT for businesses. Enterprises cannot advance if they do not employ digital technologies such as Big Data, the Internet of Things (IOT), Cloud Computing, mobile office, etc. to discover additional value-creation opportunities (Rupeika-Apoga & Bule, 2022). Daniel Kreiss argues that digitization is an alternative way to live a social life that encompasses digital communication and infrastructures (Brennen & Kreiss, 2016). However, this definition focuses more on the individual's social life through the use of technologies such as email and social media. Additionally, Gartner comments in on this word. According to Gartner's definition, "digitalization is the use of digital technology to transform a company model and create new revenue and value-generating opportunities." This is the transition to a digital business (Bloomberg, 2018).

The first phase of company digitalization can be realized using digital technology. However, technology is simply one of the aspects required to maintain a company's competitiveness in the digital era. According to researchers, digital transformation varies from digitalization in that the firm's strategy and organizational structure do not rely solely on technology to develop new value creation paths, but also on other competencies (Svahn et al., 2017). Jason Bloomberg contends that DI transcends digitalization, indicating that it is a larger word referring to the customer-driven company transformation that must encompass digital technology and organizational change (Bloomberg, 2018). Berghaus contends that DI comprises both process digitization with an emphasis on efficiency and digital innovation with an emphasis on upgrading current physical products with digital capabilities (Berghaus & Back, 2016). Some feel that digital innovation entails organizations employing digital

technology to achieve substantial business improvement or to develop a new business model (Singh & Hess, 2020). In this study, which concur that DI is a process that tries to improve an object by inducing substantial changes in its attributes by combining information, computation, communication, and connectivity technologies (Vial, 2021).

### **The Digital Transformation of SMEs**

China had more than 40 million SMEs in 2021, which produced 80% of the country's employment possibilities, 70% of its creative products, and 50% of its total corporate income tax. They are the most active and have the most potential for growth (Jiang & Hui, 2021). The study of the digital transformation of SME's is seen from a variety of scholarly angles. Antonello (2019) believes there are four levels of digital transformation strategies for SMEs: (1) digital awareness, (2) digital requirement, (3) digital collaboration and (4) digital transition. In addition, they believe that digital technology is not the sole factor influencing the degree of DT. Human and social capital are equally crucial to the transformation of SMEs (Garzoni et al., 2020).

Some claimed that SMEs could implement the DT using certain programmer and software. The SMEs need external assistance to invest in communication technology and integrate digital technology into their business strategies (Ulas, 2019). However, the researcher frequently analyzed this occurrence based on the immutable qualities of their own nation. In certain nations, digital transformation is sluggish due to a lack of resources and expertise. Zhang contends, in pursuit of Chinese SMEs, that technical and environmental elements have a beneficial impact on organizational capacity and can speed up the DT process. Moreover, staff skills can influence the organizational capabilities and success of DT favorably (Zhang et al., 2020).

Even if the majority of businesses recognize the necessity and significance of the DT, the hurdles and issues that impeded the growth of the DT hampered corporate profit from the DT. Scholars felt that SMEs face obstacles during three phases: the initiation phase, the execution phase, and the coordination phase (Westerman et al., 2011). Some suggested that insufficient IT architecture, lack of technical skills, unsuitable business procedures, and high implementation risks and costs are the most significant obstacles (Zu Forschung, 2016). Albrecht argued that people's reluctance toward DT and the greatest impediments are cultural barriers that have traditionally been overlooked by businesses (Albrecht, 2015). In addition, Azhari provides a model that describes the maturity levels of organizations' digital transformation, as depicted in Figure 1. This model consists of eight dimensions: strategy, leadership, products, operations, culture, people, governance, and technology (Azhari et al., 2014).

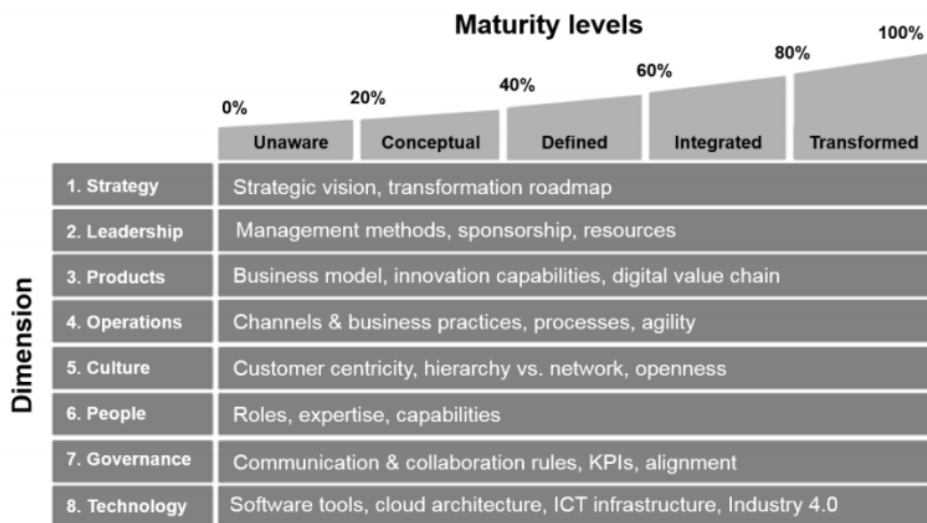


Figure 1: Maturity levels of Digital Transformation

Sources: Adapted from Azhari et al (2014)

### Methodology and Data Collection

This study used a descriptive study survey method to identify the differences of digital transformation of SMEs in East and West in China during the post-epidemic era. The company's staff directly involved in digital transformation participated in this survey. A total of 400 questionnaires were distributed from SMEs between the east and west region. Respond rate of 318 sets of the questionnaire were returned by respondents (79.5% response). The questionnaire is based on the literature study and including diversity aspects to explore under the surface characteristics and differences (Hoa & Tuyen, 2021; Rupeika-Apoga et al., 2022; Teng et al., 2022).

This anonymous survey will be performed online between August and September 2022 with the support of the Small and Medium Enterprise Association and the China Questionnaire Network. The questionnaire consists of two parts and twelve questions related to firm location, firm size, industry, DT current situation, drivers, difficulties, the digital technology already used, the demand for digital suppliers, the attractiveness of the government's digital policy, management characteristics of a successful transition, the characteristics of successful enterprises in transition, and the rate of DT investment. The detail is shown in Table 1. Based on the 318 responses, China's economically developed eastern coastline areas account for 53% of the results, while the economically underdeveloped western accounts for 47%. The sample consisted of 20.44% super micro-companies (50), 27.04% micro-companies (50-100), 26.73% small-companies (100-200), and 25.79% medium-sized businesses (200-250). And the industry standard is based on National Statistics Bureau criteria. The first industry (agricultural, forestry, animal husbandry, and fishing) accounts for 31% of the total, the second industry (industry) accounts for 36%, and the third industry (distribution and services) accounts for 32%.

Table 1

*The Questionnaires on The Digital Transformation of SMEs*

Items	Questions	Answers
The backgrounds of the SMEs	<ul style="list-style-type: none"> <li>● Where is your company? In developed eastern coastal areas or economically underdeveloped inland?</li> </ul>	<ul style="list-style-type: none"> <li>➤ East region</li> <li>➤ West region</li> </ul>
	<ul style="list-style-type: none"> <li>● How many workers do your company have?</li> </ul>	<ul style="list-style-type: none"> <li>➤ <math>&lt; 50</math></li> <li>➤ <math>50 \leq X &lt; 100</math></li> <li>➤ <math>100 \leq X &lt; 200</math></li> <li>➤ <math>200 \leq X &lt; 250</math></li> </ul>
	<ul style="list-style-type: none"> <li>● Which industry does your company operate in?</li> </ul>	<ul style="list-style-type: none"> <li>➤ Primary Industry</li> <li>➤ Secondary Industry</li> <li>➤ Tertiary Industry</li> </ul>
Digital cognition and demand	<ul style="list-style-type: none"> <li>● What is the status of your company's digital transformation?</li> </ul>	<ul style="list-style-type: none"> <li>➤ not at all</li> <li>➤ A little, but we'd like to try more.</li> <li>➤ Tried digital transformation in part of our business and achieved a minor success</li> <li>➤ Have completed digital transformation on a larger scale</li> <li>➤ Having completed the digital transformation</li> </ul>
	<ul style="list-style-type: none"> <li>● What are the driving forces behind your company's digital transformation?</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reducing company operating costs</li> <li>➤ Increase business revenue</li> <li>➤ Obtain national policy subsidies</li> <li>➤ Increase production efficiency</li> <li>➤ Supply Chain Optimization</li> <li>➤ Improve the competitiveness of business, Enabling data-driven business</li> </ul>
	<ul style="list-style-type: none"> <li>● What are the difficulties or challenges of digital transformation?</li> </ul>	<ul style="list-style-type: none"> <li>➤ Not having enough capital to invest</li> <li>➤ No matching digital talent</li> <li>➤ Lack of training related to digital transformation knowledge and fewer channels of understanding</li> <li>➤ Weak digital infrastructure of the company</li> <li>➤ Poor understanding of digital application scenarios and the</li> </ul>



		<p>integration point of enterprise business</p> <ul style="list-style-type: none"> <li>➤ No understanding of national digital transformation policies</li> </ul>
	<ul style="list-style-type: none"> <li>● What digital technologies does your business already use?</li> </ul>	<ul style="list-style-type: none"> <li>➤ Big Data</li> <li>➤ Cloud Computing</li> <li>➤ Artificial Intelligence</li> <li>➤ Internet of Things</li> <li>➤ Cybersecurity</li> <li>➤ Mobile Office</li> <li>➤ Video Conferencing</li> <li>➤ E-commerce</li> </ul>
	<ul style="list-style-type: none"> <li>● What services do you expect from digital suppliers?</li> </ul>	<ul style="list-style-type: none"> <li>➤ Provide low cost digital tools or services, solutions.</li> <li>➤ Increase digital marketing to expand sales market and customer base</li> <li>➤ Provide digital training to help companies build digital talents.</li> <li>➤ Create a digital ecological platform to help SMEs digitize and combine industry and finance for win-win cooperation</li> <li>➤ Improve enterprise production efficiency and reduce enterprise labor cost</li> <li>➤ Assist in declaring national policy subsidies</li> </ul>
	<ul style="list-style-type: none"> <li>● How would you like the country to support and promote the digital transformation of SMEs?</li> </ul>	<ul style="list-style-type: none"> <li>➤ Provide tax incentives</li> <li>➤ Give incentives to introduce digital talents</li> <li>➤ Develop industrial digitalization standards and guide the digital transformation path of enterprises</li> <li>➤ Increase the construction of digital transformation infrastructure</li> <li>➤ Promote digital technology cooperation between universities and research institutions and SMEs</li> <li>➤ Subsidize SMEs digital technology application and RD expenses</li> </ul>
	<ul style="list-style-type: none"> <li>● Do you think that digital</li> </ul>	<ul style="list-style-type: none"> <li>➤ not important</li> </ul>

	transformation is vital in the current situation?	<ul style="list-style-type: none"> <li>➤ important but not urgent</li> <li>➤ important</li> <li>➤ very important</li> <li>➤ most important and necessary</li> </ul>
	● Which factor determines the success rate of digital transformation for the companies themselves?	<ul style="list-style-type: none"> <li>➤ A clear digital strategy</li> <li>➤ A clear digital transformation path</li> <li>➤ Having a professional digital talent pipeline</li> <li>➤ Strong technology development capability</li> <li>➤ Maturity of digital technology application</li> <li>➤ Special policy subsidies from the state</li> </ul>
	● How much of digital transformation capital investment as a percentage of annual sales?	<ul style="list-style-type: none"> <li>➤ ≥5%</li> <li>➤ 3% &lt; X &lt; 5%</li> <li>➤ 1% &lt; X ≤ 3%</li> <li>➤ ≤1%</li> <li>➤ No idea</li> </ul>

**Data Analysis and Finding**

In the course of the digital transformation process, this study discovered there are a great deal of distinctions as well as parallels between the east and west in China.

***The Background of Participant SMEs***

To obtain data, a questionnaire survey was administered. 57.55% of this survey's respondents are from the east region. 55.2% of SMEs in the East area employ between 200 and 250 workers. In contrast, the West region of the corporation comprises 42.5% of the total responders, with the majority (59.5%) consisting of fewer than fifty employees. And the majority of SMEs in the East area are active in the manufacturing industry, which accounts for 81.9%, whereas the majority of SMEs in the West region are engaged in the service industry, which accounts for 60.0%. The specifics are shown in Figure 2.



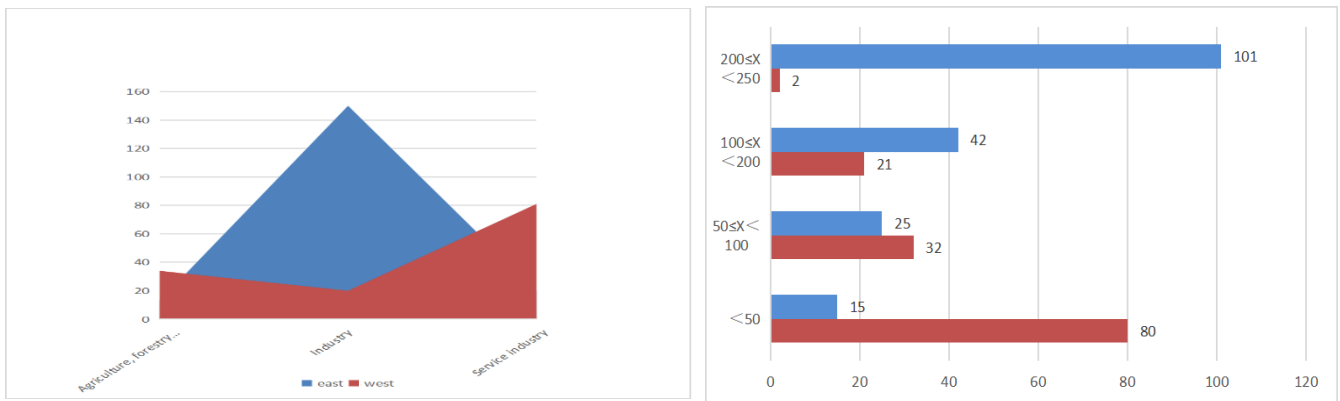


Figure 2: The Background of Participate SMEs

### The Drivers of the Digital Transformation Between Eastern and Western China

On the basis of these data, the study demonstrates that certain data share similarities. Specifically, the data demonstrated in Figure 3 that regardless of whether one is in the east or the west, the significant drivers of digital transformation are related to a set of three drivers, namely "increase business revenue, improve business competitiveness, enable data-driven business, and increase production efficiency." Obtaining national policy subsidies was the option with the lowest percentage of respondents in the east region, while Supply Chain Optimization had the lowest percentage of respondents in the west.

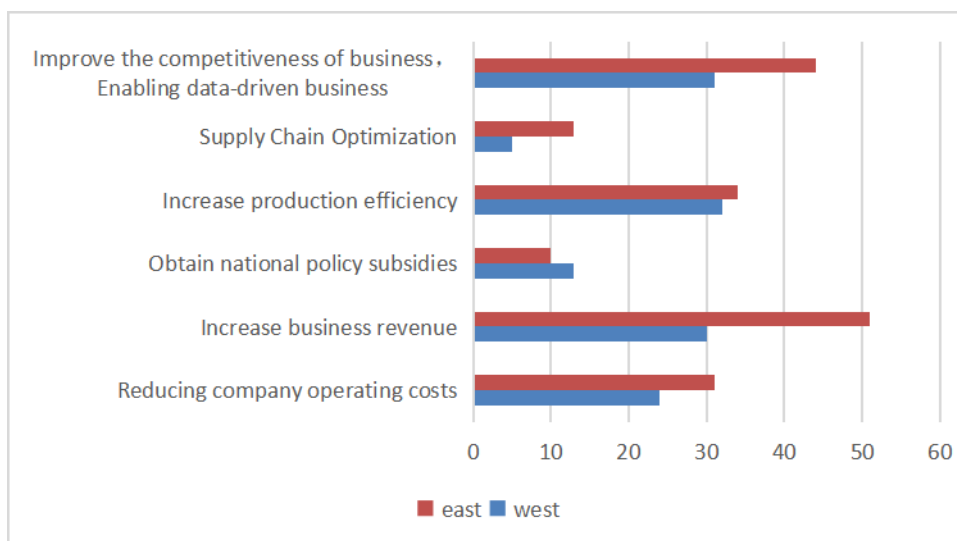
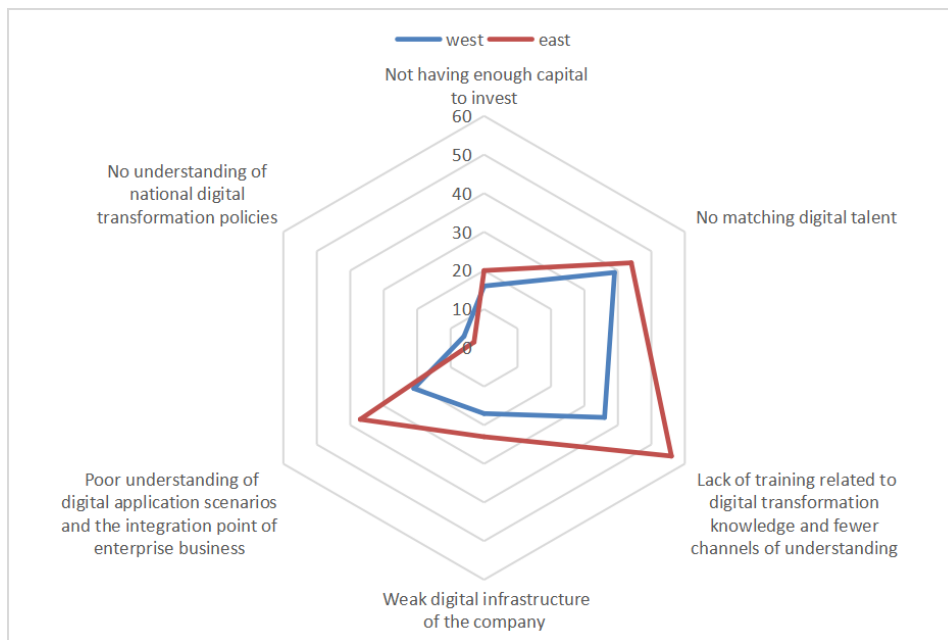


Figure 3: The Drivers of DT in East and West Difference

### The Challenges of the Digital Transformation

According to the research, the trajectories of the digital transformation's drivers in the east and west exhibit similarities and differences. The top three factors in the east include a lack of training related to digital transformation skills and fewer channels of understanding, a poor understanding of digital application scenarios and the enterprise business integration point, and a lack of matching digital talent. Western data demonstrate the same conclusion. The difficulties of DT between east and west China have seen a similar tendency. Still, the most significant difficulty in the west is a shortage of digital talent. In contrast, the greatest

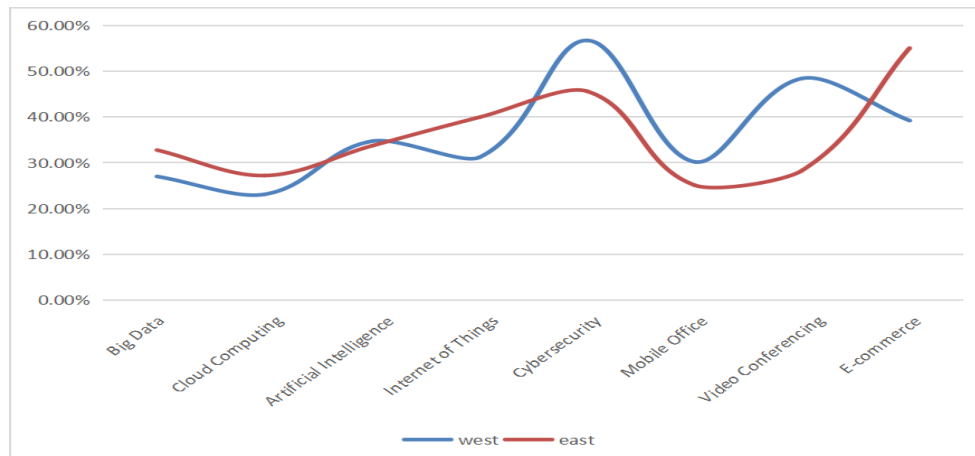


challenge in the east is a lack of training related to DT knowledge and fewer communication channels. The information is shown in Figure 4.

Figure 4: The Challenges of The DT in East and West

**Digital Technologies Applied in Digital Transformation**

Additionally, the answers of which digital technologies are used in firms, the results also shown the similar trend. E-commerce, cyber security, internet of things, artificial intelligence, and big data are the top five answers in the east China. However, organizations in the west China cite cybersecurity, video conferencing, e-commerce, artificial intelligence, and the Internet of Things as the top five. The study find that the trend is nearly identical, except that enterprises in the west choose video conferencing over big data. The detail is shown in Figure 5. SMEs can leverage digital technologies to boost their productivity through "key activity"



extension: eliminating paper processes, inputting data directly into the computer, allowing employees to work from home, and using software to manage and analyze data, which serves as the basis for decision making (Norris, 2020).

Figure 5: The Digital Technologies That Firms Used

**Summary of the Data**

However, there are also differences among the various regions. The answers of what services do you expect from digital suppliers show the different trend. Companies in the east China desire to improve digital marketing in order to extend their sales market and consumer base. Nonetheless, corporations in west China would prefer to provide digital training to help other businesses develop digital expertise. And the demands of the government are also different. Companies in the various regions provided contradictory responses. For example, companies in the east region aim to build industrial digitization standards and guide the digital transformation of businesses. Companies in the west region desire to offer incentives for the introduction of digital talent.

The response to the current status of your organization's digital transformation. Eastern SMEs "are trying with digital transformation in a segment of their operations with limited success." In contrast, the answer in western regions is "Some, but we'd like to try more." The significance of the digital transition is evaluated in a variety of ways. The majority of businesses in the east believed the issue to be urgent and of the utmost significance, whereas businesses in the west believed the issue to be relevant but not urgent. The survey question labelled "Investment in digital transformation capital as a share of annual sales." The rate of businesses in the east region is 3% to 5%, but the rate in the west region is 1% to 3%. Some major terms, such as strategy, executive force, digital talents, and technology, are related with "attributes of effective transitional organizations" answers. The data summaries are shown in Table 2.

Table 2  
*The Survey Data Summary*

ITEMS	ANSWERS	WEST	EAST
● How many employees do you have?	➤ 200≤X<250	1.48%	55.19%
	➤ 100≤X<200	15.56%	22.95%
	➤ 50≤X<100	23.70%	13.66%
	➤ <50	59.26%	8.20%
● Which industry does your company operate in?	➤ Agriculture, forestry, fisheries	25.19%	7.10%
	➤ Industry	14.81%	81.97%
	➤ Service industry	60%	10.93%
● What is the status of your company operate in?	➤ Tried digital transformation in part of our business and achieved a minor success	25%	58.90%
	➤ Not at all	13.10%	15%
	➤ Have completed digital transformation on a larger scale	5.30%	11.30%
	➤ Have completed digital transformation	2.50%	5.20%
	➤ A little bit, but we'd like to try more	54%	9.60%

<ul style="list-style-type: none"> <li>● What are the drivers for digital transformation in your business?</li> </ul>	➤ Supply Chain Optimization	3.70%	7.10%
	➤ Increase business revenue	22.22%	27.87%
	➤ Improve the competitiveness of business, Enabling data-driven business	22.96%	24.04%
	➤ Increase production efficiency	23.70%	18.58%
	➤ Obtain national policy subsidies	9.63%	5.46%
	➤ Reducing company operating costs	17.78%	16.94%
<ul style="list-style-type: none"> <li>● What are the difficulties or challenges of digital transformation?</li> </ul>	➤ Weak digital infrastructure of the company	12.59%	12.57%
	➤ No understanding of national digital transformation policies	4.44%	1.64%
	➤ Poor understanding of digital application scenarios and the integration point of enterprise business	15.56%	20.22%
	➤ No matching digital talent	28.89%	24.04%
	➤ Not having enough capital to invest	11.85%	10.93%
	➤ Lack of training related to digital transformation knowledge and fewer channels of understanding	26.67%	30.60%
<ul style="list-style-type: none"> <li>● What digital technologies does your business already use or is interested in?</li> </ul>	➤ 6.1 E-commerce	39.20%	55.03%
	➤ 6.2 Video Conferencing	48.40%	28.30%
	➤ 6.3 Cybersecurity	56.70%	45.60%
	➤ 6.4 Mobile Office	30.20%	25.10%
	➤ 6.5 Cloud Computing	23.10%	27.20%
	➤ 6.6. Artificial Intelligence	34.70%	33.70%

	➤ 6.7 Big Data	27.00%	32.76%
	➤ 6.8 Internet of Thing	31.20%	39.94%
● What services do you expect from digital suppliers?	➤ Increase digital marketing to expand sales market and customer base	12.30%	50.10%
	➤ Assist in declaring national policy subsidies	7.50%	12.40%
	➤ Create a digital ecological platform to help SMEs digitize and combine industry and finance for win-win cooperation	11.00%	8.90%
	➤ Provide low cost digital tools or services, solutions.	9.40%	5.10%
	➤ Provide digital training to help companies build digital talents.	50.10%	16.10%
	➤ Improve enterprise production efficiency and reduce enterprise labor cost	9.70%	7.40%
	● How would you like the country to support and promote the digital transformation of SMEs?	➤ Subsidize SMEs' digital technology application and R&D expenses	4.36%
➤ Develop industrial digitalization standards and guide the digital transformation path of enterprises		19.20%	55.20%
➤ Increase the construction of digital transformation infrastructure		11.50%	20.10%
➤ Promote digital technology cooperation between universities and research institutions and SMEs		8.24%	9.40%
➤ Provide tax incentives		12.10%	5.20%
➤ Give incentives to introduce digital talents		44.60%	5.40%
● Do you think that digital transformation is vital in the current situation ?	➤ not important	1.20%	2.10%
	➤ important but not urgent	55.40%	3.40%
	➤ important	12%	10%
	➤ very important	4.10%	26.70%
	➤ most important and necessary	27.30%	57.80%

● Which factors do you think determines the success rate of digital transformation for the companies themselves?	➤ Having a professional digital talent pipeline	19.80%	18.18%
	➤ Strong technology development capability	5.30%	15.20%
	➤ Special policy subsidies from the state	8.10%	2.12%
	➤ Maturity of digital technology application	21.30%	19.30%
	➤ A clear digital strategy	33.10%	30.00%
	➤ A clear digital transformation path and executive force	12.40%	15.20%
● How much of digital transformation capital investment as a percentage of annual sales	➤ $1% < X \leq 3%$	60.10%	20.10%
	➤ $3% < X < 5%$	18%	55%
	➤ $\leq 1%$	15%	12%
	➤ $\geq 5%$	5%	5%
	➤ No idea	2.60%	7.90%

### Finding

This study intends to examine the characteristics of the digital transformation of SMEs in China between economically developed eastern coastline areas and underdeveloped western mainland districts. The survey employs graphs and tables to illustrate aggregated survey data because they represent the study's generalizations' synthesis and analysis (Ziolkowska, 2021). In order to have a better understanding of the current state of SMEs' digital transformation, we summarize the study's findings and highlight the most significant characteristics between east and west China SMEs.

### *Disparity Between SMEs in Different Regional Economies*

In terms of digitalization, digital investment, and digital awareness, SMEs in east China are more advanced than SMEs in west China, according to the research. China's eastern region is the most economically developed, with 60% of the country's entire SME population located there. The operation's revenue is three times that of the west region's SMEs. In addition, the outcome of the current digital situation reveals the significant difference. Azhari proposes a model that outlines the levels of digital transformation maturity inside organizations. The eight dimensions of this approach are strategy, leadership, products, operations, culture, people, governance, and technology (Azhari et al., 2014).

The SMEs in the western region are the most receptive, have a limited understanding of digitalization, and desire to test but not act. In addition to digital strategy and road map. According to Azhari's (2014) view, they are at a time of digital development marked by ignorance and conceptualization. In contrast, the majority of SMEs in the eastern region "tried digital transformation in a portion of their firm with modest success" and "have accomplished digital transformation on a massive scale." The DT is more mature than the west. The percentage of digital investment in the east's total yearly sales ranges between 3% and 5%, whereas the west's is between 1% and 3%. In terms of digital transformation maturity, firms

in the East area are more advanced than those in the West. They made considerable success and reached the vanguard of China's SMEs' digital transformation.

### **Digital Characteristics of Secondary and Tertiary Industries**

The tertiary industry exhibited the greatest transformation will, whereas the secondary industry exhibited the superior transformation process execution.

Transportation, information transmission, wholesale and retail, lodging and catering, banking, real estate, rental and business services, etc., are examples of China's tertiary industry. These businesses are intrinsically linked to the demands of the average person. The spread of the epidemic dealt a severe blow to the tertiary sector, and the majority of small and medium-sized enterprises suffered significant losses for years. Therefore, they are keen to apply the digital transition to improve their predicament. The secondary industry includes mining, manufacturing, the generation and distribution of energy, gas, and water, and construction. The majority of enterprises in these industries are state-owned, and their digital transformation execution and digitalization maturity are the finest of the three industries.

### **Discussion**

Digital technology ushers in a new era of commercial opportunities, and the connection between businesses and the market is evolving in response to the rapid development of digital technology (Ziolkowska, 2021). The digital tool and IT technologies, such as video-conferencing and mobile office, have a profound effect on the businesses' and customers' relationships and also increase the value of the organizations (Zhang et al., 2020). During the course of the digital procedure for SMEs, the majority of companies use digital technology to improve their productivity. According to the findings, the majority of SMEs recognize the significance of digital technology, but do not comprehend the distinction between digitalization and digital transformation. In the digital era, technology is merely one of the factors required to sustain a company's competitiveness. According to academics, digital transformation differs from digitalization in that the firm's strategy and organizational structure do not rely exclusively on technology to generate new avenues for value generation, but also on other competencies (Svahn et al., 2017).

According to the results of our survey, the digital transformation maturity of China's SMEs is slow in both developing and developed regions. Scholars believed that SMEs face hurdles during three phases: the beginning phase, the execution phase, and the coordination phase (Westerman et al., 2011). The majority of SMEs in the tertiary sector are in the initiation phase, whereas the majority of MSEs in the secondary sector are in the execution phase. The main comparison finding of the study is shown in Table 3. Similar obstacles impede the digital transformation of small and SMEs: lack of training related to DT knowledge and fewer channels of understanding; lack of digital talent; poor understanding of digital application scenarios and the enterprise business integration point; and a weak digital infrastructure. All of these must be supported by the external digital environment's maturity and government policies. To achieve digital transformation, SMEs can also modify their strategy, operations, goods, marketing, and technology through digitalization.



Table 3

*Finding of The Study*

Detail	East in China	West in China
● Digitalization	Tried DT in part of our business and achieved a minor success	A little bit, but like to try more
● Digital Investment	3% to 5%	1% to 3%
● Digital Awareness	most important and necessary	important but not urgent
● Maturity of DT	From defined to transformed	From unaware to conceptual
● Tertiary Industry	Greatest transformation will, initiation phase	
● Secondary Industry	Superior transformation process execution, execution phase	

**Policy Recommendations**

The study is possible to detect the variations in digital transformation that exist between the east and west areas based on the findings, which are presented below. We offer some suggestions below in the hope that they would prove helpful in fostering the growth of digital transformation in less developed regions.

- i. The government should increase the availability of online training for digitalization and make certain that SMEs not only understand what digitalization is but also know how to put it into practice. When it comes to SMEs, the path to digitization is not always apparent, nor are the benefits of digitalization always grasped.
- ii. The government can also speed up the construction of digital infrastructure and offer advice to SMEs on the best way to incorporate digital technology with their products in order to increase their profits.
- iii. The government ought to enact a policy that will assist and encourage SMEs to go through digital transformation. Additionally, the government ought to reduce taxes and provide subsidies, and the policy ought to vary depending on the economic differences between regions.

**Conclusion**

The majority of businesses have realized that if they do not change or maintain the status quo, they would be defeated by their advanced competitors and driven out of business. Despite the fact that the majority of SMEs are keen to undergo digital transformation, they may feel overwhelmed by the possibility of the move. It is crucial to understand the current state of small and SMEs and the digitalized changes occurring within organizations, as well as when to implement digital transformation (Ziolkowska, 2021). Chinese SMEs play a crucial part in China's economic growth and are known as the capillaries of the Chinese economy. However, compared to large corporations, SMEs are more susceptible to VUCA situations and face greater obstacles when undergoing digital transformation. Therefore, the government must encourage the development of SMEs through stringent regulation to ensure their survival and further growth (Su et al., 2022).

This study's findings have multiple particle meanings, including (a) as an entrepreneur in a SME, one must comprehend the existing scenario and the gap between the industry's top digital transformation organizations. Which will provide them with a path to catch up. (b) As a government, a good understanding of the difficulties and obstacles faced by SMEs throughout their transition to digitalization will enable the government to develop a policy that specifically supports SMEs. Additionally, the study has academic ramifications. The findings of this study will aid scholars in comprehending the actual state of digital

transformation among SMEs and thoroughly comprehend the era of the DI in China. However, because the sample size of the questionnaire is small, the study employ qualitative analysis. Our findings are not without limitations. However, it will provide a foundation for future research and serve as a reference.

The digital transformation of SMEs and geographical variation were only combined in a few previous studies in the same country. In addition, further research is needed to comprehend the differences in China's SMEs DT scenario that are particular to specific industries. This research therefore has the potential to contribute to the development of the theory of DT for SMEs in developing countries. In addition, information technology can provide a reference for the section dealing with decision-making. DT of SMEs is an essential metric for the Chinese government, despite the fact that the most recent DT of SMEs did not go according to plan. Understanding the actual situation is essential for the government as well as academics because it enables them to recognize additional subjects that can be applied to specific problems and reduces the burden that is placed on SMEs during the DT process. In order for the economy to recover quickly after the post-epidemic period, China and researchers have a fundamental obligation to assist SMEs in regaining business possibilities and overcoming the break through the DT.

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