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THE EFFECT OF DIGITAL LEADERSHIP ON THE AGILITY OF ORGANISATIONS IN A DYNAMIC BUSINESS ENVIRONMENT IN CHINA

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Original Article

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Abstract

This research delves into the role of digital leadership in creating organisational agility amid a rapidly changing economic environment in China. This issue is because, with China rapidly going digital through the adoption of AI (artificial intelligence), big data, and cloud computing, organisations are faced with the challenge of responding to changes in the market, technology, and government regulations. The research examines how digital leadership, a form of leadership founded on knowledge, vision, and adaptability, helps organisations overcome such challenges. The research employed a quantification technique that revealed a significant correlation between digital leadership and a company's agility, which is important because digital leaders enable their companies to detect and respond to environmental changes, ultimately enhancing their competitive advantage in a rapidly evolving digital landscape.

Keywords: Digital Leadership; Dynamic Business Environment; Organisational Agility; Technological Transformation; VUCA

Introduction

In today's marketplace, digital changes affect the way organisations work, compete, and generate revenue. The emergence of various technology solutions, such as AI (artificial intelligence), machine learning, cloud computing, automation, the Internet of Things (IoT), and big data analytics, is also influencing organisational approaches and work paradigms. What is currently taking place is not a technology change but a change in how businesses compete to survive in the marketplace. The ambiguous environment is a VUCA—volatile, uncertain, complex, and ambiguous—environment in which traditional leadership is not effective in handling uncertainties in the marketplace on a continuous basis, necessitating new leadership approaches that embrace adaptability and innovation to navigate these challenges effectively.

Consequently, the implementation of digital transformation has evolved to become a "strategic imperative" from a "nice-to-have" process. At this point, digital leadership has emerged as a highly significant organisational characteristic [1]. Digital leadership is much more comprehensive than the notion of being "tech-savvy." Digital leadership entails the mindset and skill set where the individual possesses tech skills and an imagination for strategy and innovation. Digital leadership is an important factor, as it enables the creation of an organisational culture that encourages learning, experimenting, and thriving. It enables employees to be better prepared to adapt to the implementation of new technology and the dynamic business environment in which the digital projects of the organization are situated [2].

Digital leadership has a close relationship with organisational agility, which refers to how swiftly an organization detects, understands, and responds to various changes within and outside it. Organisational agility occurs in strategy, operations,

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market, and human capital, which enables businesses to move their resources, rebuild their operations, and generate innovations in unpredictable environments. Digital technologies facilitate agility via automation and real-time data; yet their efficacy is predominantly contingent upon leadership guidance, organisational preparedness, and cultural congruence [3], which means that without effective digital leadership, organisations may struggle to fully leverage these technologies to enhance their agility. Digital leadership is therefore necessary to promote agility through the encouragement of cross-functional cooperation, the advancement of digital competencies, and the facilitation of adaptive decision-making.

Even though more people are starting to understand the importance of leadership in digital transformation, there is still little research that clearly connects it to organisational outcome orientation. This is particularly true for industries that are highly outcome-orientated, such as manufacturing, healthcare, and finance, where effective digital leadership can significantly impact performance and adaptability. Using the resource-based approach and upper-echelon theory, this study emphasises digital leadership as an essential organisational resource that influences strategic responses, innovation capabilities, and long-term competitiveness. This ineffectiveness can hinder their ability to adapt to market changes and innovate, ultimately impacting their competitiveness in the rapidly evolving digital landscape, especially in industries that are quite unstable, such as telecommunications, where failure to embrace, digital leadership can lead to significant losses in market share and relevance. This is particularly true for industries that are unstable, such as telecommunications. Christensen's theory of disruptive innovation [4] supports this. Digital disruption poses major problems for companies that are already in this field. Many incumbents invest a lot of money in digital technology, yet change resistance, old processes, and poorly matched leadership practices can make transformation less effective [5]. This ineffectiveness can hinder their ability to adapt to market changes and innovate, ultimately impacting their competitiveness in the rapidly evolving digital landscape. Using the resource-based approach and upper-echelon theory, this study emphasises digital leadership as an essential organisational resource that influences strategic responses, innovation capabilities, and long-term competitiveness. However, there has been very little research on how digital leadership helps companies stay flexible and competitive during digital changes, particularly in telecommunications network firms, indicating a significant gap in knowledge.

Background of the Study

The rapid digitisation of organisations associated with manufacturing, banking, education, healthcare, and logistics meant they had to leverage digital technologies to be successful and competent in a world that changes very fast and is unpredictable and uncertain. of the global economy has resulted in changes to the way firms operate, compete, and generate revenues. Organisations in the manufacturing, banking, education, healthcare, and logistics sectors must leverage digital technologies to succeed in a rapidly changing, unpredictable, and uncertain world. All these technologies help organisations operate more efficiently and effectively and stay one step ahead of the competition [6]. Organisations operate within a VUCA environment, which stands for Volatility, Uncertainty, Complexity, and Ambiguity, where they are always forced to change, innovate, and solve problems.

In this situation, digital leadership has been found to be an important success factor for organisations. Digital leadership needs knowledge related to technology and technology change because conventional leadership needs stability, efficiency, and planning. This is because the increase in new technology creates a need for training leaders to adapt to these advancements, ensuring they can fully utilise the technology and manage the significant changes occurring within an organisation.

Purpose of the Research

The primary purpose of the study was to examine the implications of digital leadership for organisational agility in China. The country was undergoing a rapid digital changeover owing to new technologies, such as artificial intelligence, big data, cloud technology, and platform business models. These findings implied that organisations had to respond to the dynamics of market changeovers, technology disruptions, and shifting customer expectations. In that regard, organisational agility, defined as the ability to sense change, make timely decisions, and allocate resources efficiently, was a critical skill that had become necessary to survive on the market.

The present study aims to examine how digital leadership can facilitate the growth and improvement of organisational agility in China. Digital leadership was viewed as more than the adoption of digital tools: leaders' mindsets, competencies, and behaviours that promoted the strategic use of digital technology, innovativeness, and flexible corporate culture. Given the differences in China's institutional environment from other countries, with a great deal of government participation, a fast spread of new technologies, and much competition, it was considered necessary to learn how the concept of digital leadership operates within this country and culture.

Moreover, the researchers also sought to help address the existing research gap in the literature, which has been dominated by a focus on digital leadership and organisational agility in Western economies. Organisational agility during transitions in growing economies, such as China, is a key focus of this research. The proposed research was undertaken in the Chinese context to derive country-specific knowledge on the effects of the approaches to leadership associated with digital transformation on the adaptability of the organisation in the context of the proposed research objectives. The findings of the proposed research were also expected to provide contributions in the practical field. For instance, the research would theoretically expand our awareness of digital leadership to facilitate organisational agility during transitions in growing economies, such as the Chinese economy, in alignment with the proposed research objectives.

Research Gap

Digital leadership has become an essential paradigm that emphasises relationship behaviours and shows a connection between it and organisational technical expertise, digital vision, and creativity. Although the direct transformations lack empirical evidence linking digital leadership behaviours, they show a correlation between digital leadership and organisational agility, which remains understudied. Most current research focuses on general leadership styles or the results of digital emphasis on relationship transformation, although it lacks empirical evidence linking digital leadership behaviours to agility-related abilities, like rapid decision-making, adaptability, and proactive change management. This void results in firms lacking a definitive strategy for using digital leadership to enhance agility in unpredictable environments.

Literature Review

Digital transformation has increased interest from both academia and practice regarding the ways and means of business adaptation during a rapidly changing environment, and digital leadership emerges as one of the prime competencies of these organisations [7]. The idea of digital leadership refers to a leadership style that combines digital knowledge, strategic thinking, and people management skills to help organisations deal with technological change. Digital leadership is quite distinct from traditional leadership, where the focus remains on stability and the organization's structure. It remains quite adaptable, innovative, and data driven [8]. Apart from technology skills and familiarity, it pertains to technological trend awareness, aligning digital projects and ideas to business goals and objectives, and employee attitude and skills to effectively use digital instruments.

The increasing pace of technologies like AI (artificial intelligence), big data analytics, cloud computing, blockchain, and IoT (Internet of Things) has brought about a revolution that has affected how businesses compete in the international market [9]. Such an environment has led to the increasing complexity, unpredictability, and volatility of the workplace, making the traditional styles of leadership outdated, which necessitates the adoption of more adaptive and collaborative leadership approaches that can effectively navigate these challenges. As a result, there has been a situation that calls for the emergence of leaders who can encourage innovation, cooperation between departments, or improvement and learning processes [10]. The act of digital leadership incorporates one of the most crucial elements of creating a digital environment that is ready for the organisation; this provides the ability for psychological safety, communication, and employee engagement [11]. Such an environment provides employees with the chance to adopt new ideas, new technology, or new ways of doing things, thereby increasing employee flexibility and fostering a culture of continuous improvement and adaptability within the organization.

Another big area in digital leadership is strategic alignment. When companies adopt digital technology in their operations, projects that are initiated digitally but do not align with the firm's objectives can cause significant disruptions, potentially resulting in failed changes [12]. Digital leaders integrate digital strategy into the general organisational vision and make informed decisions on investment, people development, and market positioning anchored on data analytics. In fast-growing economies like China, where technology is constantly evolving, this capability will be crucial [13].

Research Objectives

- To investigate the influence of digital leadership on organisational agility in China.

Research Question

- How does digital leadership influence the agility of organisation in China?

Aim of the Study

The aim of this study is to investigate that how Digital leadership create impact on China’s organisational agility.

Methodology

Research Design

A quantitative research analysis method was employed in the study. The researchers analysed the data using SPSS 25. The odds ratio and 95% confidence interval were used to examine the strength as well as the extent of the statistical correlation. A p-value of less than 0.05 is statistically significant to test the findings. Descriptive statistics presented a very resonant understanding of the introductory composition of the data, including measures such as mean, median, and standard deviation, which help summarise the key characteristics of the dataset.

Sampling

The research follows a purposive sampling technique. Among the 850 replies that had been submitted, it has been figured that 800 replies had been complete and of a high quality to be included in the study. 50 replies had been ignored due to the presence of huge amounts of data and patterns that depicted possible unreliability in the replies. The reliable data of 800 replies forms a good basis for any statistical test, factor, or regression analysis.

Data and Measurement

The study employed a quantitative analysis to get findings. People who took the survey were asked to rate their answers on a five-point Likert scale, which is a common rating system used to measure attitudes or opinions, ranging from "strongly disagree" to "strongly agree." Additionally, the researcher relied on internet resources to gather secondary data for the study.

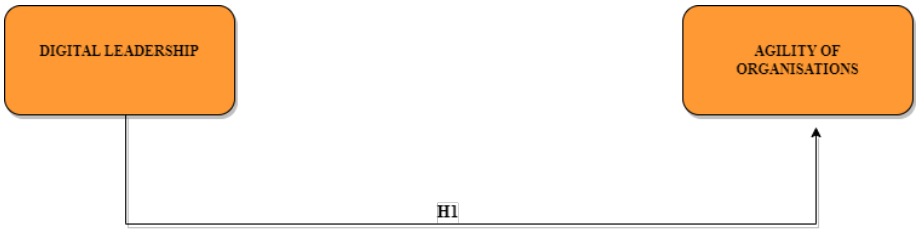
Statistical Software

Microsoft Excel and SPSS-25 were used by the researcher for statistically analysing the data.

Statistical Tools

An analysis of descriptive data revealed several demographic and level-specific characteristics of different programs. ANOVA has been used for statistical analysis.

Conceptual Framework



Result

Factor analysis

Factor Analysis (FA) emerged to identify novel components using open-source data. In the absence of symptoms, clinicians frequently employed regression coefficients to formulate more accurate diagnoses, which allowed them to better understand the underlying factors contributing to a patient's condition. The major objective of employing mathematical models was to identify discernible trends, abnormalities, and defects. Certain scholars employed the Kaiser-Meyer-Olkin (KMO) test to evaluate the outcomes of regression analysis. This investigation supported the dependent variables in the model and the inductive definition. Significant duplication appears to be evident in the data. Researchers may attempt to diminish the image's dimensions to enhance comprehension, particularly when analysing complex data sets that require clearer visual representation. If they use MO (which stands for "Method of Optimisation"), their quantity may vary from 0 to 1. A KMO score ranging from 0.8 to 1 indicates an adequate number of samples. Kaiser stated that the subsequent things must be accomplished to proceed, including ensuring that the average falls between sixty-nine and sixty-nine, attributable to the narrow range of 0.050 to 0.059. Kaiser testified that all the following requirements were satisfied: The average falls between sixty-nine and sixty-nine, attributable to the narrow range of 0.050 to 0.059. For intermediate uses, ground grades generally range from 0.70 to 0.79, whereas HPS is between 0.80 and 0.89.

They are astonished by the spectrum of 0.90 to 1.00.

Table1: KMO and Bartlett's Test

Testing for KMO and Bartlett's

Sampling Adequacy Measured by Kaiser-Meyer-Olkin 0.983

The results of Bartlett's test of Sphericity are as follows:

Approx. chi-square = 942

df = 190

sig = 0.000

Table 1: KMO and Bartlett's Test

KMO and Bartlett's Test[a]		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.983
Bartlett’s Test of Sphericity	Approx. Chi-Square	942
	df	190

	Sig.	0.000
a. Based on Correlations		

Source: Collected by Author

This facilitates the sampling of comments. The researcher employed Bartlett's Test of Sphericity to determine the statistical significance of the correlation matrices. The Kaiser-Meyer-Olkin statistic indicated that the sample size was appropriate, with a value of 0.983. Bartlett's sphericity test yielded a *p*-value of 0.00. Bartlett's sphericity test indicated that the correlation matrix is not an identity matrix (refer to Table 1).

Independent Variable

- **Digital Leadership**

  Digital leadership has become a key concept in contemporary organisational research due to its high theoretical, empirical, and practical significance, particularly in rapidly changing digital contexts, such as China. Executives' proficiency in terms of digital competencies, strategic vision, and leading the change is very significant in the success, flexibility, and long-term viability of the firm while transitioning from traditional structures toward digitally enabled ecosystems [14]. On the other side, digital leadership focuses on flexibility, new ideas, and readiness for change in technologies. Traditional leadership, in contrast, is based on stability, hierarchy, and long-term predictability. The leaders must be informed about technologies such as AI, big data, cloud computing, and the Internet of Things. Also, leaders must ensure that these technologies form part of the strategies and culture of the organization and are applied to everyday work.

  Digital leadership is a key consideration in a rapidly changing market, where effective planning and execution are increasingly dependent on digital capability. In the Chinese context, the ‘Digital China’ and ‘Made in China 2025' initiatives mean that the ability of leaders to respond to regulatory change, competition, and the rapidly evolving state of the art is more crucial than in the case of China and most of the rest of the world [15]. Digital leadership also translates into a more flexible organization because it places emphasis on encouraging others to experiment, learn from failure, and adapt to change. This strategy is obscure, which ultimately enhances the organization's ability to respond swiftly to market changes and fosters a culture of transparency and accountability. also aids in the development of digital literacy among employees, making it relatively easy for them to adapt to change. Digital leaders promote decision-making in the light of data, making things more reactive and less obscure, which in turn supports the organization's ability to adapt to market changes and enhances overall performance. Digital leadership has been consistently associated in empirical studies with innovation, resistance capabilities, and organisational agility; yet the evidence from the Chinese context remains limited regarding the importance of the independence of the variable in the current study, particularly in how it influences these outcomes in rapidly changing business environments [16].

Dependent Variable

- **Agility of Organisation**

  This study examines the topic of organisational agility because it plays a very important role in organisations' ability to adapt to changing market conditions due to digital transformation in China.

  This concept acted as the independent variable in the study since it has both direct and indirect relationships with digital leadership factors, such as innovation, responsiveness, and strategic alignment, which are crucial for navigating the challenges posed by digital transformation.

  The concept of organisational agility is a multivariate construct with dimensions that indicate the ability of the concerned organisations to detect change in the environment, make decisions promptly, and change Resource Utilisation in response to those demands of the Outside Environment.

Agility enhances competitiveness because it enables firms to respond rapidly to constant changes in technology, regulations, and competition. Agility in this study is considered a higher-order construct comprising four interrelated dimensions: strategy agility, operational agility, market agility, and workforce agility [17]. Strategy agility is defined as the ability to envision and anticipate changes in the environment which may affect the contingencies of the corporate plans and models. Operational agility implies the possibility of changes in internal procedures and allocation of resources, which can lead to improved efficiency and better alignment with the organization's strategic goals. Market agility refers to the ability to react to changes in consumer wants, market trends, and competition. Workforce agility means the ability of people to learn and adapt, to take on new roles, and to adopt new technology.

Mediating Variable

- **Dynamic Business Environment in China**

The study examines the relationship between digital leadership and organisational agility, using the dynamic economic environment of China as a mediator. The research framework explains the processes through which digital leadership can result in organisational agility, considering the rapid changes in technological advancements and other uncertainties in the Chinese economic environment [18]. The research methodology argues that the dynamic economic environment is a complex variable incorporating aspects such as unpredictability, changes in organisational affairs like customer preferences and changes in technology, and other economic changes in the Chinese economic environment. The argument presented in the research has been supported by the Contingency Theory and the Dynamic Capabilities Perspective, through which it has stated that leadership effectiveness and organisational outcomes are influenced by the contextual factors.

The suggested model posits that digital leadership influences organisational agility both directly and indirectly by altering businesses' perceptions, interpretations, and responses to environmental dynamics [19]. Leaders who are skilled in technology use data analytics and digital tools to monitor changes in the outside world, ensure that strategies align with environmental needs, and enable organisations to adapt. The study used a structured survey using Likert-scale items derived from previous literature to assess digital leadership, environmental dynamism, and organisational agility in a Chinese setting.

Mediation analysis employs multivariate approaches, including structural equation modelling, with bootstrapping used to assess indirect effects. Cronbach's alpha and factor analysis make sure that the results are reliable and genuine. The study enhances explanatory power by acknowledging the changing corporate environment as a vital factor connecting digital leadership to organisational agility in China, particularly in how these dynamics influence decision-making and adaptability in response to market trends.

Relationship between Digital Leadership and Agility of Organisation

The hypothesis posits that data-driven decision-making significantly boosts organisational agility, underscoring its importance as a vital competency in digital leadership that fosters responsiveness and adaptability [20]. Contemporary businesses consistently produce vast amounts of data from customers, internal operations, supply chains, and many digital platforms. Leaders who effectively leverage this information can make decisions that are more informed, timely, and precise. There are many ways that data-driven decision-making makes organisations more flexible. It makes predictions and forecasts more accurate because it helps businesses better understand changes in customer behaviour, market trends, and technology [21]. It also speeds up response times by using real-time analytics to help quickly find new problems and possibilities. This capacity to find patterns in data helps fresh ideas come to life by helping create new products, improve services, and make corporate processes better. When businesses use data to find inefficiencies and bottlenecks, they can improve their operational efficiency by streamlining operations and better allocating resources, which ultimately leads to cost savings and enhanced productivity. Data-generated feedback loops encourage continuous

learning by helping companies improve their plans, measure their progress, and quickly adjust to changes inside or outside the organisation [22].

H_{01}: There is no significant relationship between Digital Leadership and Agility of Organisation.

H_1: There is a significant relationship between Digital Leadership and Agility of Organisation.

As per the hypothesis formulation H_{01} is null hypothesis and H_1 is the alternative hypothesis.

Table 2: H_1 ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	58,390.62	210	1463.541	**1125.80**	0.000
Within Groups	850.20	589	1.300		
Total	**59,240.82**	**799**			

Source: Collected by Author

In this study the result is significant. F = 1125.80: This is the overall F-statistic of the regression model. Sig. = 0.000: Means $p < 0.001 \rightarrow$ the model is highly statistically significant***. "H_1: there is a significance relationship between Digital Leadership and Agility of Organisation."*** is accepted and the null hypothesis is rejected (refer to Table 2).

Discussion

The outcome of this research work has rendered valuable information about the linkage that exists between digital leadership and the Agility of Organisation in China, especially in relation to fast-paced technological developments, variability in the marketplace, and legal shifts in the business landscape. The ANOVA result ($F = 1125.80$, $p = 0.000$) unequivocally confirms that the null hypothesis is correctly rejected, as there is significant linkage between digital leadership and the ever-changing business climate in China.

Neuroplasticity is a term used to describe the brain's ability to modify itself by developing new neural interconnections throughout life. This type of change is more common during early development, a time during which the brain is also eliminating synapses and developing myelin [23]. Empirical research has shown that environmental stimulation and experiential learning directly influence brain development, affecting cortical thickness and dendritic branching. Functional magnetic resonance imaging research has also confirmed that the adult brain has a considerable degree of neuroplasticity, which can be utilized for recovery from injury and new learning [24]. The neuroplasticity model has several implications for educational psychology and medicine.

This study highlights a novel organisational context arising in the era of digital transformation: digital leadership, strategy, and agility, in which an organisation's agility and digital transformation are intrinsically linked to its capacity for developing digital offerings [25]. A robust correlation among digital leadership, digital strategy, organisational agility, and digital transformation has been established in the literature about Qihoo and Didi firms. This research seeks to elucidate the concept of agility within this environment, predicated on the assumption that such organisational structures are becoming more prevalent in the digital age [26]. Furthermore, the results of this research include significant implications specifically relevant to the domain of digital transformation [27]. This research examines the link among digital leadership, digital strategy, and organisational agility in the context of digital transformation at Qihoo and Didi in China [28]. Furthermore, the results of this work provide intriguing directions for further investigation. The astute reader has observed that our results diverge from conventional conclusions regarding the interplay among corporate digital strategy, digital leadership, digital agility, and digital transformation, as Chinese internet companies in numerous traditional sectors amalgamate digital technologies with their products and services to enhance value

propositions. Moreover, the results of our research reveal that organisational agility, digital transformational leadership, and digital strategy influence digital transformation at the Chinese firms Qihoo and Didi. This study contributes to elucidating digital strategy, digital leadership, organisational agility, and digital transformation within the framework of this new hypothesis [29].

Conclusion

From the findings in this research, it becomes clear why digital leadership is valuable to organisations in terms of making them more flexible in this changing economic world in China in particular. The close relationship between digital leadership and this changing economic world reveals why leadership matters in forming how organisation's view, understand, and respond to all the continuous changes occurring in this changing economic world. With AI, big data, and cloud technology altering how organisations conduct business, tech-savvy CEOs matter to their organizations' competitiveness and flexibility.

This study improves our understanding of how digital leadership supports organisational agility because it enables organisations to quickly detect and respond to market fluctuations, technological disruptions, and legislative changes. It informs their organisations about challenging circumstances, encouraging innovation and ensuring that their strategies align with. Digital leaders leverage data analytics and real-time IT systems to pre-emptively warn organisations that pre-emptively warn them about organisations in challenging circumstances, urging innovation and confirming that they lead their organisations in challenging circumstances, urging innovation and verifying that their strategy is consistent with what is happening in the external environment. This study affirms that digital leaders aim for more than simply using technology; rather, they have a mindset that promotes flexibility and a willingness to learn and adapt, thus creating resilient organisations that pre-emptively warn organisations during times of uncertainty.

Conflict of Interest

The authors declare that they have no conflict of interests.

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