The Impact Of Digital Leadership and Employee Digital Literacy on Service Efficiency of Financial Enterprises: A Case Study of Banks in Fuzhou City

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***Abstract*—This thesis examines the impact of digital leadership and employee digital literacy on the service efficiency of financial enterprises in Fuzhou, China. The research framework is based on the Resource-Based View (RBV), Digital Leadership, and Digital Literacy theory. The study employs a quantitative approach using a three-stage sampling method to analyze data from 400 respondents across four major banks in Fuzhou. The statistics used to analyze the data included an independent sample t-test, one-way ANOVA, LSD, and multiple linear regression, all at a statistical significance level of 0.05. The study concludes that digital leadership and employee digital literacy have a significant influence on enhancing service efficiency. Digital insight and digital strategic thinking are identified as the strongest drivers among leadership dimensions. At the same time, problem-solving and data and information management skills are the most influential aspects of digital literacy. Educational background, working position, and working experience also demonstrably affect the service efficiency of financial enterprises. The findings recommend strengthening digital leadership development through strategic alignment workshops, improving employee digital literacy via scenario-based training programs, addressing demographic differences through targeted reskilling initiatives, and advocating for policy support to advance digital infrastructure.**

Keywords— Digital Leadership / Employee Digital Literacy / Financial, Enterprises Service Efficiency / Resource-Based View (RBV), Quantitative Approach / Fuzhou, China.

I. INTRODUCTION (*HEADING 1*)

The preservation and transmission of cultural heritage Under the wave of the Fourth Industrial Revolution, the financial industry is experiencing a technological paradigm shift centered around artificial intelligence, blockchain, and cloud computing (Klaus, S, 2016). Digital transformation has become a strategic choice for financial institutions to maintain their competitive edge. The digitalization process of China's financial industry is particularly remarkable. According to the "Fintech Development Plan (2022 - 2025)" of the People's Bank of China, the average annual growth rate of investment in digital transformation of the banking industry reaches 19.3%, and the coverage rate of digital services has increased to 83.6%.

As the core bearer of the "Digital Fujian" strategy, financial enterprises in Fuzhou are facing dual challenges. On the one hand, they need to address the new demands of digital-native customers for real-time, intelligent services. On the other hand, they urgently need to address the challenge of adapting the traditional organizational structure to the digital operating model. The latest research indicates that the gap in service efficiency between digital transformation leaders and laggards is continuing to widen. In particular, the differences in dimensions such as customer response speed and process automation level can reach 30% - 50% (Verhoef et al., 2021). The formation of this dynamic gap highlights the crucial role of strategic leadership and human capital restructuring.

Although current academic research has focused on the mechanisms by which the application of digital technologies enhances operational efficiency (Hanelt et al., 2021), there are still research gaps in two key dimensions: first, the strategic navigation role of digital leadership. Different from the traditional leadership paradigm, digital leadership emphasizes the decision-making mechanism based on real-time data analysis, the design of modular organizational structures, and the ability to build an open API ecosystem (Kane, 2015). Second, the moderating effect of employees' digital literacy. A cross - national study by the Organization for Economic Co - operation and Development (OECD, 2021) shows that the inter - generational differences in digital skills within financial institutions may reduce the application effectiveness of intelligent systems by 28% - 42%, which is particularly significant in scenarios such as wealth management and intelligent risk control that require human - machine collaboration.

By the end of 2024, the balance of various local and foreign currency deposits and loans in the city exceeded 5 trillion yuan, ranking first in the province. Among them, the financing coordination work mechanism for small and micro enterprises in Fuzhou, established in early November, achieved the "double first" in the province in terms of credit and loan disbursements by the end of the year. Thirty-two thousand eight hundred enterprises have obtained a credit of 63.11 billion yuan, and the cumulative transaction volume of digital RMB ranks among the top three in the country. In addition, the added value of the financial industry in Fuzhou is expected to exceed 160 billion yuan, striving to reach 170 billion yuan. The balance of various local and foreign currency deposits exceeds 2.5 trillion yuan, and the loan balance exceeds 2.58 trillion yuan. (Fuzhou Municipal Bureau of Statistics' Official Website 2025) These data indicate that financial enterprises in Fuzhou have achieved remarkable results in serving the real economy and supporting small and micro enterprises, with significant improvements in service efficiency.

Research questions

1. A growth mindset has a more positive impact on the satisfaction of Uyghur folk dance among students and instructors at the Xinjiang Arts Institute.
2. Students and instructors who adopt a growth mindset and engage in service learning achieve results of more than 70 percent.
3. Service learning has a high level of satisfaction among Uyghur folk dance students and instructors at Xinjiang Arts Institute.
4. Service learning has raised the achievement of Uyghur folk dance among students and instructors at Xinjiang Arts Institute.

Research objectives

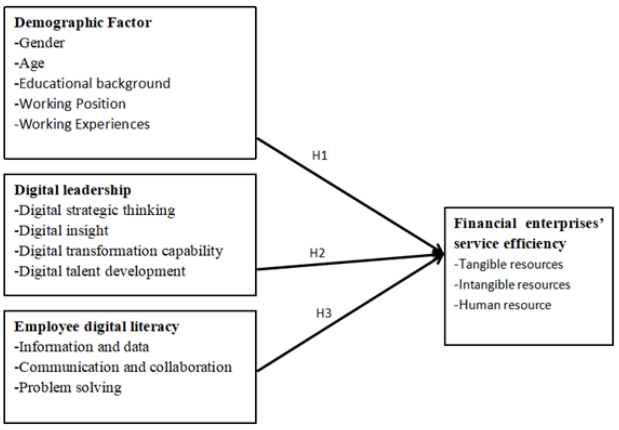
This study aims to deeply explore the relationship between digital leadership, employee digital literacy, and the service efficiency of financial enterprises in Fuzhou, with specific objectives as follows:

1. Reveal the effect of demographics on the service efficiency of financial enterprises in Fuzhou.
2. Explore the influence of employee digital literacy on the service efficiency of financial enterprises.
3. Explore the digital leadership aspects that influence service efficiency, providing a reference for financial enterprises to formulate scientific and reasonable digital development strategies.
4. Provide suggestions for financial enterprises in Fuzhou to improve service efficiency

Research Hypotheses

Based on the research questions above, the following research hypotheses can be proposed:

1. H1: The differences in demographic factors affect the financial enterprise service efficiency differently.
2. H2: Digital leadership influences the financial enterprise service efficiency.
3. H3: Employee digital literacy has a significant positive impact on the financial enterprise service efficiency.



Independent Variable: Growth mindset, Service learning

Dependent Variable: Satisfaction, Achievement

II. LITERATUR REVIEW

A. Digital leadership

When discussing the impact of digital leadership on the service efficiency of financial companies, various theories related to it exist, which explain how digital leadership affects the operation of financial companies from different perspectives and, in turn, impacts service efficiency.

B. Resource-based theory

An enterprise is a collection of various resources, and unique and valuable resources are the key to gaining a competitive advantage (Barney, 1991). In the financial sector, digital leadership can guide financial companies to effectively integrate digital technology resources, such as big data analysis and artificial intelligence. Through digital leadership, leaders can push companies to use big data to accurately analyze customer needs, allocate financial products and service resources more efficiently, and improve service efficiency. For example, with the help of digital leadership, some financial companies utilize big data to accurately assess customer credit risk, reduce loan approval times, and enhance the efficiency of credit services. This theory is of great significance in explaining how digital leadership affects the service efficiency of financial companies through the integration of resources. It emphasizes the central role of digital resources in financial services and the key importance of digital leadership in optimizing resource allocation.

C. Transaction cost theory

Firms exist to reduce transaction costs (Coase, 1937). Digital leadership can help financial firms reduce transaction costs, thereby improving service efficiency. In the digital age, digital leadership has prompted financial firms to leverage digital platforms to streamline trading processes. Taking online payment platforms as an example, financial companies, driven by digital leadership, enhance transaction security and speed by optimizing payment interfaces and adopting blockchain technology, thereby reducing information asymmetry and friction costs in the transaction process. This enables customers to make payments and transfers more conveniently, ultimately improving the efficiency of financial services. From the perspective of reducing transaction costs, this theory expounds the mechanism of digital leadership to improve the service efficiency of financial companies.

D. Transformational leadership Theory

It emphasizes that leaders strive to achieve organizational goals by motivating and inspiring subordinates to transcend their interests (Bass, 1985). In financial companies, digital leadership has the characteristics of transformational leadership. Digital leaders can articulate a vision for digital transformation for their employees, inspire awareness and motivation, and drive innovation in financial services. For example, leaders encourage employees to use digital technology to develop new financial products, such as intelligent investment advisory services, innovative services that can provide personalized investment advice based on clients' risk appetite and financial situation, improving the precision and efficiency of financial services. Transformational leadership theory explains how digital leadership can improve the service efficiency of financial companies by influencing employee behavior and innovation.

In summary, resource-based theory, transaction cost theory, and transformational leadership theory provide a theoretical basis for understanding the impact of digital leadership on the service efficiency of financial companies from different perspectives. These theories complement each other and jointly reveal the important mechanisms of digital leadership in the process of digital transformation for financial companies, aiming to improve service efficiency.

E. Digital literacy theory

Digital Literacy Theory refers to an individual's ability to effectively acquire, understand, evaluate, create, and communicate information in a digital environment (Cetindamar et al., 2021). In financial enterprises, employees' digital literacy directly affects their ability to apply digital tools and technologies, which has an important impact on service efficiency.

First of all, relevant studies have shown that employees with higher digital literacy are more efficient in processing information and can quickly screen valuable information to provide customers with accurate services.（Nikou et al., 2022)This theory provides a framework for understanding the competency basis of employees in financial enterprise services. It emphasizes that digital literacy is a key ability for employees to interact with digital technology, affecting their performance at work and service efficiency. Digital literacy includes multiple dimensions such as information and data literacy, communication and collaboration, and problem solving, which directly or indirectly affect employees' performance in financial services.

Second, digital literacy helps employees adapt to the changes brought about by digital transformation. In the financial industry, digital transformation has become a key factor in improving innovation performance. Research shows that digital literacy has a significant positive impact on enterprise digital transformation (Klaus, 2016) and can promote the process of enterprise digital transformation through the application of digital technology. (Sun & Lu, 2023) In addition, digital literacy enhances employees' ability to learn and innovate. They can quickly grasp

emerging digital technologies and apply them to their work practices, driving innovation and optimization of service processes.

Therefore, the digital literacy theory provides an important theoretical foundation for examining the impact of digital leadership and employees' digital literacy on the service efficiency of financial enterprises. By enhancing employees' digital literacy, financial enterprises can significantly improve service efficiency and boost market competitiveness.

F. Service efficiency theory

Several studies on service efficiency have been conducted, such as the Service Encounter Model (Bitner, 1990), which describes the interaction between service employees and customers. The interaction between service employees and customers. Resource-Based View of Service Firms (Barney, 1991) emphasizes that a firm's internal resources, including human capital and technological capabilities, are key to achieving service efficiency. Service Profit Chain (Morris, B. 1998) outlines a direct link between employee satisfaction, customer satisfaction, and profitability.

The Resource-Based View (RBV) was employed as a theoretical framework for this research, as it focuses on technological capabilities. The study focuses on three resource types: tangible resources, intangible resources, and human resources. Tangible Resources are physical and financial assets, such as equipment, buildings, capital, and raw materials. Intangible Resources include non-physical assets like brand reputation, intellectual property, customer loyalty, and organizational culture. Human Resources refers to the skills, knowledge, and capabilities of employees that are crucial in service firms, as they directly impact service quality and customer experiences.

G. Related Studies

Wade and Hulland (2004) observed that leveraging digital insights necessitates navigating core tensions, such as data serialization versus analytical transparency, particularly when transforming raw data into actionable market foresight to enhance service process efficiency. Bharadwaj (2000) emphasized that digital strategic thinking involves reconciling core tensions, such as proprietary control versus open ecosystem collaboration, particularly in integrating IT resources for optimizing platform-driven service delivery. Vial (2021) argued that building digital transformation capability requires addressing core tensions, such as legacy rigidity versus agile cloud adaptation, which fundamentally determines the success of financial service automation. Bughin et al. (2018) noted that digital talent development must resolve core tensions, such as human-AI skill complementarity versus displacement anxieties, which critically influence service process acceleration through workforce upskilling. Eshet (2004) noted that effective information screening and data processing capabilities are key predictors of service efficiency. Bawden and Robinson (2009) argued that Effective information screening and data processing capabilities (such as metacognitive strategies) are key predictors of service efficiency. Hargittai (2005) noted that the strategic utilization of digital collaboration tools (such as shared documents and instant messaging) is crucial for mitigating these tensions and has been shown to shorten the service delivery cycle significantly.

H. Financial Enterprise Background in Fuzhou City

Positioned as the core bearer of the "Digital Fujian" strategy, Fuzhou's financial enterprises face dual challenges: meeting the rising demand for real-time, intelligent services from digital-native customers, and adapting traditional organizational structures to digital operating models. By the end of 2024, the sector had demonstrated significant scale and growth, with total local/foreign currency deposits exceeding ¥2.5 trillion and loans surpassing ¥2.9 trillion, contributing to an industry-added value projected to exceed ¥160 billion (aiming for ¥170 billion). Notable achievements include establishing a highly effective SME financing mechanism that secured ¥63.11 billion in credit for 32,800 enterprises (ranking first provincially), leading digital RMB transaction volume nationally (top 3 in China), and achieving a citywide deposit-loan balance exceeding ¥5 trillion (provincial leader), collectively highlighting substantial progress in serving the real economy and enhancing service efficiency amid digital transformation pressures.

III. RESEARCH METHODS

This study employed quantitative research methods, focusing on the digital service scenario of financial institutions and banks in Fuzhou. It systematically explored how digital leadership and employees' digital literacy influence the service efficiency of financial enterprises. The research framework was developed based on the Resource-Based View of Service Firms, digital leadership, and digital literacy. The target population was chosen through a three-stage sampling method, resulting in the random selection of 400 respondents from various departments and job positions across the top four banks in Fuzhou. The sample size was determined from Cochran's formula; data were collected via an online platform using a quota sampling method. Content validity was ensured through Item-Object Consistency (IOC) with input from three experts in the field, yielding acceptable values for determining valid questions. Reliability, measured with Cronbach's alpha, was greater than 0.7 for all variables used in this study. The statistics

used to analyze the data included the independent sample t-test, one-way ANOVA, LSD, and multiple linear regression, all of which were tested at the statistically significant value of 0.05.

IV. RESULT AN DISCUSSION

Among the 400 respondents, 50.5% were male, showing a balanced ratio. The majority of respondents were aged between 35 and 44 years, making up 35.5% of the total. In terms of educational background, the largest group had a bachelor's degree, accounting for 46.0%. The working positions were arranged in a pyramid shape, with the staff accounting for the largest proportion at 42.5%. There were noticeable differences in working experience. The proportion of those with 5 to 9 years of work experience was the highest, at 50.2%.

By using the methods of frequency and percentage, the respondents' opinions on digital leadership, employee digital literacy, and the financial enterprise service efficiency were analyzed. The relevant results are shown in Table 1

TABLE I. THE DESCRIPTIVE STATISTICS OF DIGITAL LEADERSHIP, EMPLOYEE DIGITAL LITERACY, AND THE FINANCIAL ENTERPRISE SERVICE EFFICIENCY

THE TABLE IS IN THE ATTACHMENT

The respondents' perception of digital leadership is at a moderate level. All dimensions and the overview of digital leadership scored within the "Moderate" range (2.50-3.49), with means between 3.36 and 3.46 for the dimensions and 3.35 for the overview of digital leadership. Digital transformation capability ranked highest (mean=3.46), while the overview of digital leadership ranked lowest (mean=3.35). Standard deviations between 0.970 and 0.998 for the dimensions, 0.772 for the overview of digital leadership, indicated low respondent divergence. The digital transformation capability dimension is relatively stronger than digital insight, highlighting the need for enhanced strategic planning.

The respondents' perception of employee digital literacy is moderate. All dimensions and the overview of employee digital literacy scored within the "Moderate" range (2.50-3.49), with means ranging from 3.38 to 3.40 for the dimensions and 3.41 for the overview of employee digital literacy. The overview of employee digital literacy ranked highest (mean = 3.41), while problem-solving ranked lowest (mean = 3.38). Standard deviations between 1.029 and 1.097 for the dimensions, 0.891 for the overview of employee digital literacy, suggested moderate variability. The communication and collaboration dimension is stronger than the problem-solving dimension, underscoring the need for practical digital tool training.

There were some differences in the respondents' assessments of the financial enterprise service efficiency. Intangible Resources and Human Resources reached the "Agree" level (3.50-4.49), while Tangible Resources and the overview of the financial enterprise service efficiency remained "Moderate" range (2.50-3.49), with means between 3.35-3.53 for the dimensions and 3.46 for the overview of the financial enterprise service efficiency. Intangible resources capability ranked highest (mean=3.53), while tangible resources ranked lowest (mean=3.35). Standard deviations between 0.999 and 1.083 for the dimensions, 0.889 for the overview of the financial enterprise service efficiency. Higher standard deviations for Intangible (1.047) and Human Resources (1.083) versus tangible resources (0.999) indicated greater consensus on tangible assets. This implies that intangible resources and human resources outperform tangible resources in driving service efficiency.

Inferential Statistics

H1: The difference in demographic factors affects the financial enterprise service efficiency differently.

Independent Sample t-tests and one-way ANOVA were conducted to test Hypothesis 1. The testing results, as shown in Table 2, indicate that neither gender nor age has a statistically significant effect on the financial enterprise service efficiency at a 0.05 significance level. However, educational background, working position, and working experience demonstrate a significant effect on financial enterprise service efficiency as observed in this analysis at a statistical significance level of 0.05

TABLE II. ANALYSIS RESULTS ON THE EFFECTS OF DEMOGRAPHIC FACTORS ON FINANCIAL ENTERPRISE SERVICE EFFICIENCY

Demographic factors	Financial enterprise service efficiency	Analysis Results
Gender	-	t(398) = -1.126, p = 0.767
Age	-	F(3, 396) = 1.292, p = 0.277
Educational Background	✓	F(3, 396) = 20.886, p = 0. 000*
Working Position	✓	F(3, 396) = 15.576, p = 0. 000*
Working Experience	✓	F(3, 396) = 10.650, p = 0. 000*

- **No different effects at the statistically significant level of 0.05**

✓ **having different effects at the statistically significant level of 0.05**

Identify applicable funding agency here. If none, delete this text box.

H2: Digital leadership influences the financial enterprise service efficiency.

Multiple linear regression was used to analyze the data and develop the forecasting equation at a 95% confidence level. The analysis results, as shown in Table 3, indicate that the four independent variables: digital strategic thinking, digital insight, digital transformation capability, and digital talent development have a positive influence on financial enterprise service efficiency, with a multiple correlation (R) of 0.623 and can predict the equation at 38.8 percent and the sig. Values are all equal to 0.000. All tolerance values were above 0.6, indicating that there is no correlation among the independent variables.

TABLE III. MULTIPLE LINEAR REGRESSION COEFFICIENTS FOR DIGITAL LEADERSHIP INFLUENCE FINANCIAL ENTERPRISE SERVICE EFFICIENCY

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	.819	.171		4.796	.000		
Digital strategic thinking (X1)	.203	.039	.228	5.150	.000	.788	1.268
Digital insight (X2)	.232	.039	.261	5.891	.000	.791	1.264
Digital transformation capability (X3)	.175	.039	.198	4.444	.000	.778	1.286
Digital talent development (X4)	.167	.040	.184	4.157	.000	.793	1.262
R = 0.623, R2 = 0.388, Adjusted R2 = 0.382, Standard Error = 0.692							

Dependent Variable: Financial Enterprise Service Efficiency

The prediction equation for the financial enterprise service efficiency is as follows:

YT = 0.819 +0.203X1 + 0.232X2 + 0.175X3 +0.167X4

(0.000*) (0.000*) (0.000*) (0.000*) (0.000*)

The analysis results show that digital insight has the most significant influence, followed by digital strategic thinking, digital transformation capability, and digital talent development.

H3: Employee digital literacy influences the financial enterprise service efficiency.

Multiple linear regression was used to analyze the data and develop the forecasting equation at a 95% confidence level. The results shown in Table 4 indicate that the three independent variables, including information and data, communication and collaboration, and problem-solving, have a positive influence on financial enterprise service efficiency, with a multiple correlation (R) of 0.601, which can predict the equation at 36.10 percent, with the significance values all equal to 0.000. All tolerance values were above 0.6, indicating that there is no correlation among the independent variables.

TABLE IV. MULTIPLE LINEAR REGRESSION COEFFICIENTS FOR EMPLOYEE DIGITAL LITERACY INFLUENCE FINANCIAL ENTERPRISE SERVICE EFFICIENCY

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	1.306	.149		8.771	.000		
Information and data (X1)	.208	.039	.250	5.303	.000	.728	1.374
Communication and collaboration (X2)	.201	.039	.235	5.164	.000	.779	1.283
Problem solving (X3)	.225	.038	.281	5.988	.000	.735	1.360
R = 0.601, R2 = 0.361, Adjusted R2 = 0.356, Standard Error = 0.706							

Dependent Variable: Financial enterprise service efficiency

The prediction equation for the financial enterprise service efficiency is as follows:

YT = 1.306 + 0.208X1 + 0.201X2 + 0.225X3

(0.000*) (0.000*) (0.000*) (0.000*)

The analysis results show that problem-solving has the most significant influence, followed by information and data, and communication and collaboration.

DISCUSSION

Demographic factors have varying effects on financial enterprise service efficiency. Gender shows no significant impact, consistent with research indicating that gender differences in financial decision-making do not translate to service efficiency disparities in collaborative settings (Falahati, 2011). Age does not directly affect overall service efficiency, though it influences the human resources dimension differently; mid-career professionals must balance experience and adaptability to leverage human resources effectively (Fatima et al., 2020). Educational background, working position, and working experience demonstrate differential effects on efficiency, with the mid-career cohort exhibiting distinct perspectives.

Digital leadership significantly enhances service efficiency in financial enterprises through four key predictors. Digital insight, the most influential factor, directly improves efficiency by strengthening data-driven capabilities such as market forecasting and analytics (Wade & Hulland, 2004). Similarly, digital strategic thinking plays

a pivotal role, as it aligns IT resources (e.g., platform-based strategies) with organizational objectives to optimize service delivery (Bharadwaj, 2000). Furthermore, digital transformation capability serves as a foundational enabler, where agile development and cloud adaptation automate financial processes (Vial, 2021). Finally, digital talent development complements these technical dimensions by up-skilling employees in areas such as AI collaboration, thereby reducing processing times (Bughin et al., 2018). Collectively, while digital insight and strategic thinking drive efficiency most prominently, transformation capabilities and talent development remain critical, underscoring the need for integrated investments in both technological and human resources.

All three dimensions of employee digital literacy exhibit statistically significant and notable influence on service efficiency. The finding suggests that employees who can effectively analyze problems, manage digital information, and collaborate using digital tools make a meaningful contribution to service efficiency.

Problem-solving emerges as the most influential factor, directly enhancing task completion efficiency through its core component of creative thinking (Eshet, 2004). Information and data capabilities closely follow in impact, where meta-cognitive strategies for information screening and data processing serve as key predictors of service performance(Bawden & Robinson, 2009). Concurrently, communication and collaboration significantly optimize service delivery cycles by enabling effective use of digital tools such as shared documents and instant messaging (Hargittai, 2005). Collectively, while problem-solving exerts the strongest influence on efficiency, information management and digital collaboration remain critical dimensions, highlighting the necessity of integrated skill development in the digital era.

CONCLUSION

This study has focused on the impact of digital leadership and employee digital literacy on the service efficiency of financial enterprises in Fuzhou City. The focus was on digital leadership dimensions, including digital strategic thinking, digital insight, digital transformation capability, and digital talent development. Employee digital literacy dimensions, including information and data, communication and collaboration, and problem solving. All dimensions of digital leadership and employee digital literacy were found to have a significant positive influence on service efficiency. Specifically, digital insight and digital strategic thinking were identified as the strongest drivers among leadership factors, while problem solving and information and data literacy were the most influential aspects of digital literacy. In contrast, demographic factors such as educational background, working position, and working experience demonstrated varying impacts, with bachelor's degree holders, staff, and junior managers, as well as employees with 10–14 years of experience, showing higher perceived efficiency gains.

This study reveals that service efficiency is closely associated with digital leadership and employee digital literacy, both of which exert a substantial positive impact on service efficiency. Digital leadership needs to foster strategic alignment and talent development, offering employees opportunities for skill enhancement and active participation in digital transformation initiatives. In this context, it is recommended that financial enterprises in Fuzhou should prioritize strengthening digital leadership capabilities, particularly in digital insight and strategic thinking, and improve employee digital literacy through targeted training programs in problem-solving and information management. These measures will enhance resource utilization—mainly intangible and human resources—and optimize service efficiency in the evolving digital landscape.

Based on the findings, the following recommendations are proposed to enhance the service efficiency of financial enterprises in Fuzhou:

1. Strengthen Digital Leadership Development

Enhance digital strategic alignment: Organizations should train leaders to integrate digital goals with business strategies, focusing on digital insights and strategic thinking. Workshops on AI-driven customer segmentation can help leaders translate data into actionable service improvements.

Prioritize digital talent development: Invest in cross-functional training programs to enhance employees' digital skills, including data analytics and fintech tool usage. Establish a "digital mentorship" system where senior leaders guide junior staff in applying digital technologies to service scenarios.

2. Improve Employee Digital Literacy

Targeted training programs: Design modules for different literacy dimensions.

Train employees in financial data visualization and responsible data usage. Promote cloud-based collaboration tools to streamline interdepartmental communication. Simulate complex service scenarios to enhance practical skills. Link digital literacy assessments to performance evaluations to motivate continuous learning.

3. Address Demographic Differences

Provide tailored up-skilling for employees with lower education levels, focusing on practical digital tool usage rather than theoretical knowledge. Reduce hierarchical barriers by involving staff and junior managers in digital strategy discussions, as their frontline experience can

inform service optimization. Retain mid-career employees through career development plans, while retraining long-tenured staff (15+ years) in emerging technologies to bridge the digital gap.

4. Policy Support for Digital Transformation

Provide tax incentives for financial institutions investing in digital leadership training and employee literacy programs. Establish a regional digital finance resource platform to share best practices.

By implementing these recommendations, financial enterprises in Fuzhou can enhance their service efficiency, leveraging digital leadership and employee literacy to thrive in the digital era of transformation

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TABLE XVIII. THE DESCRIPTIVE STATISTICS OF DIGITAL LEADERSHIP, EMPLOYEE DIGITAL LITERACY, AND THE FINANCIAL ENTERPRISE SERVICE EFFICIENCY

Digital Leadership	1	2	3	4	5	Mean	SD	Meaning	Rank
Digital strategic thinking	6	77	140	122	55	3.36	0.991	Moderate	4
	1.50%	19.25%	35.00%	30.50%	13.75%				
Digital insight	2	83	128	128	59	3.40	0.991	Moderate	2
	0.50%	20.75%	32.00%	32.00%	14.75%				
Digital transformation capability	2	80	114	141	63	3.46	0.998	Moderate	1
	0.50%	20.00%	28.50%	35.25%	15.75%				
Digital talent development	3	81	130	135	51	3.38	0.970	Moderate	3
	0.75%	20.25%	32.50%	33.75%	12.75%				
Overview of Digital Leadership		19	198	133	50	3.593	0.948	Moderate	5
		4.75%	49.50%	33.25%	12.50%				
Employee Digital Literacy	1	2	3	4	5	Mean	SD	Meaning	Rank
Information and data	9	81	122	120	68	3.39	1.059	Moderate	3
	2.25%	20.25%	30.50%	30.00%	17.00%				
Communication and collaboration	5	83	123	124	65	3.40	1.029	Moderate	2
	1.25%	20.75%	30.75%	31.00%	16.25%				
Problem solving	9	94	106	119	72	3.38	1.097	Moderate	4
	2.25%	23.50%	26.50%	29.50%	18.00%				
Overview of Employee Digital Literacy		57	176	114	53	3.41	0.891	Moderate	1
		14.25%	44.00%	28.50%	13.25%				
Financial Enterprise Service Efficiency	1	2	3	4	5	Mean	SD	Meaning	Rank
Tangible Resources	8	86	110	152	44	3.35	0.999	Moderate	4
	2.00%	21.50%	27.50%	38.00%	11.00%				
Intangible Resources	6	69	114	129	82	3.53	1.047	Agree	1
	1.50%	17.25%	28.50%	32.25%	20.50%				
Human Resources	7	77	101	129	86	3.53	1.083	Agree	2
	1.75%	19.25%	25.25%	32.25%	21.50%				
Overview of Financial Enterprise Service Efficiency		55	158	137	50	3.46	0.889	Moderate	3
		13.75%	39.50%	34.25%	12.50%				