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Effects of Digital Transformation on Firm Performance

-- Take Company in Chaoyang District, Beijing, China

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Abstract: Taking the company in Chaoyang District, Beijing, this paper discusses the impact of digital transformation on company performance. With the rapid development of information technology, digital transformation has become a key means for enterprises to enhance their competitiveness. Through the analysis of the Chaoyang District company, we found that the digital transformation not only optimized the company's business model and organizational structure, but also reshaped the corporate culture, thus significantly improving the company's performance.

Keywords: Digital Transformation; Corporate Performance; Organizational Structure.

1. Introduction

In the current era of rapid digital advancement, industries across the board must adapt to this digital wave, or they will face the loss of market share and a decline in competitiveness. Whether in terms of management or operational capabilities, they will encounter the need for reform and challenges. Digital transformation has become a critical factor for survival and enhancing competitiveness for many companies. The interior design industry is no exception; it must actively embrace digital technology and innovation to meet the ever-changing customer demands and challenges in the market.

Digital transformation refers to the process of improving business processes, enhancing efficiency, and fostering innovation through the adoption of digital technologies and tools. In this current digital age, various industries are actively utilizing digital means to address internal and external challenges. The real estate sector is no exception, especially for customers living in fast-paced and bustling cities like Beijing. They increasingly rely on and prefer using smartphones to make purchases and access the information they desire. However, all of this is contingent upon the evolution of a well-established digital platform and a diverse range of product categories to choose from.

This paper studies a design company in Chaoyang District, Beijing, hoping to provide valuable knowledge for the direction of digital transformation of Chinese interior design companies. The research findings can guide strategic actions, promote the effectiveness of digital reforms for sole proprietors, and ultimately improve overall company performance.

2. Research Methods and Data Sources

2.1. Respondents of the Study

This study focused on the owners or general managers of interior design companies located in Chaoyang District, Beijing, China, as the primary respondents. These individuals were chosen because of their extensive knowledge about their companies and their roles in overseeing business operations, including digital transformation and information technology innovations. Their perspectives are invaluable for understanding customer experiences and the overall performance of their companies. Interior design firms, particularly in micromanagement practices and in larger entities, allow these leaders to provide informed evaluations directly or through delegated authority to specialists in specific operational areas.

The sampling frame consisted of 135 registered interior design companies in Chaoyang District, as listed on aiqicha.baidu.com as of August 29, 2023. To ensure a robust statistical foundation for developing a structural equation model aimed at guiding strategy and project development, the study required a precise sample size. Utilizing the Raosoft Sample Size Calculator with a 5% margin of error and a 95% confidence level indicated that a sample size of 101 was sufficient for the research objectives.

The process of selecting participants involved a simple random sampling technique, executed through the "Randbetween" function in Excel, to guarantee each company had an equal chance of being included in the study. This method was chosen to maintain the integrity of the inferential statistical analysis needed for the structural equation modeling.

Initially, questionnaires were distributed to 108 respondents to account for potential non-responses, based on the calculated return rate. These respondents were randomly selected from the sampling frame using Excel. Out of the distributed questionnaires, 102 were successfully retrieved, providing a slightly higher response rate than anticipated. To refine the sample to the required 101, the recovered samples were renumbered and subjected to another round of random selection via Excel. This step ensured the final sample was both representative and complied with the study's methodological requirements.

To better understand the basic characteristics of the respondents, this study conducted statistical analysis on gender, age, education level, and position, with the distribution presented in the following table.

Table 1. Demographic Characteristics

Items		Frequency	Percentage (%)
Gender	Male	43	42.6
	Female	58	57.4
Age	20-25	20	19.8
	26-35	36	35.6
	36-45	18	17.8
	46-55	19	18.8
	56-Above	8	7.9
Educational Attainment	College-below	2	2
	Bachelor's Degree	57	56.4
	Master's Degree	27	26.7
	Doctorate Degree-Above	15	14.9
Positions	Ordinary staff	22	21.8
	Grassroots manager	37	36.6
	Middle manager	31	30.7
	Senior manager	11	10.9

Among respondents, 42.6% were males, and 57.4% were females. The age of them varied from 20 to 56 or above; 19.8% were between 20 and 25, 35.6% were between 26 and 35, 17.8% were between 36 and 45, 18.8% were between 46 and 55, and 7.9% over 56. In terms of education background, 2% of them were college or below, 56.4% had bachelor's degree, 26.7% had master's degree, and 14.9% had doctorate degree or above. For their positions, 21.8% participants were ordinary staff, 36.6% participants were grassroots manager, 30.7% participants were middle manager, and 10.9% participants were senior manager.

In terms of gender distribution, the results indicate a slight inclination towards females in the interior design industry. Interior design is commonly perceived as a field with a higher proportion of female professionals, possibly due to their sensitivity to aesthetics, creativity, and spatial perception. This finding aligns with previous industry trends, emphasizing the significance of female participation in the interior design industry.

The age structure reveals a balanced distribution of interior design professionals across different age groups, with a higher proportion of respondents concentrated between the ages of 26 and 35. This data suggests that individuals in this age group are more representative in the field of interior design, possibly reflecting their career development stage and extensive experience in the industry.

Regarding education level, the results show that the majority of respondents hold a bachelor's degree, aligning with the industry's requirement for professional knowledge and skills. Additionally, a considerable proportion of respondents have a master's or doctoral degree, indicating a continuous pursuit of advanced specialization and academic background among professionals in the interior design field.

In terms of position distribution, the higher proportion of grassroots managers and middle managers is consistent with previous research. This may indicate that managers at these two levels are more attentive to the issues addressed in the study and play significant roles in business decision-making.

Overall, most of the participants had an experience that enabled them to assess the impact of digital transformation and these research findings align with the characteristics and trends of the interior design industry, providing a deeper background and theoretical support for the results of the current study.

2.2. Data Gathering Procedure

Contact was established with the selected companies, specifically with their owners or general managers, who served as the study's respondents. Initial contact was made through formal letters or emails explaining the research purpose, objectives, and the importance of their participation. Prior to data collection, respondents were provided with informed consent forms outlining the study's purpose, potential benefits, and assurance of confidentiality. They were requested to sign or provide electronic consent, indicating their willingness to participate. The questionnaires were distributed to the selected respondents either physically or electronically, depending on their preference. Electronic surveys were conducted using secure online survey platforms to facilitate data collection. Respondents were given a specified period to complete the surveys, and reminders were sent as necessary to enhance response rates. The researchers distributed 108 questionnaire and there are 6 refusal thus substitution were made leading to a retrieval rate of 93.51%.

The data collection process was conducted over a defined timeframe to maintain consistency. Collected data were subjected to validation checks to identify any inconsistencies or errors. Any missing or unclear responses were followed up by the researchers for clarification. Respondents' confidentiality was strictly maintained throughout the research process. Data were anonymized and stored securely to prevent unauthorized access. The study adhered to ethical guidelines, ensuring that respondents' rights and privacy were respected. Any ethical concerns or issues that arose during data collection were addressed promptly.

2.3. Statistical Treatment of Data

In order to analyze the collected data and verify the proposed hypothesis, this study uses the following statistical treatment:

Mean. The assessment of respondents' perspectives on company performance, digital transformation capabilities, IT innovation, and customer experience will be determined using mean and standard deviation.

Standard Deviation. This study will use standard deviation to analyze each variable in the questionnaire, which will aid in identifying and quantifying the degree of variables addressed in the research. Standard deviation can also be

employed to detect outliers, providing further insights into the stability of the data and facilitating a deeper understanding of the distribution characteristics.

Multiple Regression Analysis. The mediating roles of customer experience and IT innovations in the relationship between digital transformation and firm performance will be explored through the utilization of Regression Analysis.

3. Presentation, Analysis and Interpretation of Data

3.1. Performance of Interior Design Companies in Beijing, China

The descriptive statistics in this section aim to assess participants' attitudes toward the study's Financial Performance and Non-financial Performance variables. The mean and standard deviation of participants' attitudes can be found in Table, Table 2.

Table 2. Financial Performance of Interior Design Company

No.	Financial Performance	Mean	Std. Deviation	Verbal Interpretation
1	Our company generates a relatively higher return on assets than our competitors do.	4.49	1.026	Neutral
2	Our business unit has a cost advantage compared to our major competitor	4.77	0.835	Good
3	Our company is highly effective in terms of capital investments.	4.48	1.026	Neutral
4	The return on investment of our company has improved over the past three years.	4.76	1.210	Good
5	Our company has remarkable customer growth over the past three years.	4.45	0.911	Neutral
6	The sales volume of our product offerings has increased over the past three years.	4.88	0.952	Good
7	Our company is more effective in opening up new markets or expanding existing markets than our competitors.	4.87	1.046	Good
8	Our company is able to change the market or lead customers' needs in new directions	4.71	0.993	Good
9	The profit of our company grew over the past three years	4.98	1.086	Good
10	. Our company achieves higher profit margins, even when charging comparable prices, than our major competitors.	5.03	1.170	Good
	Overall	**4.74**	**1.026**	**Good**

The results in Table 5 reflect the participants' views on the digital transformation performance of interior design companies in Chaoyang District, Beijing. The results show that the overall mean financial performance is 4.74, which falls within the "Good" category according to the seven-star scale. The average standard deviation of financial performance is 1.026, and within the overall range from a minimum of 0.835 to a maximum of 1.21, the mean is in the mid-range, indicating that the values are relatively consistent and stable.

3.2. Digital Transformation Capabilities of Interior Design Company

The descriptive statistics in this section aim to assess participants' attitudes toward the study's Digital Transformation Capabilities variables. The mean and standard deviation of participants' attitudes can be found in Table 3.

Table 3. Digital Transformation Managerial Capabilities of Interior Design Company

No.	Digital Transformation Capabilities (1-5 Managerial)	Mean	Std. Deviation	Verbal Interpretation
1	Senior executives regularly participate in digital strategy discussions and decision-making processes to ensure alignment with business objectives.	5.36	1.2	High
2	The organization has designated a Chief Digital Officer (CDO) or equivalent leadership role responsible for driving and overseeing digital transformation initiatives.	5.24	0.87	High
3	Digital transformation efforts are integrated into the company's overall strategic planning and are reflected in the annual budgeting process.	4.87	1.08	High
4	The company actively seeks partnerships and collaborations with external digital experts and technology providers to stay updated on industry best practices and emerging trends	4.83	0.98	High
5	There is a structured governance framework in place to manage digital transformation projects, including clear roles, responsibilities, and reporting mechanisms for stakeholders at all levels.	5.3	1.32	High
	Overall	5.12	1.09	High

The table provides an overview of the digital transformation managerial capabilities of an interior design company, with ratings on a scale of 1 to 5. The overall mean for the managerial capabilities is 5.12, with a standard deviation of 1.09, indicating a generally high level of digital transformation integration into managerial practices.

The item with the highest mean is "Senior executives regularly participate in digital strategy discussions and decision-making processes to ensure alignment with business objectives," with a mean of 5.36 and a standard deviation of 1.2. This suggests that the active involvement of senior executives in digital strategy discussions is perceived positively and is relatively consistent among respondents. The implication of this result is that strong leadership engagement in digital strategy is a notable strength for the interior design company, potentially contributing to effective alignment with business objectives and successful digital transformation initiatives.

3.3. Do Customer Experience and IT Innovations have Significant Mediating Roles to the Effect of Digital Transformation and Firm Performance?

The table below illustrates the direct and indirect effects of digital transformation (DT) on Information Technology Innovation (IT), Customer Experience (CE), and Company Performance (CP). Through estimating effects, standard errors, confidence intervals, and other indicators, we conducted a comprehensive analysis of the impacts along each path.

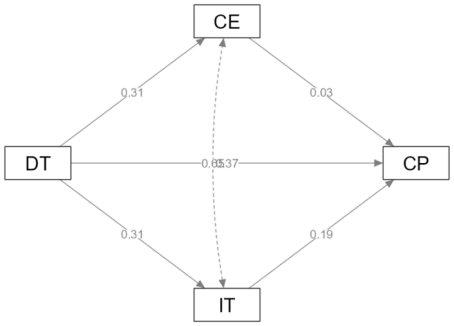

Fig 1. The direct and indirect effects of digital transformation (DT) on Information Technology Innovation (IT), Customer Experience (CE), and Company Performance (CP)

Table 4. Mediation Role of IT Innovation and Customer Experience to Relationship of Digital Transformation and Company Performance

Effect	Estimate	SE	95% C.I. (a)		β	z	p	Decision to Ho	Interpretation
			Lower	Upper					
Indirect									
DT ⇒ IT ⇒ CP	0.05994	0.0599	-0.0575	0.1774	0.0701	1	0.317	Failed to Reject	Not Significant
DT ⇒ CE ⇒ CP	0.00986	0.0416	-0.0717	0.0914	0.0115	0.237	0.813	Failed to Reject	Not Significant
Component									
DT ⇒ IT	0.30883	0.0785	0.1549	0.4628	0.3644	3.932	< .001	Reject	Significant
IT ⇒ CP	0.1941	0.1876	-0.1736	0.5618	0.1925	1.034	0.301	Failed to Reject	Not Significant
DT ⇒ CE	0.31151	0.1107	0.0945	0.5285	0.2696	2.814	0.005	Reject	Significant
CE ⇒ CP	0.03164	0.1331	-0.2293	0.2925	0.0428	0.238	0.812	Failed to Reject	Not Significant
Direct									
DT ⇒ CP	0.37077	0.0763	0.2212	0.5204	0.4338	4.858	< .001	Reject	Significant
Total									
DT ⇒ CP	0.44401	0.0731	0.3008	0.5872	0.5175	6.077	< .001	Reject	Significant

The table presents the results of a structural equation model, examining the indirect, component, direct, and total effects of digital transformation (DT) on corporate performance (CP) through intermediate variables like information technology (IT) and customer experience (CE). Each row corresponds to a specific pathway, and the columns provide estimates, standard errors (SE), 95% confidence intervals (C.I.), β coefficients, z-values, p-values, decision to reject the null hypothesis (Decision to Ho), and interpretation of the results.

In terms of indirect effects, the pathway DT ⇒ IT ⇒ CP shows a non-significant estimate of 0.05994 ($p = 0.317$), indicating that the indirect effect through information technology is not statistically significant. Similarly, the pathway DT ⇒ CE ⇒ CP also exhibits a non-significant estimate of 0.00986 ($p = 0.813$), suggesting that the indirect effect through customer experience is not significant.

Moving on to the component effects, the pathways DT ⇒ IT and DT ⇒ CE both show significant positive estimates of 0.30883 ($p < 0.001$) and 0.31151 ($p = 0.005$), respectively, implying that the direct effects of digital transformation on information technology and customer experience are statistically significant. However, the pathways IT ⇒ CP and CE ⇒ CP have non-significant estimates, indicating that the effects of information technology and customer experience on corporate performance are not statistically significant.

In the direct effects category, the pathway DT ⇒ CP exhibits a highly significant positive estimate of 0.37077 ($p < 0.001$), indicating a direct positive impact of digital transformation on corporate performance. Finally, in the total effects, the pathway DT ⇒ CP shows a highly significant positive estimate of 0.44401 ($p < 0.001$), encompassing both direct and indirect effects.

The results suggest that the direct effect of digital transformation on corporate performance is statistically significant, and the overall impact, considering both direct and indirect pathways, is also highly significant. While the indirect effects through IT and CE are not statistically significant individually, they contribute to the overall positive impact of digital transformation on corporate performance. These findings highlight the importance of considering

multiple pathways and intermediate variables when assessing the impact of digital transformation on organizational outcomes.

4. Findings

4.1. Evaluate the Financial and Non-Financial Performance of Interior Design Companies.

The survey results of both the financial and non-financial performance of interior design companies in Chaoyang District, Beijing are presented. The overall performance of the companies is considered good, receiving positive evaluations.

4.2. The Impact of Customer Experience and IT Innovation on Digital Transformation and Company Performance

Customer Experience (CE): The results indicate a substantial positive impact of customer experience on digital transformation (DT), evidenced by a path coefficient of 0.31151 ($p = 0.005$). However, the impact of customer experience on overall company performance (CP) was found to be statistically insignificant (path coefficient = 0.03164, $p = 0.812$).

Information Technology Innovation (IT): Information technology innovation significantly influences digital transformation, as indicated by a path coefficient of 0.30883 ($p < 0.001$). Interestingly, the impact of IT innovation on overall company performance did not reach statistical significance (path coefficient = 0.1941, $p = 0.301$).

Overall Implications: The study suggests that, within interior design companies in Chaoyang District, Beijing, customer experience and information technology innovation play crucial roles in shaping digital transformation initiatives. The positive influence of customer experience on digital transformation highlights the importance of aligning strategies to enhance customer interactions for effective transformation. Similarly, the impact of information technology innovation on digital transformation emphasizes the role of innovative technologies in driving overall transformation efforts.

However, it's noteworthy that while these factors contribute significantly to digital transformation, their direct impact on overall company performance varies. Digital transformation emerges as a mediating force, channeling the positive effects of customer experience and information technology innovation into improved company performance. This nuanced relationship underscores the need for a holistic and strategic approach to digital transformation, considering both customer-centric initiatives and technological innovations for optimal business outcomes.

References

[1] Liu, H., Ke, W., Wei, K. K., and Hua, Z. 2013. “The impact of IT capabilities on firm performance: The mediating roles of absorptive capacity and supply chain agility,” Decision Support Systems, (54:3), pp.1452-1462.

[2] Masli, A., Richardson, V. J., Sanchez, J. M., and Smith, R. E. (2011). “The business value of IT: A synthesis and framework of archival research,” Journal of Information Systems, (25:2), pp. 81-116.

[3] Melville, N., Kraemer, K., and Gurbaxani, V. 2004. “Review: Information technology and organizational performance: An integrative model of IT business value,” MIS Quarterly, (28:2), pp. 283-322.

[4] Mezias, S. J., and Glynn, M. A. 1993. “The three faces of corporate renewal: Institution, revolution, and evolution,” Strategic Management Journal, 14, pp. 77-77.

[5] Mithas, S., Krishnan, M. S., and Fornell, C. 2005. “Why Do Customer Relationship Management Applications Affect Customer Satisfaction?,” Journal of Marketing, (69:4), pp. 201-209.

[6] Mithas, S., Ramasubbu, N., and Sambamurthy, V. 2011. “How information management capability influences firm performance,” MIS Quarterly, (35:1), pp. 237.

[7] Mithas, S., Tafti, A., and Mitchell, W. 2013. “How a firm’s competitive environment and digital strategic posture influence digital business strategy,” MIS Quarterly, (37:2), pp. 511-536.

[8] Nunnally, J. C., and Bernstein, I. H. 1994. “The assessment of reliability”, Psychometric theory, (3:1), pp. 248-292.

[9] Nylén, D., and Holmström, J. 2015. “Digital innovation strategy: A framework for diagnosing and improving digital product and service innovation,” Business Horizons, (58:1), pp. 57-67.

[10] Sharples, L. Research note: Customer experience management in cruise pre-consumption. Int. J. Cult. Tour. Hosp. Res. 2019, 13, 235–243.