Presenting and Validating a Digital Transformation Model in Iran's Shahrvand Chain Stores

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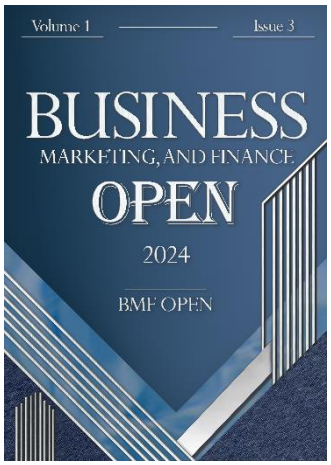

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Abstract: The present study aimed to propose a digital transformation model for chain stores in Iran, focusing on Shahrvand chain stores. The research was applied in terms of purpose, utilized a sequential mixed-methods exploratory approach for data collection, adopted a pragmatic paradigm, and used qualitative content analysis with a grounded theory approach in the qualitative phase. In the quantitative phase, it employed a descriptive-analytical survey/correlational design. The qualitative population included theoretical experts (university professors specializing in business) and practical experts (relevant managers of Shahrvand chain stores). Using the principle of saturation and purposive sampling, 20 interviewees were selected. The quantitative population consisted of all employees of Shahrvand chain stores. Using the minimum sample size calculation for confirmatory factor analysis and a multi-stage sampling method, 250 employees were chosen. Data collection methods included semi-structured interviews in the qualitative phase and researcher-developed questionnaires to validate the model from both expert and respondent perspectives in the quantitative phase. The validity and reliability of the tools were examined and confirmed in both qualitative and quantitative phases. Data analysis methods included thematic analysis using Maxqda-V18 software in the qualitative phase and descriptive and inferential statistical analysis (confirmatory factor analysis and one-sample t-test) using SPSS-V27 and SmartPLS-V3 in the quantitative phase. The findings revealed that the dimensions of digital transformation include digital user experience, inventory management, and digital marketing. Causal conditions were identified as information technology infrastructure, human resources, digital marketing strategies, and after-sales services. Strategies comprised digital technologies and software, customer service improvement, and organizational culture. Contexts involved process digitization and the analysis of logistics service quality. Outcomes included changes in customer behavior, impacts on internal operations, shifts in organizational culture, and effects on competitiveness. Finally, barriers included financial resource shortages, cultural and organizational resistance, and a lack of technical skills. The results also indicated that all relationships within the model components were significant. Ultimately, based on the identified factors, the research model was proposed, and findings demonstrated both internal and external validity based on feedback from qualitative participants and quantitative respondents.

Keywords: Digital Transformation, Digital Marketing, Chain Stores, Grounded Theory

1. Introduction

The rapid development and adoption of the internet and digital technologies have significantly transformed business processes, leading to the digital transformation of entire industry value chains. The term "Industrial Revolution 4.0" refers to the complex evolution of the industrial sector, encompassing technical advancements in manufacturing equipment, intelligent finished products, the Internet of Things (IoT), data tools and analytics, and the engagement of activities and stakeholders across all levels. To achieve the specific benefits of this transformation, companies must redesign their processes and business models [1]. Thus, entering the digital realm requires companies to adopt changes and develop appropriate strategies to address them. The challenge of digital transformation is particularly pronounced for established companies in large-scale industries, as they compete with innovative startups and new entrants [2-4].

New digital technologies are transforming every industry, and the digitization trend has given rise to "digital transformation" in most sectors [5]. The challenge for large, established companies in these industries lies not only in discovering and utilizing new technologies but also in simultaneously implementing the necessary organizational changes [6]. Currently, digital transformation is a critical subject that researchers cannot ignore when formulating business strategies. Digital transformation is an industry-level phenomenon that reshapes how organizations compete within and across industries. It affects "products, business processes, sales channels, and supply chains," impacting companies significantly and even extending beyond their boundaries [7]. Many companies are attempting to introduce corporate digital transformation strategies as systematic tools to address new opportunities and risks arising from digital technologies. However, which processes and strategic activities influence the development of digital transformation strategies within organizations remain poorly understood [8].

Digitization now encompasses almost every aspect of human life. Among these, the digitization of retail chain stores significantly impacts their efficiency and economic outcomes, which, in turn, transforms the quality of life. Therefore, it deserves special attention. The COVID-19 pandemic demonstrated that the closure of cities and regions worldwide, combined with population isolation, would have been impossible without the effective operation of online stores supplying essential goods [9]. However, the technical aspects of digital development remain contentious. On the one hand, they significantly influence competition. On the other hand, they require substantial costs and lead to profound transformations across all industries, including distribution companies. Retail and chain stores today play a critical role in providing essential goods to people, impacting their quality of life. Studying the effects of digitization on these stores is a novel, complex, and underexplored issue. While new industries and digital technologies are frequently discussed, many representatives and managers of small and medium-sized businesses have a vague understanding of the exact steps needed for digitalization [10].

In Iran, implementing digital transformation in chain stores such as Shahrvand faces numerous challenges. The first challenge is limited expertise in information technology. Some chain stores in Iran struggle with implementing and utilizing modern technologies due to insufficient knowledge in IT and digital domains. Another challenge is inadequate infrastructure. Successful digital transformation requires suitable infrastructures, such as high-speed internet networks and digital security systems. However, in some regions, weak infrastructure may hinder digital operations in stores. Cultural resistance is another issue. Some employees and managers in chain stores may resist and show reluctance toward digital transformation, possibly due to concerns about job losses or unfamiliarity with new technologies. Additionally, there is a lack of skilled workforce in this domain. Some employees in chain stores may lack the necessary knowledge to effectively utilize digital technologies. Therefore, training and raising awareness are essential to enable employees to use new technologies effectively. With proper planning, employee training, and investment in necessary infrastructure, Iran's chain stores can overcome the challenges of digital transformation and reap its benefits. However, these challenges require the implementation of principled solutions within appropriate frameworks. Given that these aspects have been overlooked in previous research, this study

addresses the question: What model can be proposed and validated for digital transformation in Iran's Shahrvand chain stores?

2. Methodology

This study is applied in terms of purpose and uses a sequential mixed-methods approach in terms of data type. It adopts a pragmatic (interpretive and positivist) paradigm. Regarding its nature (approach and design), it begins with exploratory research and transitions to descriptive-analytical research. In terms of reasoning (execution logic), the study employs a mixed-methods approach (inductive-deductive), utilizing inductive reasoning (in the qualitative phase involving meta-synthesis and Delphi techniques) and deductive reasoning (in the quantitative phase involving survey and correlational methods).

The first stage of the qualitative phase (meta-synthesis) included all articles and scientific works in domestic and international databases, as well as existing documents and regulations in this field. Twenty articles were selected through purposive non-random sampling, based on the PRISMA guidelines for article selection. The criteria for selecting articles in the meta-synthesis method included recency, relevance to the research topic, high scientific quality, use of appropriate methodologies, and diversity of perspectives.

The second stage (Delphi technique) included managers, university professors, and researchers knowledgeable in marketing, sales, digital transformation, and digital marketing. Based on the Delphi panel guidelines (Linstone & Turoff, 2011), 20 experts were selected through purposive non-random sampling. Selection criteria included holding a PhD, teaching in fields related to the research, expertise, participation in practical projects, related research experience, awareness of policies and challenges, analytical capability, diversity of perspectives, commitment to participation, decision-making experience, and practical involvement in the research domain.

The population for the quantitative phase comprised all employees of Shahrvand chain stores. Following guidelines from structural equation modeling experts such as Kline (2015), a minimum sample size of 200 is recommended for confirmatory factor analysis (CFA). To enhance generalizability, 258 respondents were selected via stratified proportional random sampling. Questionnaires were distributed both online and in person, with eight incomplete questionnaires excluded, resulting in 250 valid responses for statistical analysis.

In the first stage (meta-synthesis), systematic reviews of literature and scientific sources served as the primary data collection tool. This process involved targeted searches in scientific databases, journals, books, and dissertations related to the research topic. Content validity in this stage was ensured by thoroughly covering the examined concepts in the literature. Articles were carefully screened using a flow diagram (search and selection process) to identify suitable studies, applying temporal, spatial, methodological, and topical filters. Internal validity results indicated that findings from the meta-synthesis were not influenced by external factors and were accurately interpreted.

Reliability was established through precise documentation of the research process, intraresearcher and interresearcher alignment, and repeatability. Tools such as PRISMA checklists, independent analysis by a statistician, Cohen's kappa coefficient, and MAXQDA software were used to track coding and analysis steps systematically.

In the second stage (Delphi technique), a Delphi worksheet was utilized. Experts provided scores and qualitative feedback, with opportunities to suggest additional indicators. Content validity of the worksheet was assessed using the content validity ratio (CVR) formula, ensuring comprehensiveness. Reliability was evaluated using internal and temporal consistency, confirming the validity and reliability of the Delphi findings.

Researcher-developed questionnaires, informed by qualitative findings, were used to assess internal (derived from identified indicators) and external (based on the final model) validity. The questionnaire construction process involved systematic literature reviews and meta-synthesis following PRISMA protocols. Twenty articles were

analyzed thematically, and their findings informed the creation of Delphi worksheets, with expert consensus achieved over three rounds.

The final questionnaire included 97 items measured on a Likert scale ranging from "very high" to "very low." Content validity was confirmed using CVR and content validity index (CVI) based on expert feedback. Construct validity was evaluated through convergent and discriminant validity tests using SmartPLS 3. Reliability was measured via Cronbach's alpha, composite reliability, and McDonald's omega, with all variables exceeding thresholds (Cronbach's alpha > 0.7, CR > 0.7, AVE > 0.5).

Another researcher-developed questionnaire based on Shoghi and Karimi (2024) was used for external validity assessment. This questionnaire consisted of 34 items split into external (24 items) and internal (10 items) validity sections, rated on a 5-point Likert scale. Expert-supported documentation, including theoretical and empirical references, was provided to ensure precise responses.

In the qualitative phase, thematic analysis was conducted using MAXQDA Analytics Pro 2018 to identify themes and patterns in selected articles and Delphi feedback. The Delphi results were evaluated using mean, standard deviation, and Kendall's coefficient of concordance to measure expert agreement, processed in IBM SPSS Statistics 16.

In the quantitative phase, descriptive statistics (e.g., frequency, tables, charts, mean, standard deviation, skewness, and kurtosis) were used to describe demographic characteristics and research variables. Inferential statistics, including confirmatory factor analysis for internal validity and one-sample t-tests for external validity, were conducted using IBM SPSS Statistics 23 (2015) and SmartPLS 3 (2016).

3. Findings

The findings for presenting and validating the digital transformation model in Shahrvand chain stores in Iran are based on the qualitative and quantitative phases.

Phase 1: Qualitative - Meta-Synthesis

Step 1: Identifying Dimensions, Components, and Indicators

In the first stage of the qualitative phase, the dimensions, components, and indicators of the digital transformation model in Shahrvand chain stores were identified using a systematic review approach based on the PRISMA framework. The following steps were taken:

1. **Steps for Conducting the Meta-Synthesis to Identify Digital Transformation Components in Shahrvand Chain Stores:**
    - **Stage 1: Defining the Research Scope and Selecting Studies to Utilize:**
        - Determining search parameters such as publication dates and types of studies.
        - Establishing criteria for selecting documents from the previous stage.
        - Defining strategies for searching documents and databases.
    - **Stage 2: Systematic Critique of Selected Documents:**
        - Initial screening.
        - Detailed screening.
        - Analysis.
    - **Stage 3: Synthesis - Creating Something New from Separate Elements:**
        - **Aggregative Synthesis:** A process similar to physical changes where findings from selected studies are combined, as often seen in quantitative meta-analyses (Gough et al., 2012).
        - **Synthetic Synthesis:** A process where the findings of other studies are transformed into data that are combined and recreated with a new identity.

2. **Flow Diagram (Article Search Process):**: The flow diagram for digital transformation in Shahrvand chain stores includes temporal (domestic and international), spatial (local and international databases), methodological (meta-synthesis, review, qualitative, and quantitative), and topical (keyword-based) constraints. Initial and detailed screenings based on PRISMA guidelines resulted in the selection of 20 articles, which were analyzed for quality and validity.
3. **27-Point Checklist for Assessing Article Quality:**: A systematic review of relevant journals from 2011 to 2025 (domestic) and 2000 to 2024 (international) identified 30 articles on digital transformation. The overall quality compliance rate was 64%, with 54% of deficiencies in the methodology sections. The most significant issues were biases in initial studies and errors in synthesizing results.
    - **Distribution of Articles by Year and Domain:**
        - Most articles were from 2017–2020 (64.7%) internationally and 2016–2019 (68.2%) domestically.
        - Articles were primarily authored by organizational management (42.5%) and legal researchers (33.1%).
        - 33.3% were domestic articles, and 66.6% were international.
4. **Analysis and Synthesis (Aggregative and Synthetic):**: The synthesis phase identified dimensions of digital transformation in Shahrvand chain stores. Extracted indicators from the meta-synthesis were visualized using a word cloud to represent key concepts.

Phase 2: Qualitative - Delphi Technique

In the second phase, the indicators identified through meta-synthesis were presented to experts in the form of Delphi worksheets. Experts were asked to rate each indicator on a scale of 1 to 5.

- Indicators with an average score below 4 were removed after the first Delphi round, resulting in the exclusion of five indicators.
- In the second round, six indicators were refined based on expert feedback, and no additional indicators were removed. Experts validated the components and dimensions.
- To ensure the final model's validity, the Delphi process continued to a third round. In this round, all indicators received scores above 4.

Consensus Evaluation:: Kendall's coefficient of concordance was used to measure agreement among Delphi panel members. The findings indicated strong expert consensus in the second and third rounds, leading to the conclusion of the Delphi process after the third round.

Table 1. Dimensions, Components, and Indicators of Digital Transformation in Shahrvand Chain Stores

Dimension	Component	Indicator
Digital Transformation	Digital User Experience	- Designing the Shahrvand website and application with a simple, attractive interface to expedite product search and purchase.
		- Offering special promotions to customers based on their previous purchases, such as personalized discounts for loyal customers.
		- Providing the option to purchase products from the Shahrvand website and deliver them quickly and securely to the customer's location.
		- Employing augmented reality in Shahrvand stores to present products interactively, especially in the home appliance department.
	Inventory Management	- Implementing advanced software for managing product inventory in Shahrvand stores to prevent shortages or overstocking.
		- Using sales data and customer behavior to forecast demand and optimize inventory in Shahrvand stores.
		- Employing RFID technology for accurate and rapid tracking of products in the warehouse and on shelves in Shahrvand stores.
		- Using automated systems to optimize supply and distribution processes in Shahrvand stores.
	Digital Marketing	- Promoting Shahrvand products and services through social media platforms (e.g., Instagram, Telegram) to attract new customers.

		- Analyzing customer purchasing behavior in Shahrvand stores to improve marketing strategies and increase sales.
		- Sending targeted emails and text messages to Shahrvand customers to inform them about discounts and special offers.
		- Optimizing the Shahrvand website for search engines and online advertising to increase visibility in search results.
Causal Conditions	Information Technology Infrastructure	- Providing high-speed internet access for customers and employees in Shahrvand chain stores.
		- Implementing data management systems to store and process customer and sales information in Shahrvand stores.
		- Procuring suitable hardware (e.g., servers, workstations) to enhance digital system performance in Shahrvand stores.
		- Employing security technologies to protect Shahrvand customers' personal and financial data and prevent data breaches.
		- Implementing integrated software to manage store operations (sales, inventory, accounting) in Shahrvand.
	Human Resources	- Conducting ongoing training sessions for Shahrvand store employees on new technologies and digital tools.
		- Encouraging employees to propose innovative and creative ideas at Shahrvand.
		- Providing the necessary tools for Shahrvand store employees to effectively use digital technologies.
		- Cultivating an organizational culture at Shahrvand that regards digital changes as opportunities and motivates employees to embrace them.
		- Hiring IT specialists to improve digital processes and information technology in Shahrvand stores.
	Digital Marketing Strategies	- Analyzing customer data from Shahrvand stores to identify needs and preferences, thereby improving services.
		- Designing and executing online advertising campaigns to attract new customers and increase sales in Shahrvand.
		- Establishing and maintaining active social media accounts for direct interaction with customers and prompt responses to questions.
		- Producing high-quality and engaging content to attract and retain Shahrvand store customers.
		- Evaluating advertising campaign results and continuously improving marketing strategies in Shahrvand stores.
	After-Sales Services	- Providing online customer services and 24-hour support to address customer needs.
		- Streamlining the return process and after-sales services for Shahrvand customers to boost their satisfaction.
		- Employing modern technologies such as QR codes to enhance the shopping experience in Shahrvand stores.
		- Conducting surveys to gather feedback from Shahrvand customers to improve services and products.
		- Offering a unique shopping experience tailored to customers' behavior and preferences in Shahrvand stores.
Strategy	Digital Technologies and Software	- Using sales and inventory management software to improve the performance of Shahrvand stores.
		- Providing mobile applications for online purchases and viewing inventory in Shahrvand stores.
		- Implementing digital payment systems (e.g., NFC, QR codes) for easier payment at Shahrvand.
		- Employing business intelligence systems to analyze data and enhance decision-making in Shahrvand stores.
		- Designing online platforms to facilitate better communication and interaction with Shahrvand customers.
	Customer Service Improvement	- Offering online customer service and 24-hour support to meet Shahrvand customers' needs.
		- Providing special promotions based on customers' purchase histories.
		- Conducting online surveys to collect feedback from Shahrvand store customers.
		- Allowing both online and in-store shopping options at Shahrvand.
		- Hosting online promotional events and special sales to attract customers.
		- Improving fast and convenient delivery options for Shahrvand customers.
	Organizational Culture	- Conducting continuous training sessions for Shahrvand employees on new technologies.

		- Creating an environment that encourages innovation and idea generation among Shahrvand employees.
		- Forming diverse teams to implement digital transformation projects in Shahrvand stores.
		- Hiring specialists to improve digital processes and information technology at Shahrvand.
		- Holding workshops and training courses to enhance employee skills in Shahrvand stores.
		- Fostering a culture of embracing digital changes and innovation among Shahrvand employees and management.
Context	Process Digitization	- Using automated systems to streamline purchasing and payment processes at Shahrvand.
		- Employing digital inventory and warehouse management systems to enhance Shahrvand's performance.
		- Implementing customer relationship management (CRM) software for improved customer interactions.
		- Optimizing supply and distribution processes through digitization in Shahrvand stores.
		- Utilizing data for improved business decision-making at Shahrvand.
		- Implementing managerial dashboards for performance analysis and reporting in Shahrvand stores.
	Logistics Service Quality Analysis	- Providing a mobile application for online shopping and inventory viewing in Shahrvand stores.
		- Offering special promotions based on customers' purchase histories in Shahrvand stores.
		- Providing fast and convenient delivery to Shahrvand customers.
		- Employing modern technologies like augmented reality to enhance the shopping experience in Shahrvand stores.
		- Running online advertising campaigns and offering appealing discounts at Shahrvand stores.
		- Using online surveys to gather feedback from Shahrvand store customers.
Outcome	Changes in Customer Behavior	- Encouraging customers to shop online and use mobile applications at Shahrvand.
		- Meeting evolving customer expectations for service and delivery speed.
		- Offering personalized promotions to Shahrvand customers.
		- Urging customers to consult online reviews prior to purchasing at Shahrvand.
		- Facilitating a shift toward digital payments at Shahrvand stores.
	Impact on Internal Operations	- Reducing resource waste and improving inventory management in Shahrvand stores.
		- Optimizing supply and distribution processes for greater efficiency in Shahrvand stores.
		- Using data to forecast demand and optimize inventory in Shahrvand stores.
		- Minimizing operational times through process automation in Shahrvand stores.
		- Enhancing reporting systems and performance analysis in Shahrvand stores.
		- Improving internal communication and teamwork across different departments in Shahrvand stores.
	Changes in Organizational Culture	- Developing a culture that encourages innovation and transformation among Shahrvand employees.
		- Increasing employee willingness to learn and update skills at Shahrvand.
		- Motivating employees to participate in digital processes and innovations at Shahrvand.
		- Creating an environment that promotes ideation and innovation in Shahrvand stores.
		- Strengthening collaboration and interaction among the various organizational units at Shahrvand.
		- Emphasizing the importance of customer experience at all levels of Shahrvand and striving to enhance it.
	Impact on Competitiveness	- Improving services and products to boost Shahrvand's competitiveness in the chain store market.
		- Enhancing Shahrvand's brand image and raising customer awareness of its services and products.
		- Attracting new customers through digital channels and online advertising.

		- Increasing customer loyalty by providing a better shopping experience and high-quality services at Shahrvand.
		- Strengthening Shahrvand's ability to respond quickly to market changes and needs.
		- Advancing digital marketing and advertising strategies to boost sales at Shahrvand stores.
Barriers	Lack of Financial Resources	- Challenges in obtaining sufficient budget for digital transformation initiatives at Shahrvand.
		- High costs of modern technologies and software needed for enhancing Shahrvand's performance.
		- Limited investment in information technology infrastructure at Shahrvand.
		- Insufficient financial support from senior management at Shahrvand for digital transformation projects.
		- Substantial costs for employee training and developing digital skills in Shahrvand stores.
	Cultural and Organizational Resistance	- Employee reluctance to embrace new digital changes at Shahrvand.
		- Fear and uncertainty about modern technologies and digital changes among Shahrvand staff.
		- Lack of motivation and interest in acquiring digital skills at Shahrvand.
		- Existence of a traditional culture misaligned with digital and innovative requirements at Shahrvand.
		- Insufficient support and advocacy from management for digital and cultural changes in Shahrvand.
	Lack of Technical Skills	- Shortage of IT specialists to implement digital projects at Shahrvand stores.
		- Inadequate training for employees regarding digital tools and modern technologies at Shahrvand.
		- Limited awareness among employees of the benefits of digital transformation and its impact on Shahrvand's performance.
		- Challenges in adapting to new software and systems in Shahrvand stores.
		- Lack of training courses and workshops on modern technologies for Shahrvand employees

The validation of the proposed model was conducted in two aspects: internal and external validity. Model validity, as a key part of research, not only ensures the accuracy and reliability of the designed model's results but also demonstrates its applicability in real-world environments. Accordingly, the digital transformation model for Shahrvand chain stores in Iran was validated.

A 34-item questionnaire, based on a 5-point Likert scale ranging from "very low" to "very high," was distributed among 30 experts in the field of digital transformation. This questionnaire assessed external validity (components: purpose, research method design, control of confounding variables, and alignment) and internal validity (components: logical review, expert feedback, and sensitivity analysis). A one-sample t-test was used to validate each component. Overall, the results indicated high validity for the various components of the digital transformation model in Shahrvand chain stores in terms of both internal and external validity.

The detailed results of the one-sample t-test are presented in Table 2:

Table 2. Results of the One-Sample T-Test for Model Validation

Component	Mean	Standard Deviation	t-Value	Significance Level	Mean Difference	Lower Bound	Upper Bound
External Validity	4.20	0.65	9.00	0.000	1.20	3.90	4.50
Purpose	4.20	0.70	8.90	0.000	1.20	3.90	4.50
Research Method Design	4.25	0.70	9.10	0.000	1.25	3.90	4.60
Control of Confounding Variables	4.10	0.75	8.30	0.000	1.10	3.80	4.40
Alignment	4.05	0.80	7.50	0.000	1.05	3.70	4.40
Internal Validity	4.35	0.60	9.20	0.000	1.35	4.00	4.70
Logical Review	4.15	0.75	8.00	0.000	1.15	3.80	4.50

Expert Feedback	4.30	0.60	9.50	0.000	1.30	4.00	4.60
Sensitivity Analysis	4.40	0.55	9.80	0.000	1.40	4.10	4.70

The results of the one-sample t-test indicate that the significance level for both external and internal validity, as well as all components of these categories, is below 0.001. The calculated mean values range from 4.05 to 4.40, which highlights the statistical significance of the findings with a 99% confidence level. These results confirm the high validity of the model.

From the data, it can be inferred that the internal validity of the model, with a mean of 4.35 and a t-value of 9.20, is higher than its external validity. Within the external validity components, the design of the research method exhibited the highest validity, achieving a mean of 4.25 and a t-value of 9.10. Similarly, among the internal validity components, sensitivity analysis demonstrated the highest validity, with a mean of 4.40 and a t-value of 9.80. These results collectively reinforce the credibility and robustness of the model in addressing the challenges and opportunities of digital transformation in Shahrvand chain stores.

The internal validity of the model was assessed using Confirmatory Factor Analysis (CFA) and the R^2 coefficient. Partial least squares (PLS) CFA confirmed the model's fit, with all components and indicators showing significance values greater than 1.96, validating the model. The R^2 coefficient, which measures the influence of independent variables on dependent variables, demonstrated strong effects across all dimensions, with values exceeding the threshold of 0.67 (strong). External validity was evaluated using the Q^2 index, which measures predictive relevance. The Q^2 values for the main dimensions—0.312, 0.238, and 0.295—indicated desirable predictive power, meeting the established thresholds of 0.02 (low), 0.15 (moderate), and 0.35 (high). Furthermore, the Goodness-of-Fit (GOF) index, introduced by Tenenhaus et al. (2005), confirmed the model's fit with a value of 0.652, surpassing the 0.36 threshold for a strong fit and indicating excellent overall model performance.

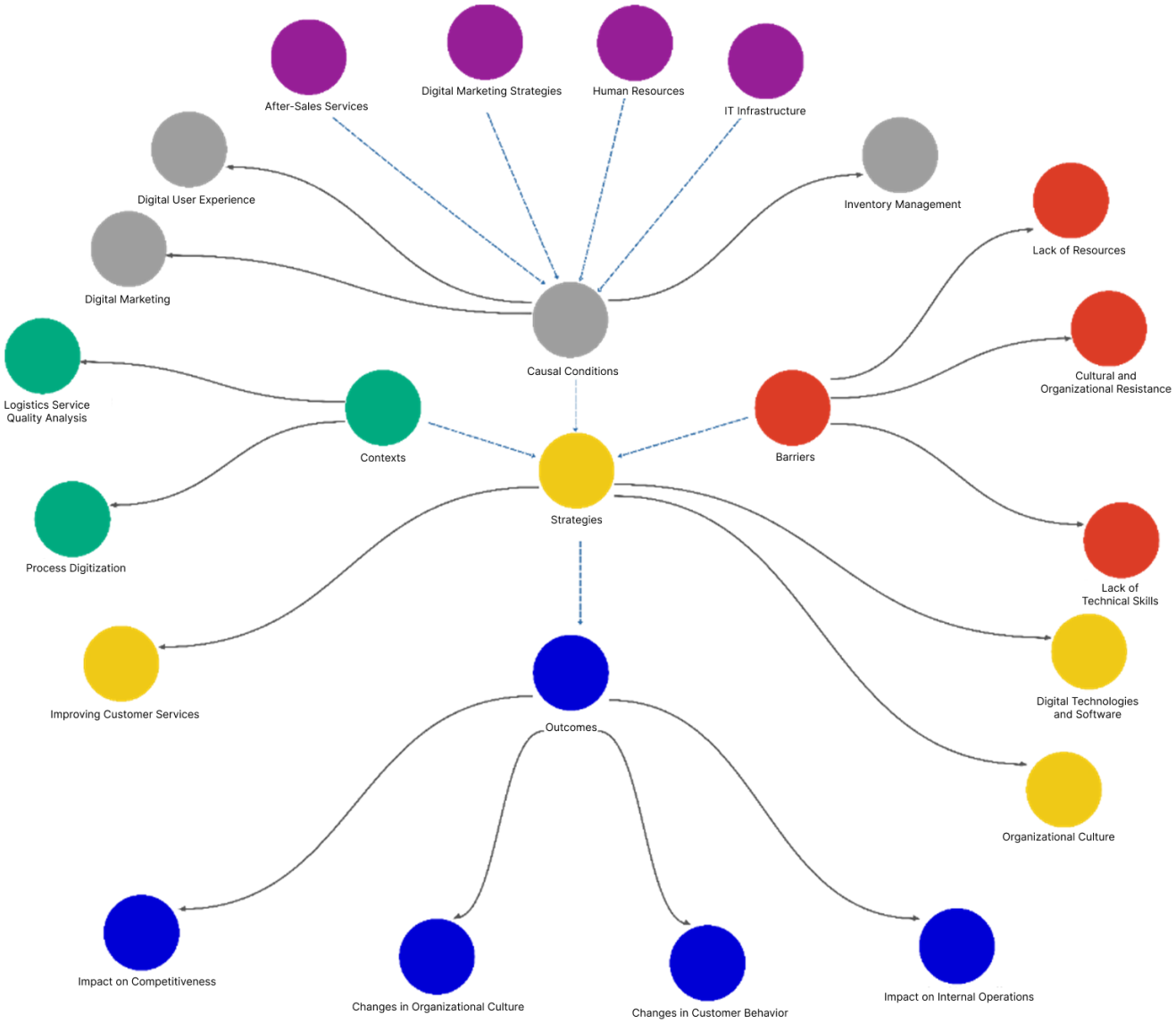

Figure 1. Conceptual Model of the Study

4. Discussion and Conclusion

The digital transformation model for Shahrvand chain stores represents a comprehensive and multidimensional process, encompassing various interdependent dimensions. This study aligns with the prior findings [2, 11-13]. Based on the research findings, the model includes core dimensions, causal conditions, strategies, contexts, outcomes, and barriers. Digital transformation, as the central axis of the model, comprises digital user experience, inventory management, and digital marketing. These dimensions directly influence how customers interact with the stores. Digital user experience, enabled by modern technologies, allows customers to enjoy a seamless and efficient shopping process. Inventory management aids stores in effectively controlling stock, avoiding shortages or excess inventory. Digital marketing empowers stores to establish personalized and targeted communications with customers, promoting their products and services.

Causal conditions influencing digital transformation include IT infrastructure, human resources, digital marketing strategies, and after-sales services. IT infrastructure forms the foundation for digital transformation, enabling stores to leverage advanced technologies. Skilled human resources can enhance processes and services.

Digital marketing strategies facilitate effective customer engagement and service updates. After-sales services build trust and loyalty among customers. The strategies for digital transformation encompass digital technologies and software, improving customer services, and enhancing competitiveness. These strategies allow stores to optimize their operations, elevate customer experiences, and remain competitive in the market. Digital technologies and software improve efficiency by streamlining processes, while better customer services lead to increased satisfaction and loyalty. Competitiveness ensures stores can retain their market position and attract new customers.

The contexts of digital transformation include process digitization and the analysis of logistics service quality. Process digitization enables stores to improve internal processes and boost efficiency. Analyzing logistics service quality optimizes supply chains and enhances customer experiences. These contexts serve as essential infrastructure for successfully implementing digital transformation in Shahrvand chain stores. The outcomes of digital transformation include changes in customer behavior, impacts on internal operations, shifts in organizational culture, and enhancements in logistics service quality. These outcomes highlight the positive effects of digital transformation on store performance and customer satisfaction.

However, barriers such as a lack of financial resources, cultural and organizational resistance, and insufficient technical skills present challenges to successful digital transformation. Identifying and managing these barriers is essential for effectively implementing the digital transformation model in Shahrvand chain stores. This comprehensive and multidimensional model enables stores to leverage advanced technologies to enhance services and customer experiences, ultimately achieving sustainable growth and success. By addressing causal conditions, strategies, contexts, outcomes, and barriers, stores can successfully execute digital transformation.

One of the main limitations of this study is the potential difficulty in selecting a representative sample from the target population, which may affect the validity of the findings. An incorrect or limited sample selection could influence the results. Additionally, the timing of the research could impact the findings. For example, if the study is conducted during periods of economic or social pressure on the stores, it could affect their responses. Based on the study's findings, future researchers are recommended to examine larger and more diverse employee samples to ensure generalizability across different populations. Investigating gender, age, and cultural differences could provide deeper insights into the subject. Comparative studies between countries or different employee groups could identify common patterns and cultural differences in technology adoption. Such analyses could lead to a deeper understanding of the impacts of digital transformation in various contexts.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

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Conflict of Interest

The authors report no conflict of interest.

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