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Novel Management Model for Leveraging Leadership for Successful Digital Transformation in Telecommunications Enterprises

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Abstract

Digital transformation (DT) is crucial for improving telecommunications efficiency and competitiveness. This study examines the role of change leadership in driving successful DT in Vietnamese telecommunication enterprises, focusing on its impact on employee engagement, employee commitment, DT communication, and DT capacity. A mixed-methods approach was employed, combining qualitative insights with quantitative data from surveys of management personnel overseeing digital transformation projects. Data were analyzed to assess direct and indirect relationships using structural equation modeling. The results indicate that change leadership is a significant driver of DT success with the strongest direct effect on employee commitment. Additionally, employee commitment and digital transformation communication positively influence success through their indirect effects on an enterprise's DT capacity. Leadership plays a critical role in fostering commitment and aligning effort with DT goals. This study introduces a novel paradigm illustrating the interplay of various interrelated factors influencing the effectiveness of digital transformation, distinguishing it from previous studies that examined these factors in isolation. This approach provides novel insights, especially regarding Vietnamese telecommunications, a domain inadequately examined in previous studies on leadership-driven digital transformation initiatives.

Keywords: Change Leadership; Digital Transformation; Employee Engagement; Employee Commitment; Enterprise Capacity; Telecommunications.

1. Introduction

Digital transformation (DT) has become a strategic priority for organizations that aim to enhance operational efficiency, innovation, and customer engagement. In rapidly advancing industries such as telecommunications, where continual adaptation and technical progress are vital, digital transformation is not simply a competitive advantage; it is a necessity [1]. While digital transformation is frequently associated with the implementation of new technology, it requires robust leadership to navigate organizational change and synchronize strategic objectives with transformation initiatives [2, 3]. Leadership is crucial in motivating employees, fostering a culture of change, and ensuring that an organization's vision aligns with its DT objectives [4].

The significance of leadership in digital transformation is widely acknowledged. Fundamental research conducted by Bass & Avolio [5], Saks [6], and Uhl-Bien [7] delineates the significance of leadership in orchestrating organizational

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change. Recently, experts have highlighted change leadership, defined as the capacity to engage and inspire individuals to accept transformation, which is especially pertinent in digital transformation. Rialti & Filieri [8] emphasized that strong leaders not only formulate strategies but also empower personnel, which is essential for surmounting opposition to change and promoting creativity. The notion of agile or digital leadership has gained prominence and is defined by adaptability, digital vision, and interdisciplinary teamwork. Yao et al. [9] demonstrated that digital leadership improves digital transformation outcomes via processes such as strategic consensus and organizational identity. Senadjki et al. [10] asserted that leadership competencies, experience, and predictability indirectly affect business performance by facilitating digital transformation. Notwithstanding these insights, a considerable vacuum persists in the research concerning the precise function of change leadership in the success of digital transformation, particularly within sector-specific and developing economic contexts. Prior studies either generalized leadership styles or prioritized technology elements, neglecting the impact of leadership behaviors on critical mediators such as employee engagement, communication, and organizational readiness [11, 12].

By focusing on the Vietnamese telecommunications industry, which is undergoing substantial digital transformation driven by governmental initiatives and market forces, this study also seeks to close these gaps. Many businesses continue to face challenges, such as low leadership participation, resistance from employees, and limited ability to adapt. These issues reflect worldwide findings that highlight the need for strong, inclusive leadership that can promote motivation and alignment at all organizational levels. This study examines the direct and indirect effects of leadership by focusing on three important mediators: organizational competency, employee engagement, and commitment to change. It offers a comprehensive conceptual framework linking the results of digital transformation to leadership behavior.

This research makes four significant contributions to the literature. Initially, it emphasized change leadership as a unique leadership paradigm and underscored its pivotal function in facilitating digital transformation, distinguishing it from broader leadership models such as transformational or digital leadership. Second, it constructs a thorough conceptual framework that connects change leadership to digital transformation success via the mediating factors of employee engagement, commitment to change, and organizational capacity, thus providing a more refined understanding of the mechanisms through which leadership affects transformation results. Third, by implementing this model in the Vietnamese telecommunications sector, a domain that is both inadequately studied and experiencing swift digital transformation, this research fills a notable empirical and geographic void in the literature. This study offers practical insights for managers and policymakers by delineating leadership techniques and organizational practices that facilitate successful digital transformation, thereby reconciling academic theory with practical applications in rising market contexts. This research integrates mediating mechanisms to elucidate how leadership influences digital transformation, in contrast to previous research, which mostly focused on the direct effects of leadership on change outcomes. It posits that leadership behaviors affect employee commitment to change and organizational capability, which are two essential facilitators of transformation, both directly and indirectly. The proposed paradigm asserts that the success of transformation relies not only on vision but also on leaders' abilities to cultivate trust, involvement, and alignment across the business [13, 14].

The novelty of this study lies in its integrated model, which situates change leadership at the core of digital transformation, incorporating communication, organizational support, and psychological engagement as key channels. By analyzing these dynamics within the Vietnamese telecommunications industry, the study offers insights that are both academically rigorous and practically relevant [15, 16].

The remainder of this paper is structured as follows: In Section 2, the theoretical framework is presented along with a review of pertinent literature. The research methodology, including the procedures for gathering and analyzing data, is described in Section 3. Section 4 discusses the research findings and their consequences for telecom leadership and digital transformation. Finally, Section 5 concludes the paper and highlights important findings, limitations, and suggestions for further research.

2. Research Model and Hypotheses

2.1. Research Model

This study is grounded in two principal theories: the Transformational Leadership Theory and Organizational Capacity for Change. These theories offer a thorough framework for comprehending how leadership impacts the efficacy of change management, particularly in telecommunications companies that are experiencing substantial technological transformations. It encompasses essential elements that affect the effectiveness of digital transformation, including employee engagement, commitment to change, and organizational capacity for change. These characteristics are crucial for comprehending how leadership influences transformation results in the telecommunications sector.

Drawing on Transformational Leadership Theory [5], the model asserts that change leadership is essential for successful digital transformation. Transformational leaders articulate a distinct vision, foster creativity, and synchronize company objectives with employee engagement, which are essential for managing the intricacies of digital transformation. This corresponds with the findings of Gill [17] and Armenakis et al. [18], who assert that successful

leadership inspires employees to align with transformation objectives, thus enhancing organizational preparedness for change. Khaw et al. [19] emphasized the significance of leadership in influencing employee responses to organizational change, which is crucial for mitigating resistance during digital transformation initiatives.

This idea emphasizes employee engagement and commitment to change as essential mediating factors. Saks [6] and Yasir et al. [20] indicate that engaged employees are more inclined to actively facilitate the success of transformation initiatives. Employee commitment to change is essential for overcoming opposition and assimilating new digital practices, particularly in the rapidly evolving telecommunications sector.

The model demonstrates the organizational capacity for change, indicating an organization's capacity to adapt and successfully implement change initiatives. Companies with a robust change capacity, as noted by Klarner et al. [21], are more proficient in navigating digital transformations. Elving [22] emphasized that enhanced organizational capacity relies on transparent communication that fosters employee trust and engagement in the digital transformation process. Enhancing this capacity necessitates leadership to foster a culture of learning, innovation, and flexibility, thereby empowering firms to effectively navigate operational and technological transformations.

The study also references the current literature, such as Schaufeli [23], who emphasizes that engaging leadership can improve employee engagement, which is a crucial factor for successful digital transformation. Schaufeli's research on engaging leadership emphasizes that leadership behaviors are essential for enhancing employee work engagement, which is directly linked to the success of organizational change initiatives. Vithayaporn & Ashton [24] enhanced conversation by analyzing the significance of employee engagement and innovative work behaviors in promoting organizational performance, particularly during significant transitions such as digital transformation. Their research highlights the significance of engaged employees in fostering innovative behaviors that are essential for successful digital transformation. Supriharyanti & Sukoco [25] elucidated the organizational capabilities necessary to facilitate digital transformation. Their research reinforces the idea that organizations need to build change capacity by fostering a culture of learning, innovation, and knowledge sharing, which are essential elements for the successful implementation of digital transformation initiatives.

This integrated approach presents an alternative perspective to conventional change models, such as Kotter's eight-step model or Lewin's unfreeze-change-refreeze model, which may insufficiently consider an organization's fundamental readiness or the leadership behaviors essential for maintaining transformation, despite providing crucial frameworks for managing change processes. Similarly, digital maturity models effectively evaluate an organization's technological advancement but often focus less on cultural dynamics and leadership involvement throughout implementation. In the fast-evolving telecommunications sector, which is characterized by rapid innovation and growing complexity, these additional factors become especially relevant. In Vietnam's telecom industry, where transformation is more likely to be influenced by centralized leadership and diverse organizational capabilities, both transformational leadership and organizational readiness are crucial for aligning internal efforts with strategic objectives. In such contexts, the integration of Transformational Leadership Theory and Organizational Capacity for Change provides a more holistic perspective, connecting vision, culture, and structural preparedness to enhance the comprehension and facilitation of digital transformation.

Considering the direct and indirect impacts of change leadership on the success of digital transformation and other mediating and controlling variables, this model also inherits frameworks derived from previous studies, as indicated in Figure 1.

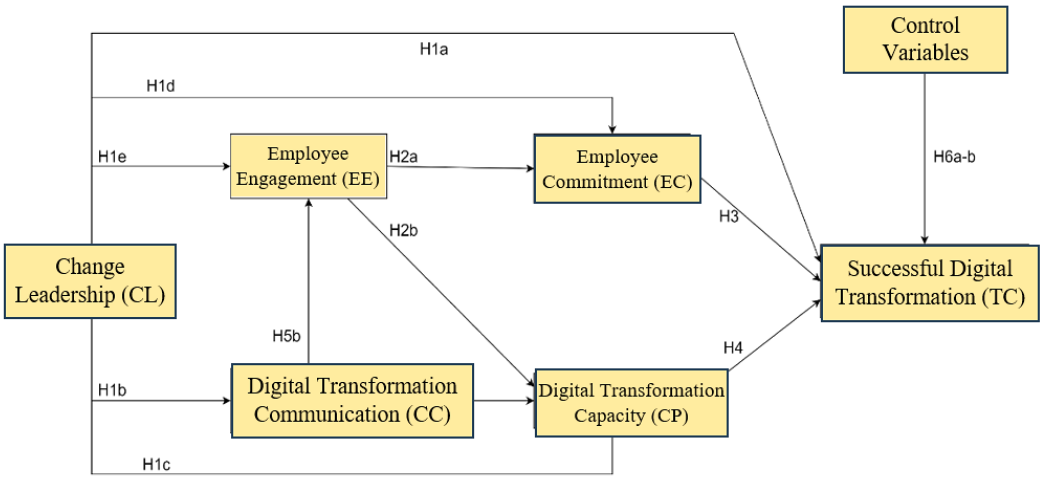

Figure 1. Research model

2.2. Research Model

2.2.1. Hypotheses Related to Change Leadership

Gill [17] emphasized that while change management is crucial for coordinating and executing change initiatives, effective leadership ultimately dictates the success of these programs. Effective leadership is essential for a compelling vision, organizational alignment, and culture that fosters transformation. Gill [17] posited that effective change leadership integrates cognitive, emotional, and behavioral dimensions, enabling leaders to engage and empower employees while skillfully navigating the transformation process. Empirical research indicates that leader-driven change enhances employee commitment and diminishes resistance, both of which are crucial for the successful implementation and sustainability of change initiatives. Change initiatives frequently fail because of ineffective leadership, characterized by inadequate management, absence of vision, and deficient communication [17]. Consequently, change leadership is both an essential element and a significant driver of effective organizational transformation.

Recent empirical studies have reinforced the idea that change leadership has a positive impact on successful change management. Engida et al. [26] indicated that effective change leadership markedly improves employee' readiness for change, thereby improving the seamless execution of transformation programs. Active and prominent leadership sponsorship is essential to the success of change management initiatives. These studies collectively underscore the critical importance of change leadership in facilitating successful organizational changes, especially in sectors undergoing intricate transitions such as telecommunications. Importantly, effective change leadership not only facilitates these extensive transitions but is also vital for successful digital transformation.

H1a: Change leadership has a positive impact on successful digital transformation in telecommunications enterprises

H1b: Change leadership has a positive impact on digital transformation communication.

Klarner et al. [21] contended that proficient change leadership is essential for enhancing an organization's capacity to adjust to fluctuating conditions. They claim that executives who foster a culture of continuous learning and flexibility significantly enhance an organization's capacity for digital transformation. Yasir et al. [20] emphasized that leadership styles significantly influence the potential for digital transformation in businesses, especially within the non-profit sector. Their research indicated that transformational leadership, defined by vision and inspiration, is crucial in augmenting digital transformation capacity by fostering trust among employees and engaging them in the change process. Furthermore, transactional leadership plays a supplementary role by facilitating organized change initiatives through contingent rewards. Non-interventionist laissez-faire leadership diminishes an organization's capability for digital change, thus impacting its preparedness. These studies underscore the essential requirement for proactive and engaged leadership in fostering an environment conducive to digital transformation, thereby augmenting an organization's ability to effectively manage and implement digital transformation initiatives [20, 21].

H1c: Change leadership has a positive impact on telecommunications enterprises' digital transformation capacity.

Armenakis et al. [18] emphasized that effective change leadership fosters readiness for digital transformation, which is a crucial precursor of employee commitment to digital transformation. Change leaders are essential in conveying a persuasive vision, alleviating uncertainty, and emphasizing the importance of digital transformation, thereby fostering an atmosphere that encourages employee dedication to digital transformation. Furthermore, Yasir et al. [20] emphasized that transformational leadership, defined by inspiration, customized consideration, and intellectual stimulation, fosters employee trust and engagement, resulting in an increased commitment to digital transformation initiatives. Moreover, empirical research indicates that leaders who actively endorse and exemplify digital transformation behaviors substantially diminish opposition and foster enduring commitment to digital transformation among employees [27]. Ineffective leadership, characterized by laissez-faire methods, undermines trust and promotes disengagement. These studies underscore that proactive and supportive leadership change is crucial for cultivating employee engagement in digital transformation, thereby facilitating effective digital transformation initiatives [18, 20, 27].

H1d: Change leadership positively impacts employee commitment to digital transformation

Saks [6] emphasized that engaged employees demonstrate elevated levels of commitment, job satisfaction, and discretionary effort, which are directly affected by leadership actions that generate trust, support, and significant work experience. Change leaders are crucial in cultivating an environment of psychological safety and readiness for change, thereby promoting employee engagement by reducing ambiguity and improving role clarity [18, 28]. Transformational leadership is recognized as a crucial predictor of engagement, as leaders inspire, intellectually stimulate, and offer individualized support to foster a workforce that is more emotionally and cognitively committed to organizational goals. Furthermore, empirical evidence demonstrates that perceived organizational support and procedural justice, both influenced by effective leadership, are essential determinants of employee engagement [6]. Without strong leadership, people are likely to become disengaged because of a lack of clarity, support, and motivation. The ability to change leaders to convey a compelling vision, foster participation, and build trust profoundly affects employee engagement, making it crucial for successful organizational transformation.

H1e: Change leadership positively impacts employee engagement in digital transformation

2.2.2. Hypotheses Related to Employee Engagement

Saks [6] asserted that engaged employees demonstrate greater dedication and are more likely to adopt digital transformation. Recent studies corroborate this assertion. For example, research involving oil palm plantation employees indicated that individuals with elevated engagement levels exhibited greater readiness for change, highlighting the critical importance of engagement in promoting adaptability during digital transformation [29]. Furlong & Yeow [12] presented the notion of change engagement, highlighting that employees who are psychologically committed to their work are more inclined to endorse and facilitate change initiatives. These findings indicate that promoting employee involvement is crucial for strengthening commitment to digital transformation, thereby facilitating the successful execution of digital transformation initiatives.

H2a: Employee engagement positively influences employee commitment in digital transformation

Engaged people are indicated by Saks [6], who emphasizes increased commitment, job satisfaction, and discretionary effort, thus enhancing an organization's overall adaptability and responsiveness to change. Mladenova [30] underscores that organizational capacity for change (OCC) is intricately connected to employee preparedness and engagement, as engaged employees exhibit a proactive disposition towards transformation initiatives, thereby diminishing opposition and cultivating a culture of continuous improvement. Furthermore, studies demonstrate that highly engaged employees enhance organizational learning, knowledge sharing, and innovation, which are essential elements of OCC [31, 32]. Organizations that invest in employee engagement initiatives such as clear communication, leadership support, and participative decision-making improve their capacity to effectively navigate complex and uncertain circumstances. Thus, employee engagement serves as a critical enabler of OCC, ensuring that organizations develop the agility and resilience needed to successfully manage ongoing and emergent changes.

H2b: Employee engagement positively influences telecommunications enterprises' capacity for digital transformation.

2.2.3. Hypotheses Related to Employee Commitment to Digital Transformation

Al-Jabari & Ghazzawi [33] asserted that organizational commitment, especially affective and normative commitment, cultivates a culture of trust, resilience, and adaptation, which are crucial for effective digital transformation. Employees exhibiting a strong dedication to corporate values and goals are more likely to embrace digital transformation initiatives and actively contribute to their success. Meyer & Allen's [34] three-component model of commitment-affective, -normative, and -continuance illustrates how emotional attachment, perceived obligation, and organizational investment enhance employees' willingness to support and sustain digital transformation projects. Research demonstrates that committed individuals facilitate smooth transitions during digital transformation by reducing resistance, enhancing collaboration, and maintaining productivity [35]. Moreover, empirical studies demonstrate that companies with high employee commitment experience lower turnover rates and increased involvement throughout digital transformation, leading to more efficient and sustainable transformations [36]. Thus, fostering employee engagement is a strategic need for organizations to achieve enduring success in digital transformation.

H3: Employee commitment to change positively impacts telecommunications enterprises' successful digital transformation

2.2.4. Hypotheses Related to Organizational Capacity for Change

Judge & Douglas [37] identified eight critical dimensions of organizational capacity for digital transformation: trustworthy leadership, trusting followers, capable champions, involved mid-management, systems thinking, communication systems, accountable culture and innovative culture. They found that organizations exhibiting higher levels of these dimensions were more successful in implementing digital transformation initiatives. Helfat et al. [38] introduced the concept of dynamic capabilities, asserting that businesses proficient in integrating and reconfiguring both internal and external competences are better equipped to adapt to rapidly evolving environments, thereby enhancing their ability to execute digital transformation effectively. Mladenova [30] explored the relationship between organizational capacity for digital transformation and preparedness for such transformation, noting that, while these concepts are distinct, they complement each other and are crucial for navigating the challenges of uncertain digital landscapes. Together, these studies highlight that an organization's capacity for digital transformation, encompassing leadership, culture, and dynamic capabilities, is essential for ensuring successful digital transformation and sustaining organizational success.

H4: Capacity for digital transformation positively impacts on telecommunications enterprises' successful digital transformation

2.2.5. Hypotheses Related to Digital Transformation Communication

Kotter & Cohen [39] assert that excellent communication is essential for successful digital transformation since it emotionally engages people and promotes alignment with digital transformation activities. Clear and well-structured communication reduces resistance, fosters collaboration, and increases decision-making, reinforcing an organization's ability to undergo digital transformation. Judge & Douglas [37] characterized communication systems as a crucial element of organizational capacity for digital transformation, highlighting that transparency and information flow are vital enablers of adaptability and robustness. Recent studies demonstrate that organizations employing effective digital transformation communication strategies achieve heightened employee trust, reduced uncertainty, and enhanced strategic alignment, thereby promoting greater organizational agility and enduring success in digital transformation [30]. These findings unequivocally demonstrate that effective communication is not just a facilitator of digital transformation, but also an essential catalyst for an organization's capacity to oversee and sustain digital transformation activities.

H5a: Communication for digital transformation positively impacts telecommunications enterprises' capacity for digital transformation.

Effective communication fosters transparency, reduces uncertainty, and aligns individuals with organizational objectives, thereby enhancing employee engagement in digital transformation. Clearly articulated communication methods improve knowledge sharing and decision-making, fostering a workplace where people feel valued and motivated to participate in digital transformation efforts. Saks [6] asserted that communication is essential for employee engagement, as employees who perceive transparency and honesty in communication are more likely to demonstrate greater job involvement and organizational commitment. Effective workplace communication acts as a catalyst for employee engagement, ensuring that employees are informed and included in digital transformation. Welch's research [40] illustrates that engaged employees are defined by their receipt of timely, relevant, and reciprocal information, facilitating their active involvement in digital transformation initiatives. These studies collectively highlight that strategic communication during digital transformation fosters belonging, trust, and active participation, enhances employee engagement, and ensures the success of digital transformation programs.

H5b: Communication for digital transformation positively impacts employee engagement

2.2.6. Control Variables

Al-Haddad & Kotnour [41] emphasized that longer-duration digital transformation projects often face greater challenges in maintaining momentum, employee engagement, and alignment with evolving organizational goals, thereby increasing the risk of failure. Conversely, shorter-duration projects tend to be more agile, facilitating rapid feedback loops and modifications and thereby enhancing success rates. Nonetheless, short-term programs may lack the profound transformation necessary to endure the digital transformation. The magnitude of a digital transformation initiative profoundly affects its success. Extensive transformations, such as organization-wide system implementation, necessitate thorough planning, robust leadership commitment, and elaborate communication tactics to alleviate opposition and maintain participation [42]. Studies demonstrate that firms employing well-defined digital transformation models such as the ADKAR framework are more adept at managing extensive change by guaranteeing coherence across leadership, employees, and operational processes [42]. By contrast, smaller-scale digital transformation programs typically gain from a concentrated approach, fewer stakeholders, and diminished resistance, facilitating a more seamless transition and an increased likelihood of success [37]. The findings highlight the necessity for companies to customize their digital transformation strategies according to project duration and scale, providing suitable leadership, resource allocation, and engagement methods to improve the probability of successful implementation.

H6a;b:There are differences in the successful digital transformation based on (a) the duration of project implementation and (b) project scale.

3. Research Method

This study employs a quantitative research methodology to investigate the impact of change in leadership on the successful digital transformation of telecommunications enterprises. The research adheres to a systematic approach encompassing problem identification, formulation of research questions, extensive literature evaluation, hypothesis generation, and creation of the research framework. A flowchart delineating the principal stages of the process is presented in Figure 2 to facilitate comprehension of the involved steps. This visual representation illustrates the logical sequence from problem characterization to the investigation and reporting of findings, directing the study from the origin to the final conclusions.

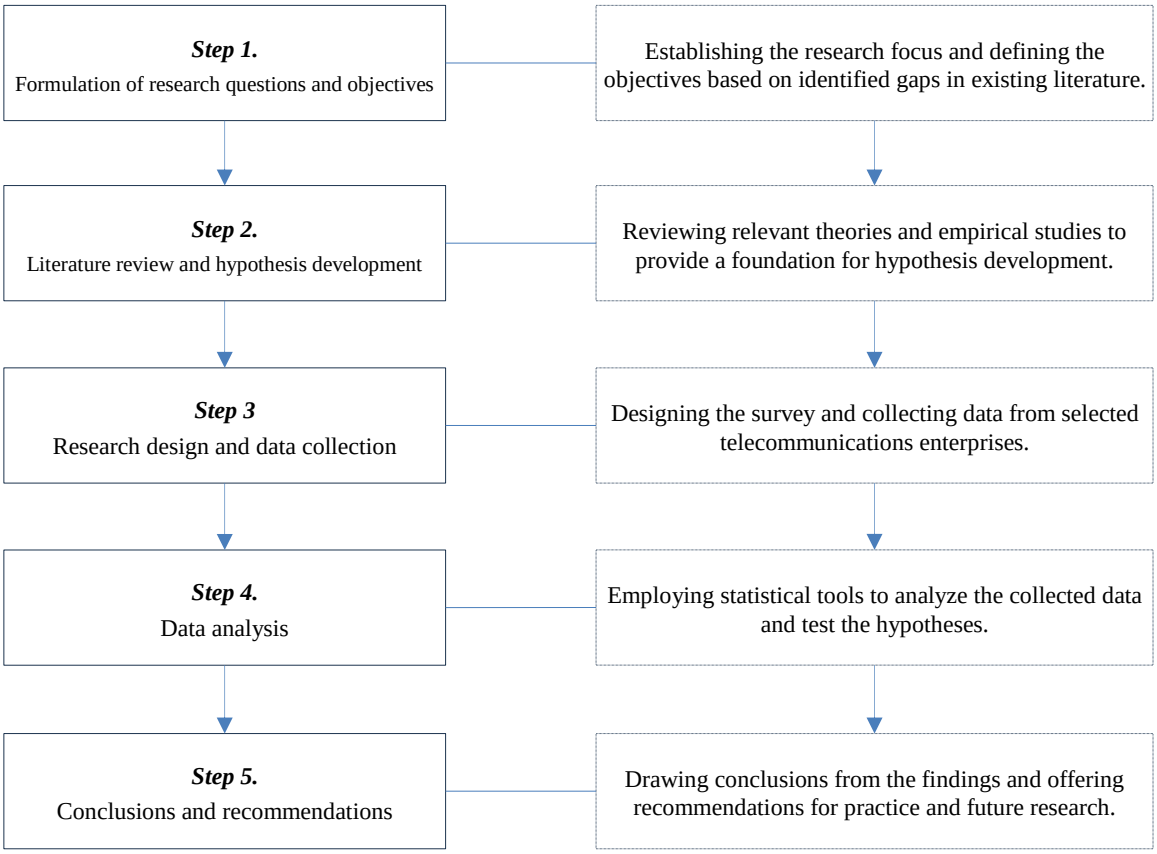

Figure 2. Key stages of the methodology

3.1. Proposed Scales for Model Constructs

In this study, the scale for change leadership consists of five criteria adapted from Gill [17] and Pregmark [43]. The scale for digital transformation communication is based on Elving [22] and Pregmark [43], and includes three criteria. Employee commitment to digital transformation was measured using four observed variables derived from Armenakis et al. [18]. The employee engagement scale was inherited from the model of Saks [6] and was measured using four observed variables. The organizational capacity for the digital transformation scale was based on the model of Klarner et al. [21]. Finally, the scale for digital transformation success was adapted from Al-Haddad & Kotnour [41], and Fitzgerald et al. [16]. Details are presented in Table 1.

Table 1. Constructs in the research model

Construct	Number of Items	Adapted from
Change Leadership (CL)	5	Pregmark (2022) [43]; Gill (2002) [17]
Digital Transformation Communication	3	Pregmark (2022) [43]; Elving (2005) [22]; Musheke & Phiri (2021) [44]
Employee Commitment	4	Armenakis et al. (1993) [18]
Employee Engagement	4	Saks (2006) [6]; Saks & Gruman (2020) [45]
Digital Transformation Capacity	7	Klarner et al. (2007) [21]; Mingaleva & Shironina (2021) [46]
Successful Digital Transformation	8	Liere-Netheler et al. (2018) [47]; Fitzgerald et al. (2014) [16]; Al-Haddad & Kotnour (2015) [41]

3.2. Research Sample

The research sample comprised projects conducted across all telecommunications enterprises in Vietnam. A convenience sampling method, which falls under non-probability sampling techniques, was employed to ensure optimal research outcomes, while maintaining the representativeness of the sample. Specifically, this study focuses on leading telecommunications enterprises in Vietnam, as identified in the White Paper of the Ministry of Information and Communications of Vietnam, including VNPT, Viettel, MobiFone, FPT, CMC, Vietnam Mobile, and iTel.

According to Hair et al. [48], the minimum required sample size should be at least five times the number of observed variables. The ’research model proposed in this study had 31 observed variables (excluding statistical variables), necessitating a minimum sample size of 155, calculated as 31 × 5. The final valid sample size for this study was 255, which was sufficient for analysis using the Structural Equation Modeling (SEM) method.

The official survey questionnaire (see Appendix I) was designed based on the established measurement scales and consisted of two main sections. Section 1 comprises 31 questions organized into six categories aligned with the six principal components of the study methodology. Section 2 consists of ten inquiries pertaining to respondents' demographic information, organizational specifics, and further pertinent enterprise-related data. This section includes survey questions designed to classify digital transformation initiatives according to their attributes.

3.3. Data Collection

Given that major telecommunications companies generally maintain operations in all 63 provinces of Vietnam and abroad, the survey was executed using both direct (offline) and online methodologies to guarantee extensive outreach and varied replies. To improve data accuracy and dependability, control measures were instituted, including duplicate questions accompanied by reminders for respondents to offer consistent replies, thereby eliminating inattentive or random responses. Each duplicate question was intentionally included twice in the poll to reduce response bias and guarantee uniformity. The poll included screening questions to confirm that the respondents were managers or key persons responsible for executing digital transformation projects in their firms, thereby ensuring the participation of qualified and pertinent individuals. Methodological considerations bolstered the validity and reliability of the research, guaranteeing that only high-quality and significant replies informed the final dataset, thereby augmenting the general credibility and robustness of the study.

The direct survey was conducted using a network-based approach, in which survey questionnaires were distributed to selected respondents through professional connections. For the offline (in-person) method, printed questionnaires were distributed to participants at their workplaces or during business networking events. Participants were briefed on the purpose of the research, the voluntary nature of participation, and their right to confidentiality and withdrawal at any point. The online survey was conducted through a data collection agreement with VIRAC (ViracResearch.com), a market research firm specializing in the industry. The survey primarily targeted respondents from Hanoi, Da Nang, and Ho Chi Minh City, leveraging the VIRAC's network of telecommunications professionals. The questionnaire was administered through Google Forms and the link was disseminated via email and professional networks. The initial page of the online survey featured a comprehensive information sheet delineating the study's objective, voluntary aspect of participation, confidentiality guarantees, and a consent statement that participants were required to accept before proceeding. The participants were managers tasked with executing digital transformation initiatives at telecommunication companies during the research period, guaranteeing that the gathered data were pertinent to the industry and reflective of the digital transformation management domain. This study included human volunteers; hence, ethical considerations were rigorously adhered to and participation was voluntary. Data were collected and stored in compliance with data protection regulations.

The survey questionnaires were distributed to managers and/or leaders, project management team members, and executives responsible for digital transformation projects within telecommunication enterprises. This included corporate leaders at parent companies and direct leaders of subsidiary units who oversaw transformation initiatives. A total of 325 questionnaires were distributed, yielding 276 responses, resulting in a response rate of 84.9%. To guarantee response accuracy, control questions were employed by reiterating certain inquiries twice throughout the survey to evaluate the respondents' attentiveness. These control questions facilitated elimination of random and inattentive responses. Following filtration of the gathered responses, 255 valid questionnaires (92.4%) were preserved for quantitative analysis.

Finally, after conducting a quantitative analysis based on the collected survey data, the author conducted an additional semi-structured in-depth interview with five management-level respondents from telecommunication enterprises. This step aimed to gain deeper insight and validate the findings, ensuring a more comprehensive interpretation of the research results.

3.4. Data Analysis

This study utilized statistical approaches and Structural Equation Modeling (SEM), facilitated by SPSS and AMOS software, to solve the research issues. The data analysis procedure comprises four essential stages: (i) descriptive statistics that encapsulate the dataset's characteristics, offering an overview of sample demographics and project attributes; (ii) reliability testing employing Cronbach's alpha and item-total correlation, which evaluate the internal consistency and reliability of measurement scales; (iii) Confirmatory Factor Analysis (CFA), which scrutinizes the theoretical framework of the measurement model, assessing its model fit, convergent validity, and discriminant validity; and (iv) Structural Equation Modeling (SEM), which investigates the interrelations among variables, tests research hypotheses, and evaluates the model's structural validity and overall robustness. The study employs analytical steps to rigorously validate the research model, providing empirical insights into the influence of change in leadership, communication, employee engagement, and organizational capability on the effectiveness of digital transformation in the telecom sector.

4. Research Results

4.1. Descriptive Statistics of the Research Sample

Table 2 lists the attributes of the surveyed projects and respondents. The surveyed enterprises' distribution comprised 37.3% VNPT, 28.6% Viettel, 24.7% MobiFone, 4.7% FPT (Telecom), 3.1% CMC (Telecom), and 1.6% other telecommunications companies, including Vietnam Mobile and iTel.

In terms of project scale, 7.8% of the surveyed projects were classified as small (minor departmental adjustments), 53.3% as medium (modifications affecting multiple units within the organization), 28.6% as large (enterprise-wide transformations), and 10.2% as Very Large (substantial transformations requiring changes across partner organizations). Regarding implementation length, 12.2% of projects were classified as short-term (under 3 months), 38.4% as medium-term (3 months to 1 year), and 49.4% as long-term (over 1 year).

From a demographic perspective, 69.4% of the respondents were male, and 30.6% were female. The age breakdown was as follows: 3.1% were under 25 years, 19.2% were aged 25–35 years, 43.5% were between 35 and 45 years, and 34.1% were over 45 years. Regarding educational credentials, 23.2% had a master's degree or above (including 0.4% with a doctoral or postdoctoral degree), 73.3% held a bachelor's or engineering degree, and 3.5% had alternative educational qualifications. Regarding job experience, 5.1% of respondents had fewer than three years at their organization, 6.38% had three to five years, 15.31% had five to ten years, and 73.21% had over 10 years of experience. In digital transformation initiatives, 3.1% of respondents held the position of project leader, 65.5% were project managers, and 31.4% were part of the project management team.

Table 2. Descriptive statistics of surveyed projects and respondents

Category	Subcategory	Frequency (n)	Percentage (%)
Enterprise	VNPT	95	37.3
	Viettel	73	28.6
	MobiFone	63	24.7
	FPT	12	4.7
	CMC	8	3.1
	Others	4	1.6
Project Scale	Small	20	7.8
	Medium	136	53.3
	Large	73	28.6
	Very Large	26	10.2
Implementation duration	Short (less than 3 months)	31	12.2
	Medium (3 months to 1 year)	98	38.4
	Long (more than 1 year)	126	49.4
Gender	Male	177	69.4
	Female	78	30.6
Age	Under 25	8	3.1
	25 to under 35	49	19.2
	35 to under 45	111	43.5
	Above 45	87	34.1
Work experience	Less than 3 years	13	5.1
	3-5 years	16	6.3
	More than 5 years -10 years	64	25.1
	More than 10 years	162	63.5
Education Level	Vocational Training	9	3.5
	Bachelor's Degree	187	73.3
	Master's Degree	58	22.8
	Doctorate	1	0.4
Role in digital transformation projects	Project Leader	8	3.1
	Project Manager	167	65.5
	Project Team Member	80	31.4

4.2. Results of Measurement Scale Validation

4.2.1. Results of Reliability Testing of Measurement Scales Using Cronbach's Alpha and Item-Total Correlation

The results of the reliability testing for the measurement scales using Cronbach's alpha and item-total correlation are presented in Table 3. The initial reliability test indicated that all measurement scales had Cronbach's alpha values above 0.7, specifically ranging between 0.774 and 0.927, which falls within the acceptable reliability threshold proposed by Nunnally & Bernstein [49]. The measurement scales for Change Leadership (CL), Employee Engagement (EE), Digital Transformation Communication (CC), Employee Commitment to Digital Transformation (CM), Enterprise Capacity for Digital Transformation (CP), and Successful Digital Transformation in Telecommunications Enterprises under Digital Transformation (TC) demonstrated item-total correlation values above 0.581, significantly exceeding the acceptable threshold of 0.3. Therefore, these scales were deemed to be reliable. Subsequently, these variables proceeded to the next stage of analysis using Exploratory Factor Analysis (EFA) to further validate their construct reliability and dimensionality.

Table 3. Cronbach's alpha and item-total correlation

Observed Variable	Mean if Item Deleted	Variance if Item Deleted	Item-Total Correlation	Cronbach's Alpha if Item Deleted
I. Change Leadership (CL):			**Cronback's Alpha**	**0.849**
CL1	13.78	8.426	0.678	0.813
CL2	13.09	7.481	0.645	0.829
CL3	13.79	8.561	0.665	0.817
CL4	13.74	8.358	0.695	0.808
CL5	13.83	8.742	0.640	0.823
II. Employee Engagement (EE):			**Cronback's Alpha**	**0.828**
EE1	10.55	4.280	0.635	0.792
EE2	9.79	4.134	0.684	0.770
EE3	9.72	4.101	0.701	0.762
EE4	9.35	4.363	0.600	0.808
III. Digital Transformation Communication (CC):			**Cronback's Alpha**	**0.774**
CC1	7.26	2.295	0.616	0.694
CC2	6.65	1.953	0.581	0.742
CC3	7.27	2.165	0.648	0.657
IV. Employee Commitment (CM):			**Cronback's Alpha**	**0.825**
CM1	9.27	4.600	0.657	0.777
CM2	9.30	4.755	0.621	0.793
CM3	10.11	4.148	0.685	0.765
CM4	9.29	4.600	0.643	0.783
V. Digital Transformation Capacity (CP):			**Cronback's Alpha**	**0.907**
CP1	20.89	17.487	0.738	0.892
CP2	20.87	17.943	0.720	0.894
CP3	20.85	17.726	0.710	0.895
CP4	21.29	17.561	0.737	0.892
CP5	21.34	17.854	0.716	0.894
CP6	20.89	17.177	0.792	0.886
CP7	22.21	16.693	0.672	0.902
VI. Successful Digital Transformation (TC):			**Cronback's Alpha**	**0.927**
TC1	23.35	21.891	0.695	0.921
TC2	23.42	21.425	0.766	0.916
TC3	23.38	21.088	0.806	0.913
TC4	23.44	21.176	0.817	0.912
TC5	23.50	21.306	0.714	0.920
TC6	23.51	21.172	0.708	0.921
TC7	23.33	21.514	0.712	0.920
TC8	23.42	21.237	0.792	0.914

4.2.2. Results of Measurement Scale Validation Using Confirmatory Factor Analysis (CFA)

The measurement scales were further validated using a Confirmatory Factor Analysis (CFA) (Figure 3).

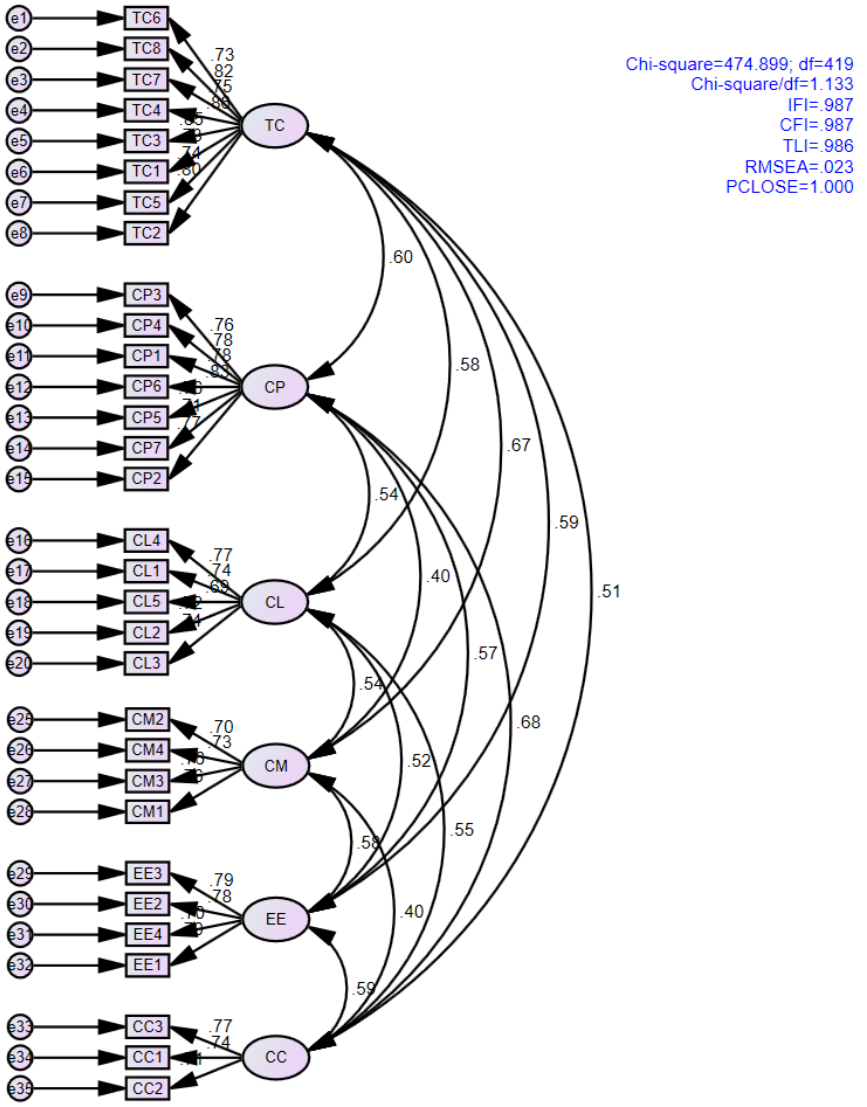

Figure 3. CFA Analysis of Measurement Scales

At this stage, the scales underwent CFA before conducting the saturated model analysis. All the measurement scales in the research model were unidimensional. After adjustments (Figure 3), the CFA results indicated that the model fit indices met the recommended thresholds: chi-square/df = 1.133 (< 3), IFI = 0.987, CFI = 0.987, TLI = 0.986 (all > 0.9), RMSEA = 0.023 (< 0.08), and PCLOSE = 1.000 (> 0.05). These results confirm that the model exhibits a good fit with the survey data, aligning with the criteria proposed by Hu & Bentler [50]. Additionally, all factor loadings were greater than 0.5, confirming the convergent validity of the measurement scale. Furthermore, the correlation coefficients between the three constructs in the model were below 0.9, supporting the discriminant validity among the latent variables. These findings validate the structural integrity and measurement reliability of the research model and ensure its suitability for further analysis.

4.2.3. Results of Measurement Scale Validation Using the Saturated Model

A Confirmatory Factor Analysis (CFA) of the Saturated Model was conducted to assess the discriminant validity of all research constructs (observed variables) in this study. Figure 3 presents the results of CFA validation. The standardized measurement model had 419 degrees of freedom (df = 419), with a chi-square value of 474.899 and p-value of 0.000.

Additionally, the model fit indices confirmed that the theoretical model aligned well with the survey data, as all indicators met the recommended thresholds: Chi-square/df = 1.133 (< 3), IFI = 0.987, CFI = 0.987, TLI = 0.986 (all > 0.9), and RMSEA = 0.023 (< 0.08). These results indicate that the measurement model is robust, demonstrating strong

discriminant validity and statistical reliability, thus ensuring its suitability for further hypothesis testing and structural modeling.

The CFA results presented in Table 4 further confirm that all the observed variables are statistically significant within the model, as their p-values are all below 0.05. Additionally, all observed variables had standardized factor loadings (Standardized Regression Weights) greater than 0.5, indicating high construct reliability and a strong level of model fit [48]. These findings validate the convergent validity of the measurement scales, ensuring their suitability for further structural analysis.

Table 4. Reliability and convergent validity testing results of measurement scales

			Estimate				Estimate				Estimate
TC6	←	TC	0.734	CP6	←	CP	0.825	CM3	←	CM	0.760
TC8	←	TC	0.819	CP5	←	CP	0.760	CM1	←	CM	0.762
TC7	←	TC	0.746	CP7	←	CP	0.706	EE3	←	EE	0.786
TC4	←	TC	0.860	CP2	←	CP	0.775	EE2	←	EE	0.784
TC3	←	TC	0.846	CL4	←	CL	0.775	EE4	←	EE	0.696
TC1	←	TC	0.732	CL1	←	CL	0.738	EE1	←	EE	0.698
TC5	←	TC	0.739	CL5	←	CL	0.694	CC3	←	CC	0.767
TC2	←	TC	0.798	CL2	←	CL	0.718	CC1	←	CC	0.737
CP3	←	CP	0.757	CL3	←	CL	0.744	CC2	←	CC	0.710
CP4	←	CP	0.777	CM2	←	CM	0.696				
CP1	←	CP	0.784	CM4	←	CM	0.728				

Based on the CFA output, Composite Reliability (CR) and Average Variance Extracted (AVE) indices were calculated. The results indicate that all measurement scales meet the required validity thresholds, with CR values exceeding 0.7 and AVE values greater than 0.5. Specifically, the lowest CR value recorded was 0.782, whereas the lowest AVE value was 0.539, both of which satisfied the recommended reliability and convergent validity criteria. Therefore, the measurement scales in the model were confirmed to possess adequate reliability and convergent validity, ensuring their suitability for further structural analyses (Table 5).

Table 5. Correlation Matrix, Composite Reliability, and Discriminant Validity Indices

	CR	AVE	MSV	MaxR(H)	EE	TC	CP	CL	CM	CC
EE	0.830	0.551	0.353	0.836	**0.742**					
TC	0.928	0.618	0.448	0.933	0.591	**0.786**				
CP	0.910	0.593	0.468	0.913	0.575	0.603	**0.770**			
CL	0.854	0.539	0.336	0.856	0.519	0.580	0.540	**0.734**		
CM	0.826	0.543	0.448	0.828	0.584	0.669	0.404	0.536	**0.737**	
CC	0.782	0.545	0.468	0.784	0.594	0.505	0.684	0.546	0.397	**0.738**

Thus, through various validation steps, the measurement scales used to assess the constructs in this study met the criteria for reliability, unidimensionality, convergent validity, and discriminant validity. Consequently, these validated measurement scales will be utilized in the subsequent stages of model testing and hypothesis verification.

4.3. Results of Research Model Testing

Figure 4 shows the SEM validation results for the research model. Structural Equation Modeling (SEM) analysis indicated that the model had 544 degrees of freedom (df = 544), with a chi-square value of 476.948 and P = 0.000. The model fit indices further confirmed the adequacy of the model: chi-square/df = 1.128 (< 3), IFI = 0.988, CFI = 0.987, TLI = 0.986 (all > 0.9), and RMSEA = 0.022 (< 0.08). Given these results, it can be concluded that the research model exhibited a strong fit with the survey data, supporting its suitability for hypothesis testing and further analysis.

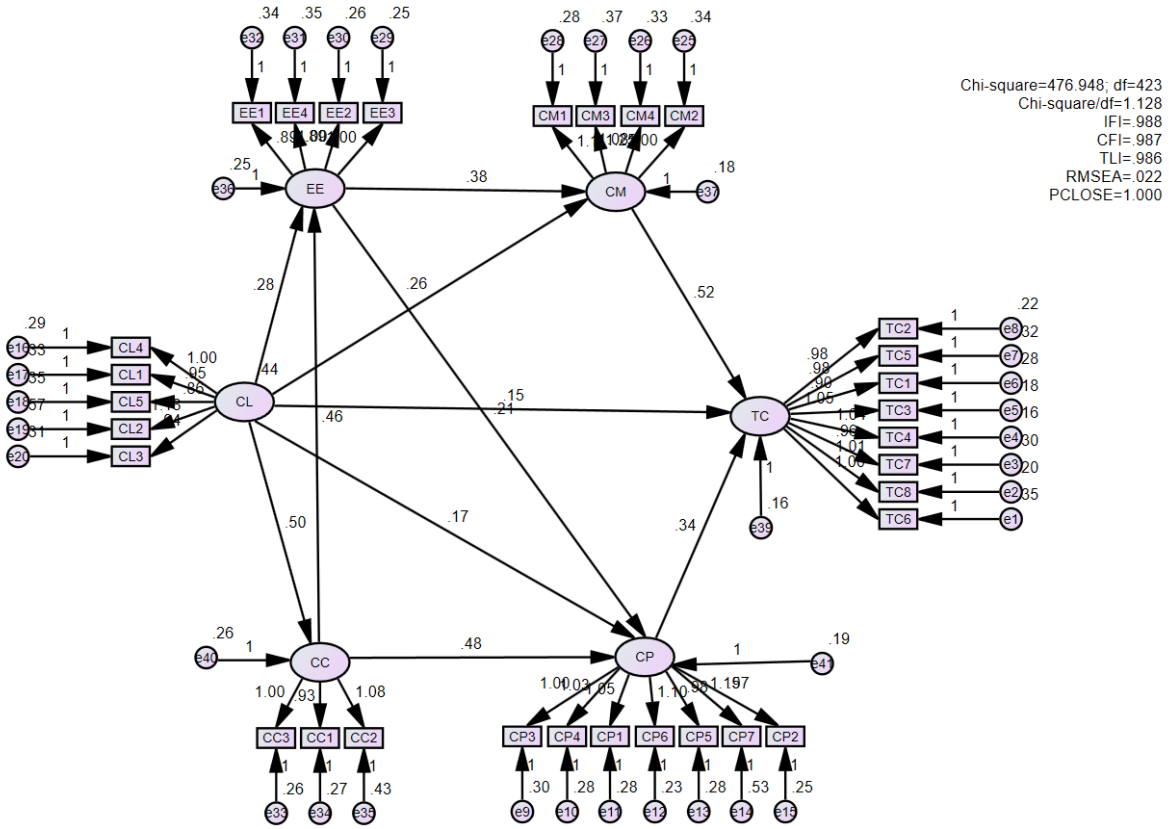

Figure 4. Standardized structural equation modeling (SEM) analysis results

4.3.1. Results of Hypothesis Testing

The results indicate that all 11 main hypotheses concerning the relationships among core variables (excluding control variables) were statistically supported, with p-values < 0.05, confirming that the survey data support all the proposed relationships. The standardized regression weights for the tested hypotheses are presented in Figure 4, and Table 6 provides detailed hypothesis testing results. As all relationships exhibited p-values below 0.05, they were considered statistically significant, validating the proposed model and supporting the research framework.

Additionally, as presented in Table 7, all relationships exhibit standardized regression coefficients (β) greater than zero, further confirming that all hypotheses are supported. Moreover, the standardized regression coefficients indicate the relative strength of the impact of the independent variables on the dependent variables, with higher coefficients reflecting stronger effects. These findings provide empirical validation of the proposed relationships within the research model.

Table 6. Results of Hypothesis Testing (Unstandardized Regression Coefficients)

			Estimate	S.E.	C.R.	P	Label
CC	←	CL	0.504	0.073	6.894	***	
EE	←	CL	0.276	0.081	3.414	***	
EE	←	CC	0.460	0.095	4.852	***	
CM	←	CL	0.265	0.069	3.832	***	
CP	←	CL	0.170	0.071	2.401	0.016	
CM	←	EE	0.376	0.074	5.061	***	
CP	←	EE	0.207	0.078	2.650	0.008	
CP	←	CC	0.482	0.095	5.083	***	
TC	←	CL	0.150	0.068	2.219	0.026	
TC	←	CM	0.518	0.086	6.054	***	
TC	←	CP	0.338	0.066	5.136	***	

Table 7. Results of hypothesis testing with standardized regression weights

Hypothesis				Estimate					Estimate
H1b	CC	←	CL	0.545	H2b	CP	←	EE	0.210
H1e	EE	←	CL	0.283	H5a	CP	←	CC	0.464
H5b	EE	←	CC	0.436	H1a	TC	←	CL	0.155
H1d	CM	←	CL	0.310	H3	TC	←	CM	0.456
H1c	CP	←	CL	0.177	H4	TC	←	CP	0.335
H2a	CM	←	EE	0.430	-			-	

4.3.2. Results of Control Variable Testing

This study examined the influence of two control variables related to digital transformation project characteristics: (i) Project Scale and (ii) Project Implementation Duration. A one-way ANOVA was conducted to assess the effects of these control variables.

The ANOVA results for the project scale indicated that Levene's test for equality of variances yielded a significance value of 0.009 ($p < 0.05$), and Welch's test resulted in a significance value of 0.030 ($p < 0.05$). These findings suggest that projects of different scales significantly influence the success of digital transformation initiatives, confirming the impact of project scale as a control variable in this study (Figure 5).

The findings indicate that medium-scale projects (those involving changes across multiple business units) achieve better outcomes than both small-scale and large-scale projects. The post hoc Bonferroni test revealed a statistically significant difference between Very Large and Medium-scale projects, with a Bonferroni's test significance value of 0.004 (< 0.05), confirming that the project scale significantly influences digital transformation success.

Similarly, the ANOVA results for project implementation duration showed that Levene's test yielded a significance value of 0.507 (> 0.05), confirming variance homogeneity, while F's test produced a significance value of 0.026 (< 0.05), indicating that implementation duration significantly impacts project success (Figure 6). Specifically, medium-duration projects (three months to one year) performed the best, followed by short-term projects (less than three months), with long-term projects (over one year) showing slightly lower success rates. The post-hoc Bonferroni test further confirmed a statistically significant difference between long-term and medium-duration projects, with a significance value of 0.031 (< 0.05). These findings highlight the importance of project scale and implementation duration in determining the effectiveness of digital transformation initiatives.

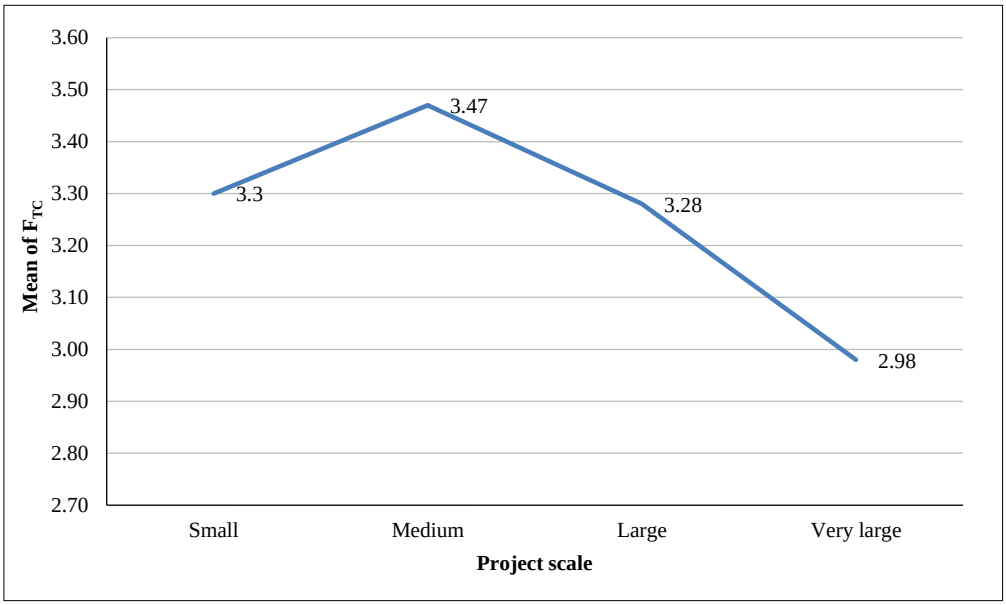

Figure 5. Project scale and digital transformation management success

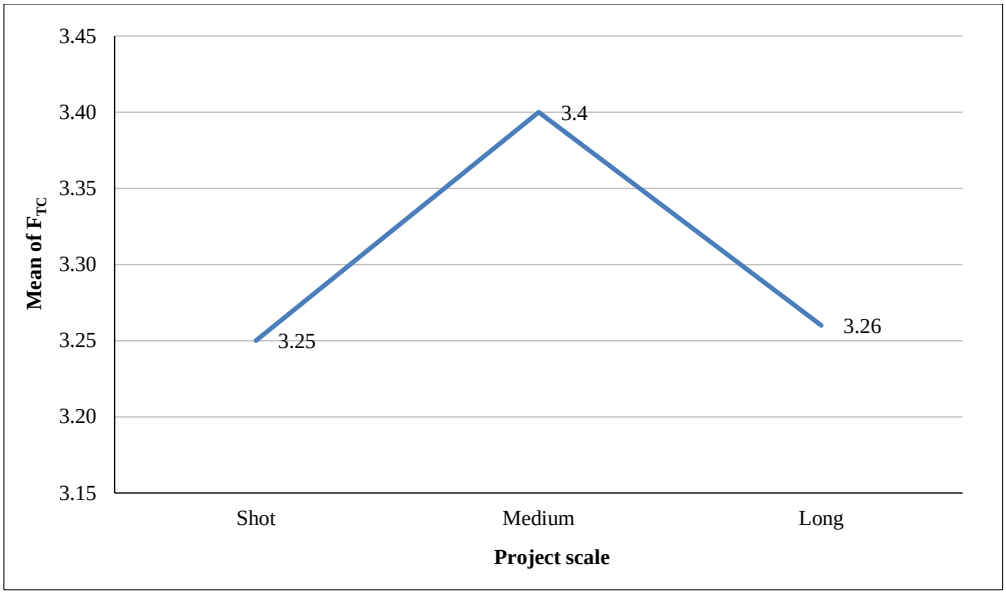

Figure 6. Differences in implementation duration and digital transformation success

4.3.3. Evaluation of Direct and Indirect Effects of Factors on the Success of Digital Transformation in Telecommunications Enterprises

AMOS software (version 20.0) was used to conduct tests on the direct, indirect, and total effects of the variables. The results of these tests are listed in Table 8.

Table 8. Direct and indirect effects between factors

		CL	CC	EE	CM	CP
CC	Direct effect	0.545	0	0	0	0
	Indirect effect	0	0	0	0	0
	Total effect	0.545	0	0	0	0
EE	Direct effect	0.283	0.436	0	0	0
	Indirect effect	0.238	0	0	0	0
	Total effect	0.521	0.436	0	0	0
CM	Direct effect	0.310	0	0.430	0	0
	Indirect effect	0.224	0.188	0	0	0
	Total effect	0.534	0.188	0.430	0	0
CP	Direct effect	0.177	0.464	0.210	0	0
	Indirect effect	0.362	0.092	0	0	0
	Total effect	0.539	0.556	0.210	0	0
TC	Direct effect	0.155	0	0	**0.456**	0.335
	Indirect effect	**0.424**	0.272	0.266	0	0
	Total effect	**0.580**	0.272	0.266	0.456	0.335
	% Total Effect	30.38	14.25	13.93	23.89	17.55

The results indicate that the factors that Change Leadership (CL), Employee Commitment to Digital transformation (CM), and Capacity for Digital transformation (CP) have a direct impact on the Success of Digital transformation (TC) in telecommunications enterprises.

The findings indicate that change leadership significantly influences the performance of digital transformation in Vietnamese telecom enterprises, with a total effect of 30.38% (estimate = 0.580). Change leadership emerged as the most significant direct factor influencing the effectiveness of digital transformation, confirming that effective transformation is predominantly propelled by leaders' actions. The survey results and interviews consistently emphasized the leadership's ability to empower employees, provide a clear vision, and align organizational objectives with individual aspirations. A senior executive from Viettel stated: *"Digital transformation only took shape when top leaders showed commitment, explained clearly why we were doing it, and were personally involved, not just issuing*

directives." This underscores the necessity of leaders' active involvement in steering the transformation process and aligning staff members with change objectives. This statement underscores the significance of leadership in fostering a culture of commitment and guiding employees through the intricacies of transformation.

Employee engagement in digital transformation had a total impact of 23.89% (estimate = 0.456), making it the second-most significant factor. This study revealed that business communication and leadership behaviors shape employee commitment. A mid-level manager from VNPT stated: *"Commitment can't be forced. It only happens when people truly believe that the transformation matters—not just for the company, but for their own growth."* This statement emphasizes that leadership's function in communicating the significance of transformation, both for the organization and for employees' personal development, directly affects commitment to the change process.

The significance of digital transformation communication in facilitating transformation success was notable, with an indirect impact of 14.25%. Effective communication mitigates uncertainty and fosters trust among employees. A human resources official from Viettel emphasized: *"For years, communication meant top-down emails or monthly briefings. Now, we're learning to create space for real conversations - where employees can ask, challenge, and suggest. That shift doesn't happen overnight, but it's necessary."* This idea emphasizes the significance of transparent communication in cultivating participation, trust, and, ultimately, a successful change process.

Furthermore, the organizational capacity for digital transformation was identified as a pivotal component, with a total impact of 17.55% (estimate = 0.335). The research indicates that organizational capability, particularly in terms of learning and adaptation, is crucial for effective change management. A transformation team leader from Viettel conveyed: *"People used to be afraid to fail, especially when everything was evaluated quarterly. But in digital transformation, we had to change that mindset. We started small pilot projects, accepted that some things wouldn't work, and treated mistakes as learning. That's when things really began to change."* This comment reflects the importance of fostering a culture of learning and experimentation, which are critical elements in driving successful digital transformation.

Several enterprises have successfully applied key leadership principles such as change leadership and employee engagement to drive their digital transformation initiatives. VNPT stands out as a prime example of such success. The company's leadership made significant strides in aligning its organizational vision with digital transformation goals. Top leaders communicated a clear vision for the future, explaining the benefits of the transformation to both the organization and employees. This transparent communication approach helped overcome the initial resistance and ensured that employees at all levels were included in the process. The VNPT also implemented comprehensive training programs and created a culture of learning, empowering employees to take ownership of the transformation. For instance, the company union introduced VNPT's digital competency criteria, encouraging employees to embrace digital skills and reward them for their contributions. Consequently, the company achieved significant milestones, including enhancing customer satisfaction and launching innovative digital products, which positioned VNPT as a leader in Vietnam's high-tech industry. Leadership' commitment, coupled with an empowered workforce, played a critical role in transforming VNPT into a flexible and innovative organization, aligning with the principles outlined in this study.

5. Discussion

This study underscores the critical role of change leadership in facilitating effective digital transformation of Vietnamese mobile carriers. The paramount factor in the success of transformation is change leadership, which underscores essential leadership traits, such as clear vision articulation, encouragement of creativity, and the alignment of organizational objectives with employee engagement. This outcome corroborates the assertions of Gill [17] and Armenakis et al. [18], who emphasize that motivating personnel and preparing the organization for transformation relies on effective leadership. The results align with those of McCarthy et al. [51], who assert that successful navigation of transitions in difficult environments relies on essential digital leadership attributes such as strategists, culturalists, and organizational agilists. In Vietnam's telecommunications sector, where centralized decision-making and hierarchical structures prevail, the active engagement of leaders is crucial for surmounting resistance and aligning efforts towards reform objectives. Through the challenges of digital transformation and ensuring successful technological advances, leading organizations rely on these leadership qualities.

The findings also point to the significant role of employee commitment to digital transformation in the success of transformation. The results suggest that employees' emotional connections to the transformation process, driven by 'clear communication and organizational support, play a key role in ensuring successful change adoption. In line with Saks [6] and Yasir et al. [20], this study found that engaged and committed employees were more likely to contribute to transformation initiatives, particularly in the face of uncertainty and resistance to change. This supports the argument made by Engida et al. [26], who found that change leadership indirectly shapes readiness for change through organizational culture, further reinforcing the interplay between leadership and internal alignment in transformation efforts. In Vietnam, where organizational culture is often characterized by top-down communication and formal structures, fostering employee commitment is critical for bridging the gap between leadership directives and actual employee involvement in transformation processes.

Digital transformation communication was identified as another essential factor, albeit with a more indirect impact than leadership and employee commitment. Effective communication ensures transparency, reduces uncertainty, and helps align employees with organizational goals. Elving [22] stressed that communication is crucial not only for disseminating information but also for building trust and involving employees in the change process. The results suggest that, in Vietnamese telecommunications, a shift from traditional top-down communication to more inclusive and interactive communication methods is necessary to enhance engagement and commitment. However, given the relatively slow pace of this transition in Vietnam's hierarchical business culture, organizations may face challenges in fully embracing two-way communication models that foster active employee participation.

The role of organizational capacity in digital transformation has also emerged as a critical enabler. The study found that organizations with strong learning capabilities and a culture of adaptability are better positioned to manage digital transformation. This finding aligns with that of Supriharyanti & Sukoco [25], who argued that knowledge sharing and continuous learning are key enablers of digital transformation success. It also complements AlNuaimi et al. [52], who show that organizational agility and leadership capabilities work in tandem to enhance digital outcomes, with agility acting as a bridge between leadership vision and effective implementation. In the context of Vietnamese telecommunications, where many companies are still adjusting to the pace of technological change, the ability to learn from failure and continuously adapt is vital. In this environment, building a culture that supports innovation and experimentation can significantly enhance organizational capacity for digital transformation, which is essential for overcoming the barriers posed by rapid technological change.

In Vietnam's telecommunications industry, one of the key challenges in achieving digital transformation success lies in the scale and scope of the transformation initiatives. Larger-scale projects, such as the implementation of nationwide digital platforms or the roll-out of 5G networks, require significant investment, careful planning, and coordination across multiple departments. These projects also demand extensive leadership commitment to ensure that all stakeholders are aligned, and that challenges related to resistance, resource allocation, and technological integration are effectively addressed. The relatively slow pace of large-scale projects in Vietnam's telecommunications sector reflects the challenges faced in scaling digital transformation efforts. On the other hand, smaller, more agile projects, although potentially less transformative in scope, are likely to yield quicker results, particularly in the areas of employee engagement and organizational learning. These smaller-scale projects provide an opportunity for experimentation, enabling organizations to test new digital strategies and learn from their experiences, which ultimately strengthens their capacity to manage larger, more complex initiatives. This observation echoes the findings of Srivastava et al. [53], who argue that digital agility is best cultivated through leadership behaviors that enable iterative small-scale experimentation before scaling transformation across the organization.

6. Conclusion

This study employed a comprehensive research methodology that combines qualitative and quantitative approaches to examine the success factors driving digital transformation (DT) in Vietnamese telecommunications enterprises. By analyzing the perspectives of management personnel overseeing digital transformation projects, this research gained insights into the key organizational factors influencing DT outcomes. The findings underscore the importance of people-related factors, such as change leadership, digital leadership, employee commitment to digital transformation, and employee engagement in determining the success of DT initiatives. These factors have a direct and positive impact on digital transformation, with change leadership having the most substantial influence. The scientific novelty of this study lies in its integration of change leadership, employee commitment, organizational capacity, communication, and employee engagement into a holistic model that enhances our understanding of what drives successful DT in an organizational context. This contribution is particularly important for the Vietnamese telecommunications sector, which remains underrepresented in existing DT literature. By highlighting the interactions among leadership behaviors, cultural norms, and employee involvement, this study offers a multi-dimensional view of the transformation dynamics that previous research has often treated in isolation.

This research adds to the broader body of DT literature by proposing a detailed, interlinked model that connects leadership, employee commitment, communication, and organizational capacity as key enablers of successful transformation. Unlike earlier studies that examined these factors independently, this study revealed their mutual reinforcement and combined impact on transformation outcomes. Managers in telecommunications can draw from these findings to design strategies that build leadership capabilities, enhance communication pathways, and foster a culture that supports innovation and continuous learning. Aligning employees' commitment to organizational goals and providing resources for experimentation are critical for sustained success. However, this study had several limitations. It focused primarily on the success factor management pillar, leaving other components, such as process management and domain-specific management, unexplored. It also did not account for regional or organizational differences, such as state-owned versus private enterprises, which may shape perceptions of DT success. Future research should address these gaps by exploring sectoral differences, expanding the framework to include other pillars, and comparing organizational types to uncover how structural and contextual variables influence DT outcomes.

7. Declarations

7.1. Author Contributions

Conceptualization, H.P.T.T. and T.N.T.T.; methodology, H.P.M. and T.T.T.; software, H.P.T.T. and H.P.M.; validation, T.T.B.N. and T.N.T.T.; formal analysis, T.N.T.T.; investigation, T.T.B.N. and H.P.T.T.; resources, H.P.M.; data curation, H.P.M. and T.N.T.T.; writing—original draft preparation, T.N.T.T.; writing—review and editing, T.N.T.T. and H.P.T.T.; visualization, T.T.T.; supervision, H.P.T.T.; project administration, T.T.B.N. All authors have read and agreed to the published version of the manuscript.

7.2. Data Availability Statement

The data presented in this study are available in the article.

7.3. Funding

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7.4. Institutional Review Board Statement

Not applicable.

7.5. Informed Consent Statement

Not applicable.

7.6. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix I

Table A1. Research Questions

Construct	Items
Change Leadership (CL)	CL1. Leaders have a clear long-term vision for digital transformation aligned with the organization's mission.
	CL2. Leaders develop and implement a clear strategy to achieve digital transformation goals.
	CL3. Leaders foster a culture of innovation and shared values to support digital transformation.
	CL4. Leaders empower employees by providing necessary resources and skills to contribute to digital transformation.
	CL5. Leaders motivate employees by setting clear digital transformation goals and rewarding achievements.
Digital Transformation Communication	CC1. Leaders communicate openly about digital transformation, its impacts, and how employees can adapt to new behaviors.
	CC2. Leaders foster two-way communication by listening to employee feedback, building trust and commitment to the transformation.
	CC3. Leaders create a vision of a new future with shared values, reducing uncertainty and stimulating creativity in employees.
Employee Commitment	CM1: Employee commitment increases when employees feel confident in their ability to contribute to the transformation.
	CM2: Employees are more committed when they see the transformation benefiting both their personal growth and the organization's success.
	CM3: Employee commitment increases when employees understand why the transformation is necessary.
	CM4: Employee commitment is stronger when leaders provide both the necessary resources and continuous support for successful transformation.
Employee Engagement	EE1. Employees in senior roles with autonomy and benefits are more engaged in digital transformation initiatives.
	EE2. Organizational support and management practices that encourage collaboration boost employee engagement in transformation.
	EE3. Employees who receive recognition and rewards for their contributions to digital transformation are more engaged.
	EE4. Fairness in procedures and resource allocation strengthens employees' engagement during transformation efforts.
Digital Transformation Capacity	CP1. Digital leadership promotes projects with high digital skills, secures leadership support, and removes barriers.
	CP2. A decentralized structure encourages collaboration and problem-solving during the transformation.
	CP3. Organizational culture strengthens employee commitment to digital transformation.
	CP4. Employees acquire new skills and methods to stay ready for digital transformation.
	CP5. Employees experiment with innovative ideas, learning from past actions to drive success.
	CP6. The organization shares experiences and best practices to optimize change implementation.
	CP7. Employees trust leadership's credibility and believe in fair treatment during the transformation.
Successful Digital Transformation	TC1. The project successfully improved operational performance.
	TC2. The project led to the creation of new business or service models.
	TC3. Customers are satisfied with the changes and outcomes of the project.
	TC4. The project was completed within the approved budget.
	TC5. The project was completed on time.
	TC6. Employees are satisfied with the results of the digital transformation project.
	TC7. Senior leadership is satisfied with the results of the digital transformation project.
	TC8. Project team members are satisfied with the results of the digital transformation project.