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# Research on the Influencing Factors and Configuration Paths of Employees' Behavioral Support for Digital Transformation

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**Abstract:** Digital transformation is a crucial strategic decision for achieving sustainable development. It emphasizes disruptive upgrades in production, operations, and management thinking, thereby infusing vitality into long-term corporate sustainability. While extensive research has explored digital transformation drivers, the role of employees is often overlooked. To address how to activate employees' behavioral support for digital transformation, this study first identified antecedent conditions of employees' behavioral support for digital transformation through content analysis within the AMO framework. Subsequently, by combining NCA and fsQCA methods, the study explored the impact of coupling antecedent conditions on behavioral support for digital transformation. The findings are as follows. First, a single factor does not constitute a necessary condition for high behavioral support for digital transformation. Second, there are four configurations that cause high behavioral support for digital transformation: "motivation-driven and leadership-supported", "experience-led and motivation-driven", "efficacy-dominated and opportunity-empowered", and "individually-driven and opportunity-enabled". Third, learning goal orientation and perceived usefulness are important for activating high behavioral support for digital transformation. This study can provide insights to inspire employees' support for digital transformation, facilitating corporate digital transformation and further achieving sustainability.

**Keywords:** behavioral support for digital transformation; AMO theory; NCA; fsQCA; digital transformation

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## 1. Introduction

In the era of the digital economy, digital transformation has become a new theme and a must for enterprises to survive, develop, and be sustainable [1]. Corporate digital transformation can provide a key driving force for enterprises to achieve sustainable development by optimizing internal and external resource allocation as well as improving their efficiency of production, operation, and management [2]. The issue of corporate digital transformation has attracted widespread attention. Current research predominantly approaches digital transformation from a macro and holistic perspective, such as examining the impact of policy environment or enterprise characteristics on the corporate digital transformation [3,4], while relatively overlooking the role of employees [5]. According to Accenture's 2023 China Enterprise Digital Transformation Index report, many enterprises amid digital transformation exhibit deficiencies in fostering broad consensus among employees and cultivating a culture conducive to change. The effectiveness of the implementation of their transformation strategies is substantially undermined by human factors or even rendering them little more than empty rhetoric. As scholars have emphasized, while it refers to a

process based on digital technologies that aim to improve entities by triggering significant changes to their properties [6], digital transformation requires more than technology, and it demands strategic alignment coupled with other critical factors, such as personnel and talent development [7]. The key to enterprises' digital transformation lies in their "people" [8], and its success depends on employees' active participation in the change process [9,10]. Therefore, investigating how to stimulate employees' behavioral support for digital transformation should be an urgent management issue, as employees' supportive behavior towards digital transformation refers to the efforts exhibited by employees in the workplace that exceed formal organizational mandates to support digital transformation and embody the spirit of organizational change [11], which plays a key role in the success of the change [5,11]. Addressing this challenge can provide endogenous momentum for enterprises' digital transformation, further facilitating the achievement of enterprises' sustainable development.

Research on change-supportive behavior is relatively abundant, primarily focusing on the influence of individual and contextual factors [12], while studies on employees' behavioral support for digital transformation remain insufficient. Furthermore, change-supportive behavior is jointly influenced by both organizational change management contexts and individual factors [13]. However, existing studies predominantly focus on examining the "net effects" of independent variables while neglecting how multi-factor interactions activate supportive behavior towards digital transformation. To effectively facilitate digital transformation management, it is evident to identify the antecedent conditions and explore the combination effect of influencing factors on employees' behavioral support for digital transformation.

The ability–motivation–opportunity (AMO) model serves as a critical analytical framework for explaining employee behaviors and outcomes, positing that the ability, motivation, and opportunity elements synergistically influences employee work behavior [14]. The AMO framework could provide a solid theoretical foundation for investigating how factors collectively stimulate employees' behavioral support for digital transformation. The qualitative comparative analysis (QCA) method, which considers that the impact of a single variable on an outcome is not independent, but its significance and role depend on its combination with other variables, can better analyze and elucidate the complex interactions of multiple variables as well as explore complex problems caused by various concurrent causes and effects from a holistic perspective [15–17]. QCA has thus demonstrated strong explanatory power in addressing complex issues within the fields of organizational behavior and human resource management [18]. It aligns well with the research objectives of this study.

In summary, this study applied the mixed-methods research. Specifically, we constructed the theoretical framework by leveraging the AMO model and utilized content analysis to identify key influencing factors. Subsequently, we applied necessary condition analysis (NCA) and fuzzy-set qualitative comparative analysis (fsQCA) methods to investigate how the coupling of antecedent conditions affects employees' behavioral support for digital transformation.

The contributions of this study are as follows. First, by exploring the activation paths of employees' behavioral support for digital transformation within the AMO framework, this study emphasizes the critical micro-level role of individual behavior in organizational digital transformation processes, thereby offering a novel perspective for advancing enterprises' digital transformation. Second, this study employs the mixed-methods research approach, integrating content analysis, NCA, and fsQCA methods, which facilitates an in-depth investigation into the influencing factors of employees' behavioral support for digital transformation and helps the understanding of complex mechanisms underlying

employees' supportive behavior toward digital transformation. Thus, this study expands the research perspective on change-supportive behavior and provides new insights into its influencing factors and research approaches. Third, the study contributes to the advancement of the AMO model by demonstrating how the configuration of employees' ability, motivation, and opportunity facilitates behavioral support for digital transformation.

The rest of this study is organized as follows: Section 2 is the literature review and research framework. Section 3 is the methodology. Section 4 elucidates the analysis of factors influencing employees' behavioral support for digital transformation. Section 5 presents the configuration research design and analytical findings. Section 6 is the discussion. Section 7 is the conclusion.

## 2. Literature Review and Research Framework

### 2.1. Behavioral Support for Digital Transformation

Change-supportive behavior refers to employees' active participation in the planned organizational change initiatives, efforts to facilitate successful implementation, and contributions to the organizational change [19]. Organizations across the globe are intensifying their digital transformation initiatives to develop competitive strengths in an increasingly digitalized business landscape [20], and it is more practically meaningful to investigate change-supportive behavior in the context of the times. Therefore, change-supportive behavior has been given new significance in terms of the times—behavioral support for digital transformation [11]. In this study, we define it as employees' behavior transcending formal organizational mandates manifested through proactive engagement in digital transformation initiatives, facilitation of change processes, and dedicated contributions to digital transformation.

Current investigations into behavioral support for change predominantly concentrate on analyzing its determinants, which can be classified into two categories: individual factors and situational factors. Research on individual factors primarily examines personal traits and personal cognition [12]. Empirical studies have demonstrated that personal traits, such as Zhongyong thinking, psychological resilience, and psychological capital, can contribute to change-supportive behavior [11,21,22]. In terms of individual cognition, factors such as anticipated benefits of change, beliefs about change, and perception of change uncertainty have been identified as influencing factors of employees' behavioral support for change [19,23,24]. Situational factors include organizational factors and social support mechanisms [12]. The impacts of organizational factors, such as formal involvement in change processes, organizational inducements, and management practices, on change-supportive behavior have been verified [19,21,25]. Social support factors primarily encompass elements of relational aspects and leadership style, such as vision communication and transformational leadership [26,27].

Scholars have actively explored the studies of behavioral support for digital transformation. Drawing on social cognitive theory, Lang et al. argued that Zhongyong thinking enables individuals to perceive and understand their organizational environments in a multifaceted, integrated, and harmonious manner, driving employees to develop a high level of learning goal orientation and thus actively support digital transformation. Their research further identified the moderating effects of environmental dynamism and team change climate [11]. Centering on the digital transformation within higher education institutions, Straatmann et al. demonstrated that vision communication and participation opportunities serve as critical change process factors, and these elements play a pivotal role in fostering professors' supportive behavior toward digital transformation [28]. Drawing upon the transactional theory of stress, Liu et al. developed a dual-path model to investigate why employees (do not) support enterprise digital transformation. The findings demonstrated

that challenge and hindrance appraisals serve as mediating variables between enterprise digital transformation and employee digital transformation support. Furthermore, the study revealed that employees' regulatory focus moderates the indirect effects of enterprise digital transformation on their supportive behaviors [5].

### *2.2. The AMO Theory*

Building on the research of Blumberg and Pringle [29], Appelbaum et al. introduced the AMO theoretical framework, emphasizing that performance is the synergistic outcome of ability, motivation, and opportunity [14], thereby providing an integrated analytical framework for the study of individual behavior. Here, ability represents the physical and cognitive skills necessary for an individual to perform an activity effectively, motivation reflects the psychological or emotional inclination of an individual to engage in or execute a specific activity, and opportunity refers to external environmental factors beyond an individual's direct control that either enable or constrain the attainment of task performance or the enactment of related behaviors [14]. The AMO framework has been extensively applied in human resource management research. However, existing studies have shown limitations in exploring the relationships among AMO components, highlighting the need for further investigation into the interactive or synergistic effects of the three components of the AMO framework [30].

### *2.3. Research Framework*

According to the AMO theory, individual behavior results from the combined effects of three elements: ability, motivation, and opportunity [14]. This theoretical perspective aligns well with the study of behavioral support for digital transformation, which falls within the realm of individual behavior. Thus, it could provide a scientific theoretical framework for analyzing behavioral support for digital transformation in this study. At the same time, change-supportive behavior is influenced by the synergistic effects of situational and individual factors [13]. A systematic analysis of how to activate behavioral support for digital transformation can be achieved by integrating the theoretical framework of individual behavior with the practical logic of behavioral support for change. The QCA method recognizes that the impact of a single variable on an outcome is not independent, but its significance and role depend on its combination with other variables. The QCA method is suitable for this study's objectives, as it enables the investigation of how the configuration of ability, motivation, and opportunity facilitates behavioral support for digital transformation [15–17].

From the perspective of ability factors, self-efficacy, and change-related job skills are frequently cited in the existing literature [30]. Individuals possessing greater competencies exhibit an expansive scope of knowledge and skills, which enable more effective assimilation of valuable information and facilitates the acquisition of new proficiencies [31]. That is, individuals equipped with the necessary abilities exhibit greater confidence in adapting to digital transformation and maintain a stronger sense of control when participating in digital transformation initiatives. Change-supportive behavior represents a complex form of extra-role behavior, which falls outside formal job responsibilities and is not directly incentivized by organizational reward systems [32]. Driven by strong intrinsic motivation, employees are more likely to exhibit change-supportive behavior [11]. Opportunity centers around situational factors such as leadership styles and organizational regulations. According to the conservation of resources (COR) theory, employees in organizations undergoing digital transformation may experience significant stress when faced with role ambiguity and increased job difficulty caused by the transformation, from both the anticipation and actual experience of losing valued resources [21,32–34]. Opportunity factors serve to miti-

gate resource depletion caused by digital transformation and protect employees from stress. Based on the expectation of receiving more resources, employees are willing to invest their resources in committing to the success of the organizational digital transformation, such as demonstrating change-supportive behavior [21,34].

In summary, grounded in the AMO theory, this study develops an integrated research framework incorporating individual and situational factors, which will guide the implementation of the mixed methods research in this study.

## 3. Methodology

The adoption of a mixed-methods research design that integrates the content analysis and the QCA method enables an in-depth exploration of the essence and patterns underlying various social issues, thereby ensuring the scientific rigor and robustness of the research conclusions [35]. To investigate the influencing factors of employees' behavioral support for digital transformation, as well as identify the specific configurations of factors that can effectively activate high supportive behavior towards digital transformation, multiple methods were consequently employed in this study.

Content analysis is commonly used to examine textual or transcribed content (e.g., open-ended survey responses, print media, interviews, etc.). This method helps researchers understand and summarize the core themes and underlying meanings within the materials, thereby providing a basis for the analysis and interpretation of related issues [36]. Given that relevant research remains insufficient, content analysis can assist us in exploring the influencing factors of employees' behavioral support for digital transformation. This study collected primary data through semi-structured interviews and explored the influencing factors on the basis of these materials.

QCA is a set-theoretic method, and both outcomes and conditions are conceptualized as sets, typically aiming to identify configurations of conditions that may cause an outcome (and its absence) [17]. As a set-theoretical technique, fsQCA enables a detailed analysis of how causal conditions contribute to an outcome in question [16,17]. It allows researchers to interpret causal complexity, equifinality, and causal asymmetry [15,17], rendering it the preferred technique for analyzing complex questions. The NCA method serves as a valuable tool for identifying the necessity of individual conditions and provides insights into the extent to which antecedents are required for a particular outcome, thereby compensating for limitations of fsQCA in necessity analysis [37,38]. Combining NCA and fsQCA methods can better explore interactions and synergistic effects among multi-factor combinations in cases, thereby enhancing the persuasiveness and completeness of research conclusions. Therefore, this study employed a hybrid analytical approach integrating the NCA and fsQCA methods to investigate the antecedent configurations of employees' behavioral support for digital transformation.

This study consisted of two phases. In the first phase, the research team conducted interviews with target participants. Assisted by qualitative data analysis software NVivo, the team systematically analyzed and coded the textual data to investigate the factors influencing employees' behavioral support for digital transformation with the AMO framework, subsequently constructing the research model. In the second phase, building upon the preliminary findings, the research team developed and distributed the structured questionnaires. The survey data were analyzed through the integration of NCA and fsQCA methods. Following standard analytical procedures, including variable calibration, necessity analysis, and configurational analysis, the study revealed multiple pathways that activate high behavioral support for digital transformation.

## 4. Phase 1: Study of Factors Influencing Employees' Behavioral Support for Digital Transformation

### *4.1. Interview Participant Selection*

This study employs semi-structured interviews. This study conducted interview participant recruitment in accordance with purposive sampling and theoretical saturation principles. The research team disseminated recruitment posts on Chinese social media platforms, such as Rednote and Douban, to invite potential interviewees. The team members contacted willing volunteers and conducted screening procedures to ensure their suitability as participants for the research topic of this study. Interviewees must meet the following conditions. Participants should be employed by organizations undergoing digital transformation, actively support their organizations' digital transformation initiatives, and be willing to participate in interviews conducted by the research team to provide their insights. Meanwhile, the interviewees should be selected from enterprises of different ownership types and industries, with a reasonable geographical distribution. Additionally, the participants should cover employees with various positions while maintaining diversity in terms of demographic characteristics like gender and educational background. Guided by the principle of theoretical saturation, the interview process was concluded when the collected data no longer yielded new concepts, and the information became repetitive. When 16 participants were interviewed, the coded data no longer presented new concepts or categories. Therefore, an additional three samples were gathered to test for saturation.

This study recruited a total of 19 participants, comprising 11 male and 8 female interviewees, aged between 22 and 38 years, with diverse educational backgrounds. The samples comprised both ordinary employees and managers from enterprises located in Jiangsu, Shandong, and Guangdong provinces, as well as other regions in China. Their industries spanned manufacturing, information transmission, software, information technology services, and other sectors. The participants' demographic information is presented in Appendix A.

### *4.2. Conduct of the Interviews*

All interviews in this study were conducted online, each lasting approximately 20 to 30 min. After explaining the research purpose, obtaining consent for recording, and ensuring privacy protection, the researchers followed the interview outline to pose questions, such as "Under what circumstances, or what factors, would lead you to support organizational change?". During the interviews, the researchers extended and probed based on the interviewees' responses, promptly correcting and clarifying any deviations or ambiguities in their descriptions. When interviewees had difficulty articulating the antecedent mechanisms of behavioral support for digital transformation, the researchers provided a summarized interpretation and sought confirmation from the interviewees.

The interview protocol's design was aligned with this study's research objectives, specifically focusing on identifying the factors that lead employees to support their organizations' digital transformation initiatives. Before conducting formal interviews, the researchers conducted pilot interviews. Taking into account the interviewees' answers and experiences during the interviews, the researchers revised and improved the initial interview protocol. The finalized interview outline consisted of four parts: "Interview Instructions", "Introductory Questions", "Core Interview Questions", and "Closing Remarks" (Appendix B).

### *4.3. Qualitative Data Analysis*

The researchers utilized the qualitative analysis software NVivo 14.0 to analyze the transcribed interview data. Two researchers with adequate qualitative analysis skills

independently coded each dataset. They engaged in iterative discussions and analyses of the materials and concepts, integrating comparative analysis throughout the coding process. Developed concepts and categories informed the coding of remaining data. When new concepts and categories were identified, the researchers compared them with the existing coding results, and when necessary, revisited the data to make adjustments, thereby ensuring coding accuracy.

During the first coding phase, after comparing and eliminating contradictory, semantically ambiguous, and infrequently recurring concepts, 171 open codes were generated. In the second coding phase, by examining the intrinsic logical connections and interactive relationships among different codes, similar conceptual categories were integrated, ultimately generating 18 codes. Finally, through an in-depth analysis of these codes and in conjunction with relevant theoretical foundations and existing research, this study identified six variables—digital literacy, self-efficacy, learning goal orientation, digital leadership, perceived organizational support, and perceived usefulness. The six variables were classified into the three dimensions of the research framework according to the definitions of ability, motivation, and opportunity elements. Coding examples are presented in Table 1, while the themes and subthemes derived from the analysis are presented in Table 2.

**Table 1.** Coding examples.

| Theme | Subtheme | Codes | Quotes |
| --- | --- | --- | --- |
| Digital literacy | Mastery of digital technical skills | Capable of rapidly mastering and applying digital technologies | "I'm a quick learner when it comes to digital technologies, and I can easily apply them at work, which is why I fully support the company's transformation." (S5) |
| Self-efficacy | Sense of self-competence | Trust in personal capability | "During my past work experiences, I faced several instances of company platform optimization and adapted swiftly each time. Although this current change is difficult, I remain highly confident." (S2) |
| Learning goal orientation | Proactive pursuit of learning opportunities | Seeking professional skills enhancement | "This process will have a significant impact on our personal development. For example, my skills will definitely improve, so I am still willing to embrace it." (S7) |
| Learning goal orientation | Embracing of challenging learning tasks | Reframing obstacles as development springboards | "While initially unfamiliar with digital transformation and facing substantial challenges throughout the process, I remained determined to persevere. I viewed this as a test of my capabilities and genuinely embraced the challenge." (S4) |
| Digital leadership | Leaders' ability of digital cognition and practice | Demonstrating supportive behaviors by leaders | "The leader should lead by example and play a vanguard role—that is, they must support the digital transformation, only then can they truly inspire and motivate us to willingly follow suit." (S1) |
| Digital leadership | Leaders' ability of digital ethical empathy | Tolerating employee mistakes | "Since we're just starting with this transformation, mistakes are bound to happen. The leader wanted us to feel at ease while learning and adapting, so he viewed minor errors with understanding." (S3) |
| Perceived organizational support | Provision of learning resources | Establishing university-enterprise collaboration frameworks to provide learning opportunities | "The organization took into account the needs of everyone, organized training for everyone, and also established this model of university-corporate cooperation, there will be teachers from universities to give guidance for us, which provides us with sufficient resources." (S8) |
| Perceived organizational support | Recognition of employee achievements | Recognizing outstanding staff | "I think the company could implement some reward initiatives to recognize employees who contribute to our digital transformation. This would encourage more staff to get involved." (S9) |

**Table 1.** *Cont.*

| Theme | Subtheme | Codes | Quotes |
| --- | --- | --- | --- |
| Perceived usefulness | Work performance optimization | Formulating more effective marketing strategies | "After the company established the customer data platform, user profiles can be generated based on anthropological attributes and purchasing data of the consumers. This enables us to formulate effective marketing strategies grounded in such insights." (S13) |
| Perceived usefulness | Work efficiency improvement | Quick identification of liability for workplace accidents | "Previously, I'd have to go back and forth with workers about their mistakes—they might deny errors and we'd waste time arguing. But now I can simply pull up the original footage or access underlying data to show them concrete evidence. This allows us to identify and resolve issues almost immediately." (S7) |

**Table 2.** Coding Results.

| Theme | Subtheme |
| --- | --- |
| Digital literacy | Mastery of digital technical skills |
| | Utilization of digital technology for collaboration |
| Self-efficacy | Sense of self-competence |
| Learning goal orientation | Proactive pursuit of learning opportunities |
| | Embracing of challenging learning tasks |
| Digital leadership | Leaders' ability of digital resource construction |
| | Leaders' ability of digital cognition and practice |
| | Leaders' ability of digital ethical empathy |
| | Leaders' ability of digital thinking |
| Perceived organizational support | Provision of learning resources |
| | Career development planning for employees |
| | Provision of work assistance |
| | Valuation of employees' perspectives |
| | Consideration of employees' interests |
| | Recognition of employee achievements |
| Perceived usefulness | Work performance optimization |
| | Work efficiency improvement |
| | Workload reduction |

After reaching information saturation, the remaining textual data were systematically coded and analyzed. The results indicated no emergence of new concepts or categories, thereby confirming the attainment of theoretical saturation.

### *4.4. Qualitative Findings*

In the following sections, this study reviews existing research to provide a more comprehensive and robust explanation of the impact of these antecedent factors on behavioral support for digital transformation.

#### 4.4.1. Ability Dimension

(1) Digital literacy

Digital literacy (DL) is defined as "the abilities a person or social group draws upon when interacting with digital technologies to derive or produce meaning, and the social,

learning and work-related practices that these abilities are applied to", encompassing both cognitive and socio-practical dimensions [39]. Digital transformation involves the gradual integration of traditional business practices with digital technologies, placing employees in digitalized work environments and requiring them to possess a high level of digital literacy to drive organizational change [40]. Employees utilize and adapt to digital technologies, forming specific technological affordances based on their cognitive abilities, thereby perceiving and seizing opportunities in digital transformation [41]. A digitally literate employee could take advantage of one or more affordances through their use of digital technologies, which makes them more inclined to utilize digital technologies in the workplace, thereby leading to the higher use of technology at work [42].

(2) Self-efficacy

Self-efficacy (SE) denotes individuals' confidence in their capacities to mobilize motivation, cognitive resources, and actionable strategies needed to exert control over events in their lives [43]. During corporate digital transformation implementation, employees are confronted with multiple challenges, such as adapting to emerging technologies and navigating shifts in organizational values and culture, thereby experiencing significant stress [44]. In the context of organizational change, greater access to resources can help employees alleviate the stress induced by change, promoting their active support for the transformation, such as facilitating their supportive behavior towards change [21]. Self-efficacy is regarded as a critical resource for coping with organizational change [45]. Self-efficacy fosters employees' belief in their competencies and knowledge, reinforcing their conviction to navigate challenges of organizational change while enhancing their perceived control over evolving circumstances, ultimately leading to a supportive intention towards the change [45]. The behavioral intentions have been identified as important and most proximal antecedents of change-supportive behavior [46,47].

#### 4.4.2. Motivation Dimension

The motivation element in this study refers to learning goal orientation. Learning goal orientation (LGO) reflects an individual's strong intention to master new skills, gain a deeper understanding of novel concepts, adapt to new environments, and enhance their competencies [48]. It drives individuals to focus on growth and progress, showing a strong enthusiasm for self-improvement through continuous knowledge acquisition, which in turn fosters intrinsic motivation to support digital transformation. Specifically, from the perspective of knowledge sources, digital transformation can enrich organizational knowledge sources by expanding the breadth and geographic scope of knowledge acquisition, facilitating cross-border knowledge transfer and R&D collaboration, and enhancing scientific relevance, thereby promoting corporate innovation [49]. Employees with a learning goal orientation tend to focus on unfamiliar domains of knowledge and increase the reserve of knowledge in different fields [11]. As organizations undergo digital transformation, employees are exposed to and learn more new knowledge, which motivates them to develop new skills and capabilities actively, support organizational digital transformation, and gain access to additional resources [11].

During the process of organizational digital transformation, employees cannot rely solely on existing knowledge, skills, or processes, and the resulting subversive changes brought about by digital transformation put forward an urgent demand for the enhancement of individual capabilities, which will bring specific challenges and difficulties to employees [50]. Employees with a high level of learning goal orientation tend to choose challenging tasks and goals, viewing them as opportunities for growth [51], and thus actively engage in the corporate digital transformation. Furthermore, the existing literature has demonstrated that when employees are equipped with a high level of learning goal

orientation, they perceive sharing information with colleagues as an opportunity for mutual growth and development [51]. As a result, they actively interact with colleagues and exchange and learn new information [52], which facilitates their search for and acquisition of digital-related knowledge. This enables them to understand and analyze the inevitability and benefits of digital transformation, as well as to identify solutions for addressing the tasks and challenges associated with it.

#### 4.4.3. Opportunity Dimension

Opportunity elements include digital leadership, perceived organizational support, and perceived usefulness.

(1) Digital leadership

Digital leadership (DLS) refers to the ability of leaders to create a clear and meaningful digital vision during the organization's digital transformation, utilize resources to encourage employees to participate in the digital transformation activities, and ensure the effective functioning of the organization in a digital economy environment [53,54]. Digital leadership plays a positive role in constructing a vision to inspire followers, as it enables leaders to articulate clear visions and blueprints for their organizations and provide strategic direction for digital transformation [54]. Vision communication enhances employees' understanding of digital transformation, helping them comprehend the organizational changes and bolstering their belief in its successful implementation, while also enabling employees to link the outcomes of the transformation to personal gains, thereby stimulating their internal motivation. As a result, driven by the positive anticipation of change, employees are inclined to exhibit support towards the change [26].

Furthermore, digital leadership signifies that leaders are adept at leveraging digital technologies to empower employees, providing employees with abundant resources and autonomy to accomplish tasks in a digital environment, thereby inspiring them to adapt and adjust their work practices proactively [55] and fostering their active support for organizational change [27]. Finally, digital leadership enables managers to empathize with employees during the process of organizational digital transformation and avoid relying solely on rational approaches to manage them, reflecting respect for and understanding of "humanity" [56]. Such people-oriented leadership behaviors help alleviate employee stress, reduce their behavioral resistance to change, and promote greater innovative performance at work [57]. As a result, employees are willing to contribute to the organization's digital transformation efforts.

(2) Perceived organizational support

Perceived organizational support (POS) reflects employees' perception of the extent to which the organization values their contributions and cares about their well-being, and when employees perceive organizational support, they feel obligated to reciprocate with positive work attitudes and behaviors [58]. Organizational change often signifies the disruption of existing norms and social relationships, leading to new work dynamics or increased workloads, which can evoke strong negative emotions such as tension and exhaustion among employees during the change period [21]. Digital transformation imposes more challenging role requirements on employees, leading to role ambiguity and self-identity confusion, and may also foster resistance to the organization's digital control methods [44]. According to the COR theory, perceived organizational support can help employees mitigate the resource loss caused by digital transformation, and driven by the expectation of gaining more resources, employees will actively support digital transformation [21,34]. In addition, perceived organizational support implies that the organization provides employees with various conditions conducive to advancing organizational change, such as

training, compensation incentives, and other managerial practices. Therefore, employees believe in the high probability of successful change and anticipate personal gains from the transformation, making them more inclined to support organizational change [25].

(3) Perceived usefulness

Perceived usefulness (PU) refers to the subjective perception of potential users regarding whether using a specific technology will enhance their job performance within an organizational context [59]. It is considered the most critical antecedent condition for employees' willingness to adopt organizational digital tools [60]. Previous research has validated the relationship between perceived usefulness and technology usage behavior [61]. When employees are confronted with an organization's digital transformation, recognizing that adopting new digital technologies can help them better accomplish tasks and improve job performance, they are more likely to view the requirement to learn and master new technologies as an opportunity for growth and development. Consequently, they become more willing to utilize digital tools in their work. Therefore, as important implementers of organizational digital transformation, employees frequently come into contact with digital tools in their work, and perceived usefulness can motivate employees to exhibit supportive behavior toward digital transformation.

### *4.5. Research Model*

Based on the findings of the qualitative analysis above, this study presents the research model illustrating the antecedent conditions regarding employees' behavioral support for digital transformation within the AMO framework (as shown in Figure 1).

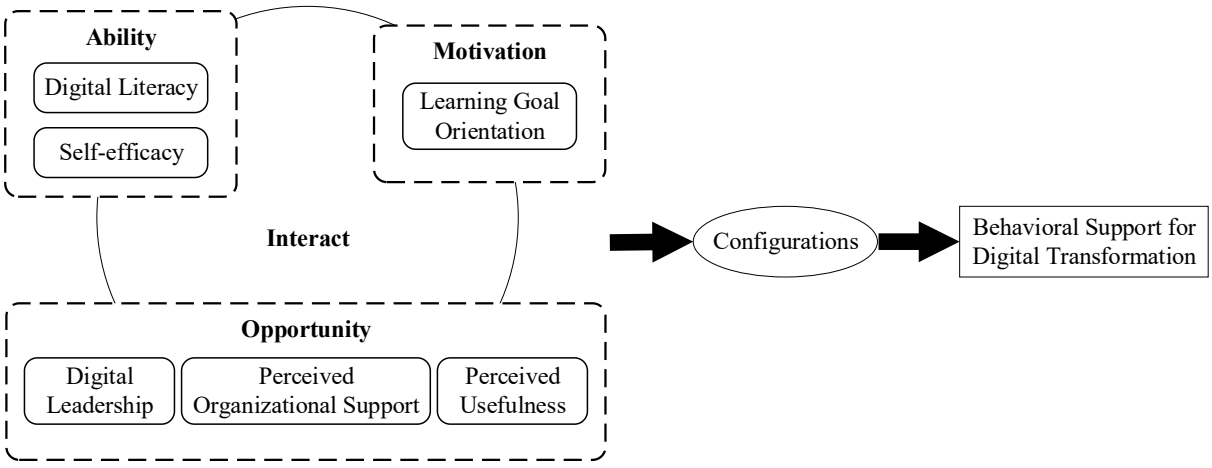


**Figure 1.** Research model.

## 5. Phase 2: The Configuration Research Design and Analytical Findings

### *5.1. Sample and Procedure*

This study employed a questionnaire survey method to collect sample data. The survey did not impose restrictions on demographic variables such as age or industry among the participants; it can, to a certain extent, enhance the applicability of the findings [62]. Since this study focuses on digital transformation, we targeted employees of enterprises undergoing digital transformation from different industries as research subjects. The data collection leveraged researchers' acquaintance networks and the school's MBA center resources.

The questionnaires were primarily distributed and collected online. We conducted a two-wave data collection procedure with a 10-day interval, aiming to mitigate the impact of common method bias on the research findings by introducing a temporal separation

between the measurement of variables [63,64]. In the first phase, demographic information (including age, gender, and industry) was collected alongside a questionnaire assessing factors influencing employees' behavioral support for digital transformation. In the second phase, we assessed supportive behavior toward digital transformation. Subsequently, researchers matched the data based on the last four digits of the phone numbers and the user IDs.

Of 500 distributed questionnaires, 435 valid responses were obtained (87% valid response rate). As shown in Table 3, of the respondents participating in this survey, 40.5% ($n$ = 176) were men, and 59.5% ($n$ = 259) were women, with 93.1% holding at least a bachelor's degree. The majority of the sample consisted of respondents aged 26–30 (36.3%), followed by those aged 31–35 (34.9%). Additionally, ordinary employees constituted the majority at 48.7%. In terms of tenure, 77.9% of the respondents had more than 3 years of work experience. The participants were recruited from diverse industries, with primary representation from manufacturing (28.7%); the financial sector (9.4%); and information transmission, software, and information technology services (23.0%).

**Table 3.** Demographic characteristics of valid respondents ($n$ = 435).

| Variables | Types | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 176 | 40.5% |
| | Female | 259 | 59.5% |
| Age | ≤25 | 69 | 15.9% |
| | 26–30 | 158 | 36.3% |
| | 31–35 | 152 | 34.9% |
| | 36–40 | 34 | 7.8% |
| | >40 | 22 | 5.1% |
| Education background | Junior college or below | 30 | 6.9% |
| | Undergraduate degree | 283 | 65.1% |
| | Graduate degree | 117 | 26.9% |
| | Doctor degree | 5 | 1.1% |
| Position | Ordinary employee | 212 | 48.7% |
| | Low-level manager | 166 | 38.2% |
| | Middle-level manager | 48 | 11.0% |
| | High-level manager | 9 | 2.1% |
| Working years | ≤3 | 96 | 22.1% |
| | 4–6 | 130 | 29.9% |
| | 7–10 | 134 | 30.8% |
| | >10 | 75 | 17.2% |
| Industry of employment | Manufacturing | 125 | 28.7% |
| | Information Transmission, Software, and Information Technology Services | 100 | 23.0% |
| | Financial Sector | 41 | 9.4% |
| | Education | 27 | 6.2% |
| | Accommodation and Catering Services | 25 | 5.7% |
| | Wholesale and Retail Trade | 23 | 5.3% |
| | Construction | 18 | 4.1% |
| | Culture, Sports, and Entertainment | 8 | 1.8% |
| | Transport, Storage, and Postal Services | 7 | 1.6% |
| | Production and Supply of Electricity, Heat, Gas, and Water | 6 | 1.4% |
| | Others | 55 | 12.6% |

Notes: This study distinguishes the industries in which the participants are engaged based on the criteria of the Industrial Classification for National Economic Activities.

### *5.2. Measurement of Variables*

All variables were assessed using 7-point Likert-type scales ranging from "1 = strongly disagree" to "7 = strongly agree".

Digital literacy (DL): Referring to the scale developed by Ng [65], ten items are included, such as "I know how to solve technical problems I encounter in my work".

Self-efficacy (SE). The adopted scale revised in Chinese by Wang et al. [66] includes ten items, such as "I can always solve problems if I try my best".

Learning-goal orientation (LGO): The adopted scale developed by VandeWalle includes five items, such as "I am willing to select a challenging work assignment that I can learn a lot from" [48].

Digital leadership (DLS): The adopted scale developed by Zhang and Zheng includes eighteen items, such as "My leader knows the gap between the current state of the enterprise and the goals of digital transformation" [56].

Perceived organizational support (POS): Referring to the scale developed by Ling et al. [67], thirteen items are designed, including "The company can pay attention to my excellent work performance and give me rewards".

Perceived usefulness (PU): The adopted scale developed by Venkatesh and Davis includes four items, such as "Using digital technology would improve my performance in my job" [68].

Behavioral support for digital transformation (BSDT). In accordance with Wang et al. and referencing the scale developed by Herscovitch and Meyer to measure employees' behavioral support for digital transformation, five items are designed [32,69]. A sample item from the scale states, "I would speak highly of the corporate's digital transformation initiatives to the outside world".

### *5.3. Reliability and Validity*

SPSS27.0 was used to assess the reliability of the data, and the results are presented in Table 4. All Cronbach's alpha coefficients exceeded the recommended threshold of 0.7, indicating robust internal consistency.

**Table 4.** Cronbach's $\alpha$ value of each variable.

| Variables | Cronbach's Alpha |
|---|---|
| DL | 0.912 |
| SE | 0.941 |
| LGO | 0.869 |
| DLS | 0.915 |
| POS | 0.883 |
| PU | 0.891 |
| BSDT | 0.902 |

Notes: DL = digital literacy, SE = self-efficacy, LGO = learning goal orientation, DLS = digital leadership, POS = perceived organizational support, PU = perceived usefulness, BSDT = behavioral support for digital transformation. Same as below.

The assessment of validity was conducted through the application of both convergent and discriminant validity measures. According to Table 5, the standardized factor loadings for each measurement item were greater than 0.60, the AVE values for each variable were above 0.50, and the CR values were all more significant than 0.70, from which the data can be determined to have good convergent validity. All variables were significantly correlated with each other ($p < 0.01$), and the arithmetic square root of the AVE value of each variable (diagonally positioned in Table 5) was greater than the absolute value of the correlation coefficients with the other variables, with ideal discriminant validity of the scale data. Furthermore, the results suggest that the model had a good fitness ($\chi^2/df = 1.104$, RMSEA = 0.016, CFI = 0.987, IFI = 0.987, and TLI = 0.987).

**Table 5.** The results of FL, CR, and AVE.

| Variables | CR | AVE | Loading Range | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. DL | 0.885 | 0.720 | [0.736–0.817] | 0.848 | | | | | | |
| 2. SE | 0.941 | 0.614 | [0.751–0.813] | 0.190 | 0.784 | | | | | |
| 3. LGO | 0.870 | 0.572 | [0.717–0.774] | 0.368 | 0.432 | 0.756 | | | | |
| 4. DLS | 0.818 | 0.533 | [0.732–0.834] | 0.149 | 0.501 | 0.527 | 0.730 | | | |
| 5. POS | 0.761 | 0.517 | [0.690–0.803] | 0.633 | 0.550 | 0.350 | 0.400 | 0.719 | | |
| 6. PU | 0.892 | 0.673 | [0.802–0.843] | 0.391 | 0.295 | 0.443 | 0.452 | 0.459 | 0.820 | |
| 7. BSDT | 0.902 | 0.648 | [0.796–0.819] | 0.364 | 0.580 | 0.665 | 0.615 | 0.566 | 0.455 | 0.805 |

### *5.4. Calibration*

This study employs the direct calibration method proposed by Ragin to calibrate the data [70]. The direct calibration method utilizes three calibration thresholds (anchor points), namely, the full membership point, the full non-membership point, and the crossover point, based on theoretical deduction or practical knowledge, so as to transform variable raw scores into set measures. The calibrated set falls within the range of 0 to 1. The direct calibration method is one of the most common and relatively rigorous data calibration methods.

Following prior research [71], we set the anchor point at the 95th percentile (full membership point), 50th percentile (crossover point), and 5th percentile (full non-membership point) of the raw data. Based on this, we assigned the value of 0.501 to the samples with a membership score of 0.5 [16].

### *5.5. Necessity Analysis*

This study combines the NCA and fsQCA methods to test the necessity of individual conditioning variables, thereby identifying the necessary condition for the outcome among the antecedent conditions. Tables 6 and 7 present the results of the necessity analysis and bottleneck level analysis using the NCA method, while Table 8 displays the necessity analysis results using the fsQCA method.

**Table 6.** Necessity analysis based on NCA.

| Variable | Approach | Accuracy | Ceiling Zone | Scope | Effect Size | *p*-Value |
|---|---|---|---|---|---|---|
| DL | CR | 96.3% | 0.036 | 0.94 | 0.039 | 0.037 |
| SE | CR | 91.5% | 0.080 | 0.93 | 0.086 | 0.012 |
| LGO | CR | 90.3% | 0.109 | 0.94 | 0.116 | 0.000 |
| DLS | CR | 94.3% | 0.062 | 0.95 | 0.065 | 0.011 |
| POS | CR | 99.5% | 0.023 | 0.95 | 0.025 | 0.172 |
| PU | CR | 99.8% | 0.006 | 0.92 | 0.007 | 0.188 |

Notes: CR (ceiling regression) method is applicable to continuous variables and discrete variables with more than five levels, so the CR method is used in this study. General benchmark for effect size: $0 < d < 0.1$ as small effect, $0.1 \leq d < 0.3$ as medium effect, $0.3 \leq d < 0.5$ as large effect, and $d \geq 0.5$ as very large effect. The *p* value was generated by a permutation test with a re-sample count of 10,000 in the NCA.

**Table 7.** Analysis of bottleneck level (%) based on NCA.

| BSDT | DL | SE | LGO | DLS | POS | PU |
|---|---|---|---|---|---|---|
| 0 | NN | NN | NN | NN | NN | NN |
| 10 | NN | NN | NN | NN | NN | NN |
| 20 | NN | NN | NN | NN | NN | NN |
| 30 | NN | NN | NN | NN | NN | NN |
| 40 | NN | 1.7 | NN | NN | NN | NN |
| 50 | NN | 5.9 | NN | NN | NN | NN |
| 60 | 1.9 | 10.1 | NN | NN | NN | NN |
| 70 | 5.8 | 14.4 | 1.7 | NN | NN | NN |
| 80 | 9.6 | 18.6 | 26.3 | NN | 5.0 | NN |
| 90 | 13.4 | 22.8 | 51.0 | 29.2 | 11.3 | 3.2 |
| 100 | 17.2 | 27.0 | 75.7 | 86.0 | 17.6 | 8.1 |

Notes: CR method; NN stands for "unnecessary".

**Table 8.** Necessary condition analysis based on fsQCA.

| Antecedent Condition | High BSDT | | Non-High BSDT | |
|---|---|---|---|---|
| | Consistency | Coverage | Consistency | Coverage |
| DL | 0.693 | 0.672 | 0.569 | 0.563 |
| ~DL | 0.549 | 0.555 | 0.668 | 0.690 |
| SE | 0.755 | 0.753 | 0.470 | 0.478 |
| ~SE | 0.476 | 0.469 | 0.757 | 0.759 |
| LGO | 0.774 | 0.781 | 0.432 | 0.445 |
| ~LGO | 0.449 | 0.437 | 0.787 | 0.780 |
| DLS | 0.772 | 0.741 | 0.503 | 0.492 |
| ~DLS | 0.471 | 0.482 | 0.735 | 0.767 |
| POS | 0.735 | 0.726 | 0.510 | 0.514 |
| ~POS | 0.507 | 0.504 | 0.727 | 0.737 |
| PU | 0.734 | 0.729 | 0.483 | 0.490 |
| ~PU | 0.486 | 0.480 | 0.733 | 0.738 |

Notes: "~" indicates the absence of or a low level.

The NCA technique requires that at least two criteria be met concurrently to identify necessary conditions: the effect size (d) $\geq 0.1$, and a result from a Monte Carlo simulation permutation test that indicates the effect size is significant ($p < 0.05$) [38,72]. According to Table 6, the effect size for learning goal orientation exceeds 0.1 and the *p*-value is significant, but its accuracy is below 95%. Based on the criteria proposed by Dul [37], this study concludes that learning goal orientation is not a necessary condition. At the same time, none of the other antecedent conditions constitute necessary conditions for the outcome variable.

Bottleneck analysis elucidates the necessary level of the antecedent condition essential for attaining a certain level of the dependent variable. According to Table 7, to achieve a behavioral support for digital transformation level of 70%, a digital literacy level of 5.8%, a self-efficacy level of 14.4%, and a learning goal orientation level of 1.7% must be simultaneously satisfied.

The consistency of each antecedent variable is below 0.9, indicating that they are not necessary conditions for achieving high behavioral support for digital transformation. This result is consistent with the findings from the NCA analysis.

### *5.6. Configurational Analysis*

In this study, the raw consistency threshold was set at 0.8, the PRI threshold was set at 0.7, and the case frequency threshold was set at 4. By comparing the parsimonious solutions and the intermediate solutions, core conditions and peripheral conditions can be identified. Peripheral conditions refer to condition variables that appear only in the intermediate solution, while core conditions are those that are present in both the intermediate and parsimonious solutions. Drawing on prior research, this study reports the intermediate solutions, supplemented by the parsimonious solutions [70]. When presenting the configurational results, this study adopts the notation system introduced by Ragin and Fiss to visually represent causal conditions and their combinatorial relationships [16].

The results of the configurational analysis are presented in Table 9; four configurations (H1, H2, H3, and H4) are found to activate employees' high behavioral support for digital transformation.

**Table 9.** Configurations for achieving high behavioral support for digital transformation.

| Antecedent Condition | H1 | H2 | H3 | H4 |
|---|---|---|---|---|
| DL | ⊗ | • | ⊗ | • |
| SE | • | | ● | ● |
| LGO | ● | ● | | ● |
| DLS | ● | ● | • | |
| POS | | | • | • |
| PU | | ● | ● | ● |
| Raw coverage | 0.352 | 0.424 | 0.270 | 0.380 |
| Unique coverage | 0.114 | 0.103 | 0.047 | 0.074 |
| Consistency | 0.914 | 0.911 | 0.933 | 0.913 |
| Solution coverage | | 0.684 | | |
| Solution consistency | | 0.890 | | |

Notes: "●" indicates the presence of a core condition, "•" indicates the presence of a peripheral condition, "⊗" indicates the absence of a core condition, "⊗" indicates the absence of a peripheral condition, and blank spaces indicate "do not care".

(1) Configuration H1: "Motivation-driven and Leadership-supported"

This path reveals that the combination of non-high digital literacy, high learning goal orientation, and high digital leadership as the core conditions and high self-efficacy as the peripheral condition can help to stimulate high behavioral support for digital transformation among employees. Digital leadership enables managers to create abundant work resources and learning opportunities for internal members by promoting digital transformation initiatives. Even when individual digital literacy is suboptimal, employees with high learning goal orientation are willing to continuously acquire knowledge to achieve self-improvement, adeptly utilize resources to develop personal capabilities such as reconfiguring work paradigms and cultivating digital competencies, and ultimately align their developmental trajectories with organizational transformation goals. In this process, self-efficacy enhances employees' belief in their ability to overcome difficulties and be competent for organizational digital transformation, thereby fostering active support for organizational change.

(2) Configuration H2: "Experience-led and Motivation-driven"

According to configuration H2, the combination of high learning goal orientation, high digital leadership, and high perceived usefulness as the core conditions, along with high digital literacy as a peripheral condition, contributes to stimulating employees' high behavioral support for digital transformation. This configuration indicates that digital leadership signifies that managers can not only provide necessary resources for employees but also guide employees to view organizational change positively. Simultaneously, employees' acknowledgment of the positive impact of digital technologies on work performance helps motivate their willingness to support digital transformation. Individuals with high learning goal orientation tend to view digital transformation as an opportunity for self-improvement, actively search for resources available within the organization, and recognize the value of digital technology as an enhancing work resource. Through deliberate knowledge acquisition and rapid adaptation, they may achieve cognitive-behavioral alignment with organizational digital transformation. In the process, high digital literacy enables employees to better develop digital knowledge, apply digital technology to their work, and engage in digital social collaboration. These successful implementation experiences generate positive reinforcement cycles, thus reinforcing their support for the enterprise's digital transformation.

(3) Configuration H3: "Efficacy-dominated and Opportunity-empowered"

According to configuration H3, the combination of core conditions—non-high digital literacy, high self-efficacy, and high perceived usefulness, along with peripheral conditions of high digital leadership and high perceived organizational support can help to stimulate high behavioral support for digital transformation. When confronted with technological updates, process restructuring, and workflow transformations, employees demonstrating high self-efficacy exhibit less anxiety and resistance. They maintain confidence in their capacity to manage conflicts and challenges effectively. Driven by the perception that digital tools can improve work performance, this positive trait makes it more likely that they will explore the functions of digital tools in depth and discover their practical value. Through this process, they fully leverage organizational resources to strengthen their identification with organizational change and commit to its successful implementation. Organizational support, such as systematic digital skills training and change-oriented incentive mechanisms, coupled with the assistance provided by managers demonstrating digital leadership, creates a favorable environment for employees to actively adapt to change. This supportive ecosystem can also reinforce and amplify employees' self-efficacy.

(4) Configuration H4: "Individually-driven and Opportunity-enabled"

This path reveals that the synergistic combination of core conditions, high self-efficacy, high learning goal orientation, and high perceived usefulness, coupled with peripheral conditions comprising high digital literacy and high perceived organizational support, can help to stimulate high digital change support behaviors among employees. This configuration is a combination of motivation, opportunity, and ability elements. Employees' high learning goal orientation, self-efficacy, and digital literacy empower them with the confidence and capability to engage in digital practices actively. Meanwhile, the perceived utility of digital tools and organizational support further fosters employees' identification with and commitment to corporate digital transformation.

In addition, among the four configurations, learning goal orientation and perceived usefulness appeared three times as core conditions, suggesting that learning goal orientation and perceived usefulness play an important role in activating employees' behavioral support for digital transformation and that the combination of learning goal orientation or perceived usefulness with other factors is more likely to lead to the emergence of high behavioral support for digital transformation.

### *5.7. Robustness Check*

This study conducted a robustness check by adjusting the case frequency threshold and raw consistency threshold. Initially, the case frequency threshold was changed to 5; three configuration solutions remain entirely consistent, and the configuration H1 (~DL*SE*LGO*DLS) exhibits a subset relationship with one of the configurations obtained after the robustness check (~DL*SE*LGO*DLS*~POS). Subsequently, the raw consistency threshold was adjusted from 0.80 to 0.85, with no substantial changes in the outcomes. This affirms the reliability and robustness of the study findings [73].

## 6. Discussion

### *6.1. General Discussion*

During the process of corporate digital transformation, employees are not only key stakeholders of an enterprise but also executors of digital strategies and participants in the innovation process. Therefore, employee support for digital transformation is crucial. Without this, the implementation of corporate digital transformation will face significant challenges, creating obstacles to achieving sustainable development.

This study focuses on the employee micro-level, combining it with actual management practice, and content analysis is used to identify the influencing factors of behavioral support for digital transformation. Subsequently, drawing upon the AMO framework, this study systematically integrates individual ability, motivation, and opportunity factors. By combining NCA and fsQCA methods, the study explores the impact of coupling antecedent conditions on behavioral support for digital transformation.

The findings of this study are specified as follows: First, digital literacy, self-efficacy, learning goal orientation, digital leadership, perceived organizational support, and perceived usefulness are not necessary conditions for the outcome. It indicates that fostering employee support for digital transformation during the organizational change process requires an integrated and holistic strategy, which also aligns with the characteristics of set theory. Second, four configurations can lead to employees' supportive behavior toward digital transformation. Configuration H1 is "motivation-driven and leadership-supported" (~DL*SE*LGO*DLS), Configuration H2 is "experience-led and motivation-driven" (DL*LGO*DLS*PU), Configuration H3 is "efficacy-dominated and opportunity-empowered" (~DL*SE*DLS*POS*PU), and Configuration H4 is "individually-driven and opportunity-enabled" (DL*SE*LGO*POS*PU). Additionally, learning goal orientation and perceived usefulness play an important role in activating employees' behavioral support for digital transformation.

Therefore, this study not only has theoretical significance but also provides practical insights for organizations' managers. Organizations can stimulate employees' supportive behavior toward digital transformation by developing appropriate strategies, promoting the implementation of organizational digital transformation, and energizing corporate sustainability.

### *6.2. Theoretical Implications*

Our study contributes in several ways to expanding the existing literature. First, while extant research predominantly examines corporate digital transformation from macro-level and holistic perspectives, often underexploring employees' role in organizational digital transformation, this study shifts the analytical lens to the employee micro-level. This study constructs the research model encompassing ability–motivation–opportunity factors to investigate the activation mechanisms of employees' behavioral support for digital transformation. This study responds to the concern about the lack of employee focus in digital transformation research [5,74].

Second, this study employs a mixed-method research design integrating content analysis, NCA, and fsQCA methods. On the one hand, it facilitates in-depth exploration of employees' behavioral support for digital transformation, enabling the identification of critical antecedent conditions and the construction of a more explanatory research model. On the other hand, in contrast to existing studies focusing on the net effects of single or limited variables [5,11], the integrated use of NCA and fsQCA techniques provides enhanced insights into the intricate causal mechanisms underlying employees' supportive behavior toward digital transformation. This study also extends the academic perspective on change-supportive behavior and provides new research ideas for exploring the influencing factors and motivating mechanisms.

Finally, this study employs a configurational methodology to analyze how the synergistic interaction of elements encompassed in the AMO framework drives employees' behavioral support for digital transformation. Our findings address recent scholarly calls for deeper investigations into the interdependencies among AMO components [30].

### *6.3. Management Implications*

The insights derived from our study also offer valuable implications for the refinement of management practices. First, organizational management should comprehensively consider the factors influencing employees' supportive behavior toward digital transformation. According to the findings of this study, a single antecedent factor does not constitute a necessary condition for employees' behavioral support for digital transformation. Therefore, managers should take into account the heterogeneity of resources, such as employees' ability elements, motivation elements, and organizational context elements. They should avoid over-reliance on a particular way to drive employees to support the corporate digital transformation and develop strategies tailored to local conditions to drive high behavioral support for digital transformation among employees.

Second, organizational managers should prioritize and cultivate employees' learning goal orientation. On one hand, during talent recruitment or promotion, personality trait tests can be used to identify employees with learning goal orientation traits. On the other hand, organizations can provide ongoing learning opportunities for employees, such as developing personalized digital learning plans, offering online courses related to digital transformation, forming internal digital learning communities, or assigning mentors, among other initiatives. In addition, managers across all organizational levels should lead by example by actively engaging in learning about digital transformation and highlighting the significance of learning to employees. They can also integrate learning goals into performance appraisal systems to incentivize employees to learn proactively.

Finally, organizations should dedicate efforts to building increasingly perfect digital tools. By systematically analyzing employee feedback (such as satisfaction surveys) and behavioral data (such as operational logs from digital platforms), it allows the organization to gain insights into the needs of employees, thereby enhancing the alignment between digital technologies and business processes. While continuously optimizing existing functionalities, parallel explorations can be initiated into the customization of personalized functionalities and services, thereby enabling employees to tangibly experience the positive impact of digital technologies on their work performance. Furthermore, organizations should focus on the implementation of a systematic digital literacy cultivation mechanism by establishing structured training frameworks that integrate technical competency development programs with applied learning opportunities, driving the progressive enhancement of both operational digital fluency and cognitive adaptability to technological evolution, thereby fostering the continuous development of employees' digital skills and digital mindsets.

### *6.4. Limitations and Future Research*

First, constrained by temporal limitations, this study adopted an online survey as the primary data collection method. Notwithstanding the implementation of quality control measures (such as time-based response validation and attention-check items), we cannot fully guarantee the quality of all responses. Future investigations can further improve the data collection methods, such as on-site completion, and expand the sample capacity to improve the data quality. Second, the QCA method is a case-oriented research method, which helps to discover richer research conclusions through more profound dialogues with the cases, and this study fails to combine the research cases for more detailed and in-depth analysis. Future investigations could consider collecting richer research data and engaging in a deeper dialog with the cases. Third, owing to the cross-sectional data used in this study, this study solely examined static relationships between antecedent conditions and employees' behavioral support for digital transformation. Future investigations could introduce time-series QCA methods to further interpret configuration change trajectories.

## 7. Conclusions

This study employs a mixed-methods research design that integrates content analysis, NCA, and fsQCA. We first identify the factors influencing employees' behavioral support for digital transformation and then develop the research model incorporating the identified antecedent conditions with the AMO framework. Subsequently, by employing fsQCA and NCA methods, we investigate the impact of antecedence-conditional coupling on the employees' behavioral support for digital transformation. Four equivalent configurations conducive to motivating employees' high behavioral support for digital transformation are identified. In addition, learning goal orientation and perceived usefulness play an important role in activating employees' change-supportive behavior. These findings provide managers with actionable strategies. Organizations should recognize the pivotal role of employees in digital transformation initiatives. By fostering employee support for digital transformation, organizations can effectively leverage this strategic change to drive sustainable development. Future research could conduct in-depth case studies to enrich the implications. In addition, the time-series QCA method can be introduced to further investigate configuration change trajectories.

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## Appendix A

Basic information regarding the participants in the semi-structured interviews is presented in the Table A1.

**Table A1.** Basic information of the interviewees.

| Code | Gender | Age | Education Background | Position | Region | Industry of Employment |
|---|---|---|---|---|---|---|
| S1 | Male | 29 | Undergraduate degree | Ordinary employee | Hubei Province | Information Transmission, Software, and Information Technology Services |
| S2 | Male | 26 | Undergraduate degree | Ordinary employee | Hubei Province | Education |
| S3 | Male | 24 | Undergraduate degree | Ordinary employee | Hebei Province | Information Transmission, Software, and Information Technology Services |

**Table A1.** *Cont.*

| Code | Gender | Age | Education Background | Position | Region | Industry of Employment |
|---|---|---|---|---|---|---|
| S4 | Male | 35 | Undergraduate degree | Low-level manager | Guangdong Province | Accommodation and Catering Services |
| S5 | Female | 30 | Undergraduate degree | Low-level manager | Shanxi Province | Production and Supply of Electricity, Heat, Gas, and Water |
| S6 | Female | 32 | Undergraduate degree | Ordinary employee | Guangdong Province | Manufacturing |
| S7 | Male | 26 | Undergraduate degree | Ordinary employee | Zhejiang Province | Manufacturing |
| S8 | Male | 24 | Undergraduate degree | Ordinary employee | Guangxi Province | Manufacturing |
| S9 | Female | 36 | Undergraduate degree | Ordinary employee | Shandong Province | Education |
| S10 | Female | 27 | Graduate degree | Ordinary employee | Henan Province | Culture, Sports, and Entertainment |
| S11 | Female | 22 | Undergraduate degree | Ordinary employee | Shanghai | Financial Sector |
| S12 | Male | 25 | Undergraduate degree | Ordinary employee | Shanghai | Transport, Storage, and Postal Services |
| S13 | Male | 26 | Undergraduate degree | Ordinary employee | Jiangsu Province | Manufacturing |
| S14 | Male | 26 | Undergraduate degree | Ordinary employee | Guangdong Province | Manufacturing |
| S15 | Male | 25 | Junior college | Ordinary employee | Zhejiang Province | Manufacturing |
| S16 | Female | 34 | Graduate degree | Ordinary employee | Jiangsu Province | Financial Sector |
| S17 | Male | 29 | Undergraduate degree | Ordinary employee | Guangdong Province | Construction |
| S18 | Female | 38 | Graduate degree | Middle-level manager | Shandong Province | Wholesale and Retail Trade |
| S19 | Female | 26 | Graduate degree | Ordinary employee | Shanghai | Information Transmission, Software, and Information Technology Services |

## Appendix B

The interview outline is shown in the Table A2.

**Table A2.** Interview outline.

| Code | Position |
|---|---|
| Interview instructions | Clarifying the concepts of digital transformation and behavioral support for digital transformation (presented by researchers). |
| Introductory questions | 1. Could you give us some basic information about your age, education background, position? |
| | 2. Could you provide an overview of the digital transformation initiatives currently being implemented within your corporate? |
| Core interview questions | 1. How would you evaluate the digital transformation of your corporate, and what are the reasons behind your assessment? |
| | 2. Do you agree with the digital transformation philosophy of your corporate? Why or why not? |
| | 3. Under what circumstances, or what factors, would lead you to support organizational change? |
| | 4. Have you observed colleagues demonstrating supportive behaviors toward the digital transformation? What do you believe are the reasons motivating their actions? |
| Closing remarks | Thank you very much for your responses. Based on your work experience and observations, do you have any additional insights or perspectives regarding behavioral support for digital transformation that you would like to share? |

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