Digital Organizational Culture: Concept and Scale Development

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Abstract **-** The research presented a multifaceted conceptualization of digital organizational culture (DOC) to address challenges from a divergent understanding of critical concept among strategic decision-makers. In this context, the existing definition of DOC remained fragmented and insufficient, despite numerous analyses emphasizing the significance of DOC in digital transformation. A new theoretical concept of DOC was developed using grounded theory, considering the evidence from an extensive literature review and synthesis. Data were collected from 345 founders or C-level executives of Indonesian manufacturing organizations with 100 employees. The coding analysis results show DOC as a higher order construct with four dimensions namely sensitive, competitive, united, and dynamic. The construct was used as the foundation in developing the conceptual definition of DOC. DOC scale was then developed to transform the DOC into a more practical variable. The results show that the formulation of a thorough conceptual definition of DOC introduced and validated a measurement scale for assessing the concept. While testing the nomological validity of the scale, this study also proves the relation among DOC and change leadership, and project effectiveness. Practitioners may benefit from the results, offering constructive awareness by clarifying the nature of DOC and opening new opportunities for further investigation and application.

Keywords: digital transformation, grounded theory, digital culture, definition, conceptual construct, scale development

I. INTRODUCTION

Digital transformation is the process of using technology to alter business goals, processes, and value generation drastically. The adoption of digital technology is crucial for survival and competitiveness in a rapidly changing world (McCarthy et al., 2023). In this context, organizations face intense pressure from ongoing digitalization, requiring deep, strategic transformations rather than superficial adjustments. Additionally, there is limited time for implementing significant changes to the overall strategy and culture.

A key prerequisite for successful transformation is cultivating a mindset that accepts change as the new organizational norm (Chatterjee et al., 2022). Despite widespread recognition, many organizations continue to struggle with effective digital transformation. Surveys also consistently show a low success rate among digital transformation initiatives. While estimates vary, previous research has shown that only 10% to 30% of digital transformation efforts are successfully implemented (Oh et al., 2022; Ramesh & Delen, 2021).

Several academics state that the current DOC has a direct impact on the performance of the digital transformation plan (Alakaş, 2024). However, organizations promoting this culture often fail to achieve successful transformation. This inconsistency raises important questions, namely, 1) To what extent is the concept of DOC understood? 2) What are

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the effects of organizational practices on outdated, pre-digital assumptions in the context of digital transformation? and 3) How do leadership capabilities affect the implementation and evolution of DOC?

Adapting to a digital world may not create meaningful value for organizations despite the need is recognized (Porfírio et al., 2024). Therefore, the cultural dimensions evolving with technological advancements must be clarified in investigating the effective management of digital transformation. Culture has a significant impact on the presentation of opportunities and difficulties (Wang & Zhang, 2025). In this context, cultural change is critical to digital transformation, providing detailed insights into the specific values and characteristics facilitating the process. DOC remains underexplored (Pfaff et al., 2023) due to limited understanding of the idea and consequences (Leal-Rodríguez et al., 2023).

Understanding the evolution of organizational culture to support digital transformation is crucial for developing practical strategies and frameworks. The absence of a shared understanding among key stakeholders can hinder problem-solving and strategic balance. For instance, consensus on priorities and actions becomes difficult when half of a senior team views DOC as a digital mindset and internal collaboration while others define the concept as enhancing learning and digital capabilities. Therefore, progress in this field requires a unified conceptual foundation for DOC. To address the need, this research synthesized current knowledge and offered a clear, comprehensive conceptual definition of DOC. A scale of measurement was also established to evaluate DOC in the context of digital transformation.

Digital transformation is the process of using technology to significantly enhance an organization's scope or productivity (Zhai et al., 2022). According to Bresciani et al. (2021), digital transformation is an evolutionary process that uses tools and technology capabilities to change customer experiences, business models, and operational processes. Furthermore, Zhang and Chen (2024) consider the term to be a strategic change to the business strategy designed to capitalize on opportunities developed through the onset of the digital age.

Vial (2019) analyzes 282 research studies and proposes a widely accepted conceptual definition to reconcile the varied interpretations. Digital transformation is defined as the integration of information, computational, communication, and connectivity technologies to improve organizational performance, resulting in significant changes in organizational characteristics. The definition provides valuable clarity by specifying key components, namely, the objective of the process, the mechanism of change, and the types of technology. The detailed structure and conceptual clarity serve as the foundational framework for developing the conceptual definition of DOC.

Organizational culture is the most important factor influencing the overall effectiveness (Naveed et al., 2022). Moreover, organizational culture forms the core identity of organizations and plays an indispensable role in achieving operational success (Azeem et al., 2021). This variable functions as a strategic asset and a unifying force binding employees and enhancing a sense of belonging and shared purpose (Demissie & Egziabher, 2022). According to established perspectives, organizational culture serves as a guiding framework, shaping the understanding of appropriate behaviors and providing direction for conducting responsibilities (Kim & Jung, 2022).

The proposition of Schein (1990) has been widely adopted and adapted in subsequent research. Schein defines organizational culture as a set of fundamental assumptions developed or discovered by a group as it learns to cope with problems of external adaptation and internal integration, which are proven to be effective and valid. Therefore, organizational culture is passed on to new members as the correct method to perceive, think, and feel about issues relevant to the organization.

Change Leadership (CL) – Significant adjustments to the organizational environment and structure are frequently required for digital transformation. Enhancing the capacity to recognize, assess, and successfully use ICT-related innovation potential is the main problem facing change leaders. This allows for quick adaptability to changing market demands (Parluhutan & Moeins, 2024). Organizational leadership must understand the importance of executing change quickly and smoothly (Allam et al., 2024). In a competitive environment, organizations must adapt quickly to remain relevant, despite the fact resistance to change is deeply rooted in human nature. Most employees can be motivated to accept change and become highly committed and adaptable workers when a clear purpose and direction are perceived behind the transformation.

The successful introduction and sustainability of change depend on competent leadership (Musaigwa, 2023). A key aspect of change leadership is the ability to envision the future state of organizations after the transformation, describing the perception of events after the implementation. Change leadership shows the significance of incorporating others in the process to improve comprehension and sense of ownership over the change endeavor and increase motivation to support and propel the transformation (Aflaki & Lindh, 2023).

Project Effectiveness (PE) – The two primary metrics commonly used to evaluate the success of new product development (NPD) initiatives are effectiveness and efficiency (Idrees et al., 2023). Effectiveness refers to the technical excellence of the developed product and the financial performance (Li et al., 2023). Although the definitions may vary depending on the conceptualization, most recent interpretations are consistent with the criteria used to assess the performance of organizations against predefined goals (Manoharan et al., 2023). Therefore, a project is considered effective when the concept successfully meets or exceeds the expectations set at

the outset. The understanding of effectiveness serves as a key indicator for evaluating digital transformation initiatives guided by organizational culture and supported by strong change leadership.

Relationships among DOC, CL, and PE – Testing nomological validity is a crucial step in validating the measurement scale for DOC. According to Hair Jr et al. (2019), nomological validity is the degree to which a measurement tool has theoretically significant correlations with other constructs. In this research, the focus was on examining the prediction of the proposed DOC scale related to the theoretical construct within the research model. The promotion of cultural change requires strong leadership (Bagga et al., 2023; Engida et al., 2022). Furthermore, the idea of change leadership possessing a major impact on project effectiveness is supported by empirical data (PE) (Lukito et al., 2023; Wang et al., 2024). However, project effectiveness has been reported as an outcome influenced by a strong DOC (Fahmi et al., 2023; Mollah et al., 2024). These theoretical and empirical underpinnings serve as the basis for formulating the following hypotheses to guide the development and validation of the DOC measurement scale:

H1: CL is positively related to DOC development.

H2: CL is positively related to PE.

H3: DOC is positively related to PE.

Structural Equation Modeling (SEM) is used to test the predictions and evaluate the interaction of the three constructs. The results provide support for three hypotheses since change leadership contributed to the development of a strong digital culture and improved project outcomes. Additionally, the direct relationship between DOC and PE confirme the predictive power of the newly developed measurement scale.

The nomological validity of the DOC construct is supported by the SEM analysis since the suggested model matches the data. The measurement scale effectively conveys the desired idea and may be dependably applied in upcoming research projects examining the dynamics of leadership, performance outcomes, and digital transformation.

II. METHODS

The research applies a manifestation-centric method of organizational culture to answer the research question, "What is DOC?" Organizational culture is fundamentally shaped by members' shared values regarding desire and appropriateness (Assoratgoon & Kantabutra, 2023). Kharlamov and Pogrebna (2021) argue that a values-based method is particularly effective for analyzing culture in digital environments. Based on the description, the current research used a normative method to define and propose an ideal model of DOC, identifying key cultural norms, observable artifacts, and underlying assumptions supporting successful digital transformation.

The research follows and adopts the methodology proposed by Vial (2019) for developing a conceptual definition of digital transformation. The recommendations by Wolfswinkel et al. (2013) are used to conduct a thorough literature review with grounded theory. The five steps in this method are define, search, select, analyze, and present. Precise parameters are set for the literature search during the define step, and the focus was on digital culture within organizations subjected to transformation. Only peer-reviewed works are included, and the selection of the Scopus database's broad coverage of academic articles. The initial search yielded 217 articles, and after removing duplicates, 196 remained.

In the search phase, the retrieved articles are accessible through Scopus, open-access journals, or subscription-based platforms. However, only 167 articles are successfully obtained, resulting in an 84% retrieval rate. During the select phase, 167 articles are retrieved through open coding, but only 80 are relevant to the research. As expected during the design of List 4, an additional 13 articles are added for review, bringing the final sample to 93 works. From these, 56 are used to develop the conceptual definition of DOC, and 76 are contributed to the development of its conceptual construct.

In the Analyze phase, open coding identifies 81 terms that are considered to be elements of a culture supporting digital transformation. These are grouped into broader categories based on shared meanings or functions through axial coding, resulting in 17 categories, namely Internal Collaboration, Customer Centricity, Involvement, Velocity, Digital Driven, Agility, Data-Driven, Determination, Delegation, Innovation, Flexibility, External Collaboration, Risk-Taking, Entrepreneurship, Adaptability, Knowledge Development, and Willingness to Change.

Selective coding is applied to integrate and refine the 17 categories into four overarching dimensions, namely Sensitive, Competitive, United, and Dynamic. In grounded theory, a major category refers to one or more specific issues directly addressed by the research (Wolfswinkel et al., 2013). Selective coding helps identify these four major categories, forming the foundation of the proposed conceptual framework for DOC.

The Scale Development process followed the methodology outlined by Ruvio and Shoham (2016), consisting of three stages.

Stage 1: Item Generation, Evaluation, and Revisions. The DOC structures from the literature review serve as the foundation for the initial questionnaire items. Each indicator is represented by multiple statements to enhance clarity and comprehension. Specialists in human resource management and experienced entrepreneurs in the manufacturing sector provide expert feedback on the draft instrument. Based on the suggestions, the questionnaire is revised (see APPENDIX A). Subsequently, 30 entrepreneurs across various

industries and organizations completed the revised survey. The feedback lead to further refinements, including the removal of unclear or redundant items.

Stage 2: Item Purification. The first survey round is carried out to gather data for exploratory factor analysis (EFA). The ability of items to build coherent factors in line with the suggested conceptual construct isassessed using EFA.

Stage 3: Confirmatory Analysis and Validation (CFA). CFA is used to validate the measurement model using the data gathered from a second survey. Construct, convergent, discriminant, and nomological validity were also examined at this level.

The expected respondents are the founders or C-levels of large manufacturing organizations in Indonesia with 100 employees. The exclusion of organizations with digital transformation projects completed over three years ago is mandated to maintain the integrity of the data. The snowball sampling method is used due to the difficulty in obtaining respondents meeting the requirements. The questionnaire applies 10-point Likert scales (1 – strongly disagree to 10 – strongly agree) to accommodate the familiarity of Indonesian respondents to the 10-point measurement system.

The 7-item scale developed by Herold et al. (2008) is used to measure Change Leadership. The items include statements such as "develop a clear vision for what is to be achieved," "build broad coalitions from the start to support change," and "give individual attention to those who encounter problems implementing change." NPD Project Effectiveness is measured using a 4-item scale used by Brettel et al. (2011). The four items used in this scale are ROI, Break-even Point, Revenue, and Market Share.

DOC is measured using the 27 items within the four dimensions developed in this research. The items in the sensitive dimensions included statements such as "digital technology can be used to develop many solutions" and "decision making is always based on data analytics results." The items in Competitive dimensions comprise statements, including "solutions are sought using diverse points of view" and "failure is considered an acceptable part of the new solution development process." The items in United dimensions comprise statements such as "everyone shows commitment to the success of the digitization project" and "cross-functional working groups are formed to solve specific tasks." The items in Dynamic dimensions include "changes in customer demand can be met immediately" and "everyone is ready to change to a new way of working."

III. RESULTS AND DISCUSSIONS

A total of 76 reviewed works are subjected to coding analysis. The four main categories representing DOC through selective coding are Sensitive, Competitive, United, and Dynamic.

Sensitive includes customer centricity, data-driven, delegation, and digital-driven, reflecting increased responsiveness to market, environmental, and technological changes. Competitive comprises Entrepreneurial attitude, risk-taking, external collaboration, and innovation, enhancing the competitive positioning of the organization. Furthermore, United captures internal collaboration, knowledge development, determination, and participation, indicating strong internal cohesion and collective effort. dynamic represents willingness to change, flexibility, velocity, adaptability, and agility, reporting responsiveness and adaptability in a fast-changing environment. Based on the result, a conceptual construct is proposed for DOC as shown in Figure 1.

Retrieving extant definitions for DOC is not

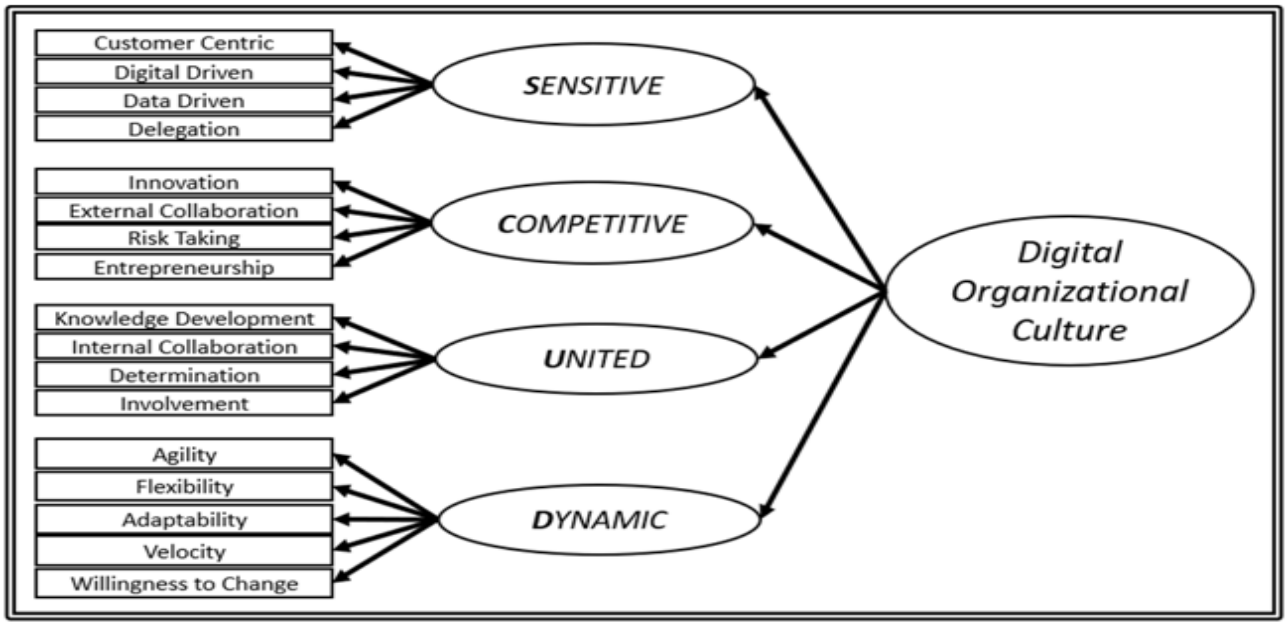

Figure 1 Conceptual Construct of DOC

an easy task. Several research studies discuss digital transformation and mention digital or organizational culture without providing clarity on their meanings. Limited research explicitly states that a sentence or a phrase is a definition of DOC. Therefore, the search for existing definitions of DOC is broadened to include explicitly stated definitions and implied definitions. A total of 64 extant definitions are retrieved from only 56 works, and some research gives more than one implied definition. The conceptual clarity of the definitions is examined for developing conceptual definitions. The guidelines provided by Wacker (2004) and Suddaby (2010) are enumerated by Vial (2019). The biggest obstacles to having a precise and understandable conceptual definition of DOC are the ambiguous terminology.

Based on these results, the decision to use semantic analysis is to construct a precise and widely accepted definition of DOC. Existing definitions are methodically broken down into a sequence of constituting primitives using semantic decomposition to determine the fundamental characteristics of DOC (Akmajian et al., 2010). In establishing the definition, consideration is also given to the conceptual construct. Following the process, a conceptual definition of DOC is proposed as a change-sensitive, continuously evolving, and deliberately shaped set of shared assumptions, values, and artifacts that help organizations drive major change through information, computing, communication, and connectivity technologies—enabling social legitimization for members to realign behaviors and activities toward a stronger competitive position.

The definition of DOC presents several key points crucial for conceptual clarity. First, the concept is inherently situated within an organizational context. Second, DOC constitutes an integral component of organizational culture. This perspective is consistent with Schein's (1990) assertion that organizational culture is a set of shared assumptions, values, and artifacts. Third, the culture is characterized by a dynamic nature, necessitating continuous adjustment and intentional imprinting. Fourth, social legitimation is provided for a diverse range of actions and behaviors. Fifth, the culture is designed to facilitate the attainment of a significantly enhanced competitive position. Finally, the methods for achieving this competitive advantage involve the strategic utilization of digital technology, as defined by Bharadwaj et al. (2013) as combinations of computing, information, connectivity, and communication technology.

A total of 162 participants answer the survey in Stage 2. A screening procedure is carried out to remove univariate outliers and incomplete data. Additionally, data with a zero standard deviation value are eliminated before examining homoscedasticity. The Pearson ($p = 0.516$) and the Spearman correlation test ($p = 0.247$) in Stage 2 show insignificant probability values.

A total of 122 data points are suitable for further investigation after filtering. Men completed 80.3% of the responses, while women filled out 19.7%. Individuals aged 41 to 60 made up the majority (77.05%) of the responses. Manufacturers are dispersed throughout 16 Indonesian provinces, providing the data. The products produced by these organizations are diverse and fall into 23 distinct product categories.

The data analysis reports the significance of Bartlett's test of sphericity. A statistical metric known as the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO-MSA) is used in EFA to evaluate the suitability of data for factor analysis. Based on the analysis, the overall KMO-MSA is 0.915, and individual KMO-MSA is greater than 0.5 (>0.5). According to the test, the data set satisfies EFA presumptions. SV6 (0.355) and CV2 (0.393) have loading factors less than 0.50 and are not practically significant. CV2 and SV6 are removed, and the loading factor for DN5 is 0.504. DN5 is in a different factor group from other indicators, despite being bigger than 0.5. A factor is removed from the analysis when the concept comprises fewer than three elements exceeding a value of 0.4 (Wood et al., 2014). DN5 is eliminated as a single item in a factor group and can not be used in further processes.

In stage 3, there are 183 responses, and similar data screening is performed. Insignificant probability values are indicated by the Pearson ($p = 0.103$) and the Spearman correlation tests ($p = 0.167$). The results also show evidence of homoscedasticity, and a total of 142 data points are usable for additional procedures following the data screening. A total of 21.83% of the respondents are women, while 78.17% are men. Most of the respondents (78.87%) are aged between 41 and 60, with responses collected from manufacturing organizations across 12 provinces. Additionally, the products are diverse within 28 product categories. DN5 (0.408), SV6 (0.365), and CV2 (0.437) items have loading factors less than 0.5 when EFA is used. Furthermore, the same items are removed in Stage 2. The Stage 3 EFA results validated the removal of these three components. The results of Harman's single-factor test report the absence of common method bias and variance in the data.

Cronbach's Alpha is calculated for SV (0.917), CV (0.913), PE (0.908), UT (0.879), CL (0.967), and DN (0.913), showing good reliability. The four-factor construct of DOC, NPD Project Effectiveness (PE), and Change Leadership (CL) exhibits a positive and substantial relationship ($p < 0.01$), as indicated by the Pearson correlation. On the DOC scale, this condition offered preliminary support for predictive and criterion-related validity. The smallest estimated loading of all first-order constructs is 0.661 since the >0.5 requirement is met. Every second-order path's projected loading is greater than the minimum threshold of 0.5. With a critical ratio of all pathways > 1.96 ($p < 0.001$), the results report substantial paths. The Goodness of Fit index for the model shows a strong fit, namely normed $\chi 2$ (1.141), RMSEA (0.031), p (0.012), CFI (0.981), DF (550), and $\chi 2$ (627.496).

The AVE of the indicated construct is CV(0.683), SV(0.687), UT(0.607), CL(0.817), PE(0.724), and

DN(0.552). All first-level construct AVE values higher than 0.5 show sufficient convergence. The Construct Reliability values of the variables were CV (0.915), PE (0.912), UT (0.884), SV (0.917), DN (0.917), and CL (0.969). All Construct Reliability values of the first-level construct were higher than 0.7 since the measures of each factor are all consistent with the same latent variable. The AVE and Construct Reliability values provide evidence of convergent validity. The square of the calculated correlation between the two is less than the AVE of all first-order construct. In this instance, the conditions are satisfied and discriminant validity on the DOC first-level construct is demonstrated with complementary variables CL and PE.

A SEM model is created to evaluate nomological validity. The association between DOC and the independent construct CL, as well as DOC and CL as predictors of PE, is assessed using the SEM model (Figure 2). The retrieved data ($p = 0.005$; $df = 550$; $\chi2 = 640.178$; normed $\chi2 = 1.164$; RMSEA = 0.034; CFI = 0.976) show a good fit with the model. A positive correlation (0.611) between DOC and CL is reported, confirming H1. The favorable connection between CL and PE supported H2. Lastly, a positive correlation exist between DOC and PE (0.432), supporting H3. All critical ratios are bigger than 1.96 with a significance level below 0.01. The conclusions of this research validate the validity of DOC and enhance the singularity within the nomological model. The results show that the DOC measurement scale is suitable and can be applied to further research. Some quantitative research are reported using DOC as a variable (Proksch et al., 2024). A measurement scale for DOC has also been developed in this research. The data collected is used to validate the scale, and the measurement scale is valid.

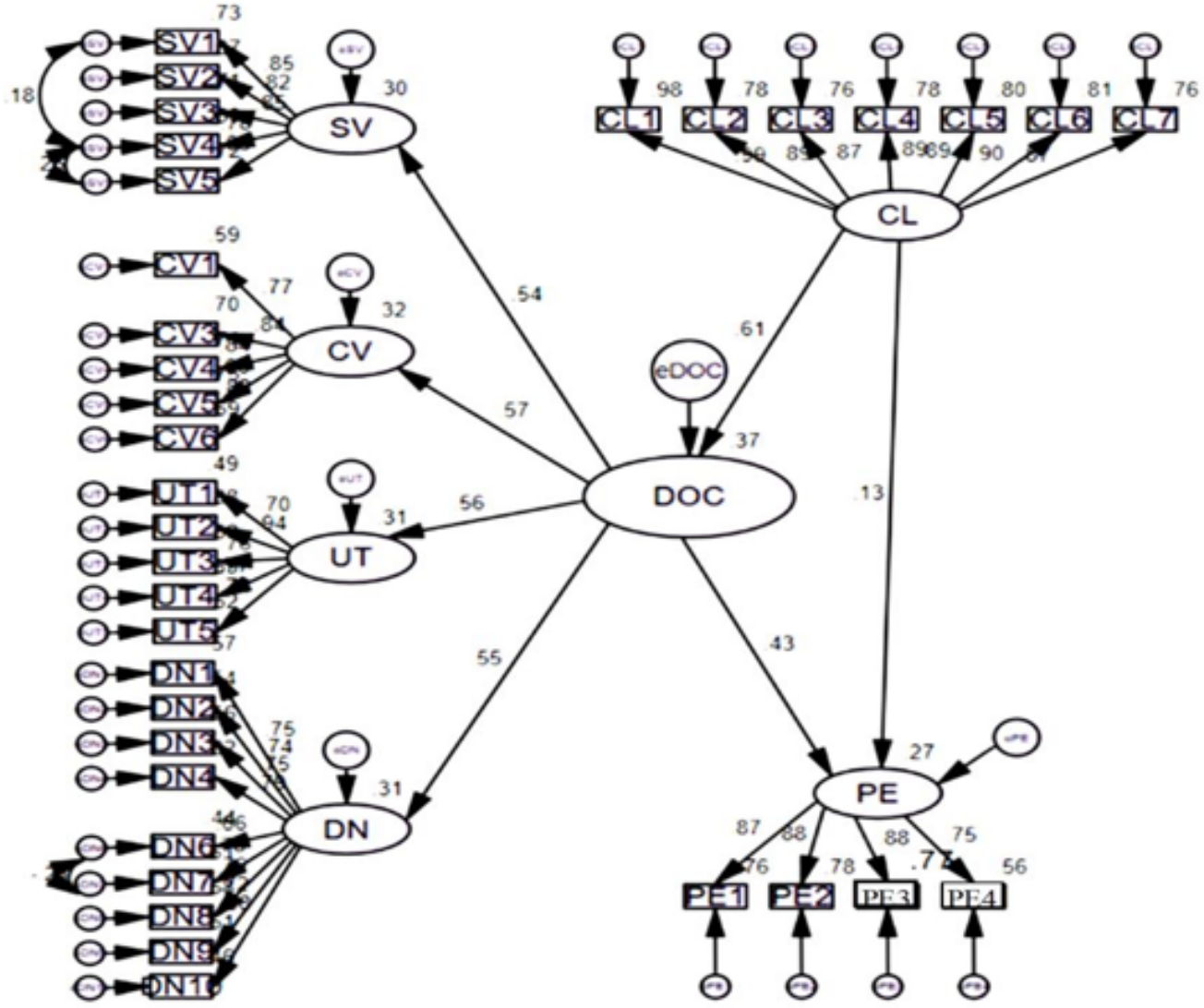

Figure 2 SEM Model for Testing Nomological Validity (estimates table in Appendix B)
(SV: Sensitive Dimensions; CV: Competitive Dimensions; UT: United Dimensions; DN: Dynamic Dimension; CL: Change Leadership; PE: Project Effectiveness)

IV. CONCLUSIONS

In conclusion, a more thorough and organized understanding of DOC is attained through a methodical literature review and coding analysis. The complex nature of DOC is distilled into a higher-order conceptual framework composed of four key dimensions, namely Sensitive, Competitive, United, and Dynamic. The dimensions collectively enhance the comprehension of DOC. This research advances scholarly discussion and real-world implementation by providing a thorough and precise conceptual description of DOC. A validated measurement scale is also introduced, which enables practitioners to assess and develop DOC within organizations subjected to digital transformation. The proposed definition establishes a shared understanding of the concept, which is essential for meaningful discussions and strategic formulation around digital transformation. Practitioners can use the scale to evaluate current levels of digital culture and identify areas for improvement. New opportunities are opened for investigating the antecedents and outcomes of DOC, particularly in relation to leadership, innovation, and performance.

The research acknowledges certain limitations and does not examine the particular capabilities required to promote employee balance. The negligence of capabilities may hinder the successful implementation of the recommendations. Future research should explore the interaction of employee engagement, performance metrics, and leadership practices with digital culture to influence transformation success. The analysis of organizational learning, change readiness, and digital literacy in shaping DOC needs to improve both theory and practice.

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APPENDIX A: Questionnaire Items

A1. Digital Organizational Culture

Item	Indicator	Statements
Sensitive Dimension (SV)		
SV1	Customer Centric	Changes in customer behavior influenced by digital technology can be identified quickly.
SV2		Changes in customer behavior influenced by digital technology can be anticipated quickly.
SV3	Digital Driven	Digital technology can be used to develop many solutions.
SV4	Data Driven	Decision-making is based on the results of data analytics.
SV5	Delegation	The decision-making authority is distributed based on the structure of the organization.
SV6*		There is clarity regarding the decision-making authority for each position.
Competitive Dimension (CV)		
CV1	Innovation	Solutions are sought using diverse points of view.
CV2*	External Collaboration	Digital technology is used to improve the quality of collaboration with external parties.
CV3		Collaboration with external parties is further enhanced.
CV4	Risk Taking	Failure is considered an acceptable result in the development of new solutions.
CV5	Entrepreneurial Attitude	Digital technology is used to seize business opportunities.
CV6		Digital technology is used to develop new products offered to the market.
United Dimension (UT)		
UT1	Knowledge Development	People share digital knowledge.
UT2		Every individual shows a sense of belonging to the technology implementation project for new product development.
UT3	Internal Collaboration	Cross-functional working groups are formed to accomplish specific tasks.
UT4	Determination	Every individual shows commitment to the success of the digitalization project.
UT5	Involvement	Every individual wants to be included in the implementation of the new technology.
Dynamic Dimension (DN)		
DN1	Agility	Digitalization projects are designed to be completed in a relatively short time, less than 4 months.
DN2	Flexibility	Changes in customer demand can be met immediately.
DN3		Digital technology is used to develop products for customers' specific demands.
DN4		Digital technology is used to develop services for the specific demands of customers.
DN5*	Adaptability	The approaching changes are predictable.
DN6		Everyone can quickly adjust to new conditions.
DN7	Velocity	Digital technology accelerated the decision-making process.
DN8		Digital technology accelerated the innovation process.
DN9	Willingness to Change	Every individual is ready to change to a new method of working.
DN10		Every individual is willing to adopt the new digital technology.

* Eliminated items

A2. Change Leadership

Item	Statements
	The change leaders in organizations
CL1	develop a clear vision for what is to be achieved.
CL2	Explain why change is needed.
CL3	Every individual understands the urgency of changes before implementation begins.
CL4	Build a broad coalition from the start to support change.
CL5	Build a broad coalition from the start to support change.
CL6	Monitor and communicate progress in the implementation of change carefully.
CL7	Give individual attention to individuals encountering problems in the implementation of change.

Source: Herold et al. (2008)

A3. NPD Project Effectiveness

Item	Statements
	How well did the results of the digital transformation project achieve the original objectives concerning the following?
PE1	Profit / ROI
PE2	Break Even Point
PE3	Increased revenue
PE4	Increased market share

Source: Brettel et al. (2011)

APPENDIX B: Estimates Table for Figure 2

			Unstandardized Estimate	Standardized Estimate	S.E.	C.R.	P
SV1	<---	SV	1	0.855			
SV2	<---	SV	0.964	0.823	0.080	12.064	***
SV3	<---	SV	0.984	0.839	0.079	12.382	***
SV4	<---	SV	0.953	0.778	0.094	10.161	***
SV5	<---	SV	1.008	0.848	0.079	12.795	***
CV1	<---	CV	0.974	0.767	0.090	10.770	***
CV3	<---	CV	0.862	0.830	0.072	11.981	***
CV4	<---	CV	1.027	0.832	0.085	12.109	***
CV5	<---	CV	0.921	0.867	0.071	12.916	***
CV6	<---	CV	1	0.834			
UT1	<---	UT	0.929	0.700	0.112	8.272	***
UT2	<---	UT	1.124	0.932	0.104	10.841	***
UT3	<---	UT	1.089	0.754	0.123	8.875	***
UT4	<---	UT	1.119	0.765	0.122	9.136	***
UT5	<---	UT	1	0.724			
DN1	<---	DN	1.191	0.764	0.146	8.164	***
DN2	<---	DN	1.065	0.736	0.137	7.800	***
DN3	<---	DN	1.075	0.764	0.132	8.169	***
DN4	<---	DN	1.156	0.796	0.136	8.486	***
DN6	<---	DN	1	0.661			
DN7	<---	DN	1.165	0.786	0.151	7.737	***
DN8	<---	DN	1.109	0.777	0.135	8.223	***
DN9	<---	DN	1.049	0.706	0.139	7.565	***
DN10	<---	DN	0.995	0.683	0.135	7.349	***
SV	<---	DOC	1	0.553			
CV	<---	DOC	0.974	0.586	0.237	4.099	***
UT	<---	DOC	0.720	0.551	0.183	3.946	***
DN	<---	DOC	0.713	0.539	0.187	3.820	***
CL1	<---	CL	1	0.993			
CL2	<---	CL	0.913	0.883	0.042	21.963	***
CL3	<---	CL	0.916	0.879	0.042	21.651	***
CL4	<---	CL	0.917	0.887	0.041	22.398	***
CL5	<---	CL	0.933	0.898	0.039	23.790	***
CL6	<---	CL	0.987	0.903	0.040	24.398	***
CL7	<---	CL	0.947	0.877	0.044	21.304	***
PE1	<---	PE	1	0.872			
PE2	<---	PE	1.057	0.888	0.073	14.423	***
PE3	<---	PE	0.951	0.883	0.066	14.428	***
PE4	<---	PE	0.720	0.752	0.065	11.033	***