



THE ROLE OF TRANSFORMATIONAL LEADERS AS BRIDGE BETWEEN TECHNOLOGY POLICY AND CULTURE INTERNALIZATION

Mochamad Irfan

Universitas Mayjen Sungkono Mojokerto

correspondence: irfanmoc@gmail.com

Abstract

This study examines how transformational leadership functions as a synergy mechanism between technology adoption and organizational culture development. Transformational leaders become role models in technology use through idealized influence, articulate inspiring visions through inspirational motivation, encourage innovation in technology utilization through intellectual stimulation, and provide tailored support through individualized consideration. They bridge managerial technology policies and operational front line realities through effective two way communication. Employee empowerment in technology decisions accelerates value internalization through heightened ownership feelings. Flexible change management with attention to emotional aspects outperforms rigid procedural approaches. Transformational leadership success depends on aligned HRM systems and leadership capacity development across all organizational levels. Sustainable synergy between technology and organizational culture requires transformational leadership distributed as collective organizational capacity rather than concentrated in few charismatic individuals.

Keywords: transformational leadership, technology adoption, organizational culture, synergy, change management

Introduction

The rapidly occurring technological changes have forced organizations in various sectors to adapt or face the risk of falling behind competitors. Process automation, artificial intelligence, and digital collaboration platforms are changing the way employees carry out their daily tasks. Companies that successfully adopt new technologies often experience significant increases in efficiency and competitiveness. However, the success of technology adoption is not solely determined by the quality of the hardware or software used. Human factors and organizational culture are often the main determinants of whether technology investments yield the expected benefits. In supporting this, technology plays a crucial role in human resource development for organizational sustainability through digital innovation (Mardikaningsih & Wardoyo, 2024). Employees accustomed to old ways of working may be resistant to the changes brought by new technology (Sandblad & Lind, 2019). They might use the new system half-heartedly or even find ways to avoid it. This resistance can derail entire digital transformation initiatives even if the technology implemented is the best in its class. Organizational leaders face the challenge of not only deciding what technology to adopt but also how to make employees accept and internalize that technology. Effective leadership becomes a key factor in bridging the gap between managerial policies on technology adoption and the reality of acceptance at the operational level.

Transformational leadership emerges as the most relevant leadership style to face the challenges of technological change because of its characteristics oriented toward change and employee empowerment (Dupont & Clercq, 2024). Digitally oriented leadership is needed to build effective organizational transformation by prioritizing operational efficiency and team collaboration (Darmawan & Gardi, 2024). Transformational leaders motivate their followers to transcend self-interest for the collective interest of the organization. They articulate a clear vision of the future and inspire subordinates to contribute to realizing that vision. Furthermore, transformational leadership acts as an agent of social change capable of directing organizational value systems to be more responsive to technological advancements (Rojak et al., 2022). In the context of technology adoption, transformational leaders are able to explain why new

technology is needed and how that technology will bring benefits to both the organization and individual employees. They also provide individual attention to employees who experience difficulties in adapting to new technology. Transformational leaders do not just order subordinates to use the new system but also engage directly in the shared learning process. Their presence on the production floor or in the workspace helps reduce employee anxiety toward unfamiliar technology. Transformational leaders also create a psychologically safe environment where employees are not afraid of making mistakes during the learning process. Mistakes are viewed as a normal part of learning, not as a failure worthy of punishment. This condition is crucial because technology adoption is almost always accompanied by a learning curve where initial mistakes are unavoidable.

Organizational culture is a system of values, beliefs, and assumptions held in common by members of an organization and influences their behavior. A strong culture can be an asset or a liability depending on the extent to which it aligns with the organization's strategic needs. A culture that strongly emphasizes formal procedures and rigid hierarchies tends to hinder the adoption of new technology that requires flexibility and experimentation (Sharify, 2024). The ambidextrous leadership approach is now a collective solution that balances exploitation through digital transformation and exploration for long-term organizational growth (Irfan & Darmawan, 2024). Conversely, a culture that values innovation, collaboration, and continuous learning will accelerate the internalization of new technology. Changing organizational culture is a slow process because it involves deeply rooted values that are often unconscious to organizational members. Employees may not be able to explain why they do things a certain way other than saying that it has always been done that way. Transformational leaders play a role in changing cultural assumptions that are no longer in line with the demands of new technology. They use various mechanisms such as symbolic communication, resource allocation, and reward giving to reinforce the desired new values. Over time, these new values will be internalized into habits performed automatically without the need for orders from superiors. This process of internalization distinguishes temporary change from sustainable cultural change.

The main challenge in synergizing technology and organizational culture is that technology is often introduced by top management without

an adequate understanding of cultural realities at the frontline level. Project teams consisting of external consultants and IT staff might design a system that is technically perfect but does not consider how the system will be received by end users. The mismatch between system design and established work habits causes passive resistance where employees use the system only as necessary (Xiao, 2017). Therefore, a systematic approach in risk management is very important to increase the success of information technology projects in dynamic business environments (da Silva et al., 2022). They fill in the requested data but do not utilize advanced features that could actually increase productivity. Investments of millions of rupiah for new systems become in vain due to shallow adoption. Transformational leaders act as bridges by being directly involved in the system design and implementation process. They ensure that the voices of frontline employees are heard in the design process. They also communicate to top management about cultural barriers that might hinder system adoption. This mediation role is crucial because both parties often speak different languages. Top management talks about return on investment and process efficiency, while frontline employees care about ease of use and whether the new system will add to their workload. Transformational leaders are able to translate the needs of both parties and find solutions acceptable to all.

Internalizing the development of organizational culture at the operational level requires consistency between what leaders say and what they do every day (Ertosun & Adiguzel, 2018). In dealing with complex situations, the application of situational leadership strategies is very effective for improving change management and team performance (Mardikaningsih & Darmawan, 2022). Employees are very sensitive to discrepancies between a leader's words and actions. A leader who talks about the importance of innovation but punishes employees who try new approaches will send confusing signals. Employees will conclude that what is truly valued by the organization is adherence to existing procedures, not innovation. Transformational leaders demonstrate their commitment to technological change through concrete actions. They use the new system themselves before asking subordinates to use it. They openly admit when they make mistakes in using the new system and show that mistakes are a normal part of the learning process. They allocate budget for continuous

training and provide enough time for employees to learn without the pressure of short-term production targets. These actions send a consistent signal that technological change is an organizational strategic priority. This consistency between words and actions is what builds a leader's credibility in the eyes of subordinates. Without credibility, any effort to change organizational culture will meet with failure because employees do not believe that the leader is truly committed to change.

The first problem in synergizing technology and organizational culture is the gap between the speed of technological change and the speed of cultural change. Technology can change in a matter of months, while organizational culture requires years to change significantly. Companies adopting new enterprise resource planning systems may require two to three years before employees truly use them optimally. By the time the system begins to be internalized, newer technology is already available and the organization must start the adoption cycle again. This temporal gap creates a situation where the organization is always in a state of transition without ever reaching stability. Employees experience change fatigue because they must constantly adapt to new systems (Taulli, 2023). Transformational leaders face the challenge of managing these differing speeds of change without sacrificing employee morale. They need to prioritize which technologies are most critical to adopt and clearly communicate the reasons behind those priorities. They also need to build organizational adaptation capacity so that change is no longer perceived as a burden but as a normal routine. This adaptation capacity itself is a cultural element that must be developed through continuous practice and reinforcement. Organizations with high adaptation capacity will view technological change as an opportunity rather than a threat.

The second problem relates to the distribution of decision-making authority regarding technology, which is often too centralized in top management. Decisions about which systems to adopt, how the implementation process is conducted, and what metrics are used to measure success are usually determined by executive committees. Frontline employees who interact with the system every day are only involved at the final stage, namely user training. As a result, the resulting systems are often incompatible with daily operational needs. The implementation of cross-functional design and training is one practical

solution to improve team collaboration in using new systems (Fared & Darmawan, 2021). Employees find useless features and lack the features they actually need. They develop alternative solutions outside the official system, such as using spreadsheets or instant messaging applications to collaborate. These shadow IT solutions create data security risks and information inconsistency. Furthermore, it is important to mitigate the risks of algorithmic bias and automated fairness in the implementation of artificial intelligence for positive social transformation (Mardikaningsih & Oluwatoyin, 2023). Transformational leaders strive to distribute decision-making authority regarding technology to lower levels without losing overall coordination (Eseryel, 2024). They form cross-functional teams that include representatives from various levels of the organization in the system selection and design process. These teams are empowered to make decisions about system configuration as long as they remain within the established strategic corridors. This participatory approach increases employee ownership of the new system and reduces resistance during implementation.

The pandemic forced organizations to adopt remote work technology in a very short time without adequate cultural preparation. Many companies succeeded technically in implementing digital collaboration infrastructure but failed culturally because employees were not accustomed to working without direct supervision (Verma, 2024). Productivity declined, communication became ineffective, and job satisfaction plummeted because employees felt they had lost their connection with colleagues and the organization. This experience shows that technology alone is not enough; what is needed is a cultural change that supports new ways of working. Transformational leaders hold the key to the success of this change because they are able to inspire and empower subordinates in conditions of uncertainty. A systematic literature review is needed to identify specific leadership practices that are most effective in various situations. The results of this review will help organizations prepare their leaders to face the next wave of digital transformation. Without a good understanding of the relationship between leadership, technology, and culture, technology investments will continue to yield disappointing returns.

The objective of this study is to explain the specific mechanisms through which transformational leadership bridges the gap between managerial technology policies and cultural internalization at the frontline level. This explanation includes the identification of the most critical leadership behaviors in that synergy process. This study also aims to map the conditions that facilitate or hinder the effectiveness of transformational leadership within the context of technological change. The theoretical contribution of this study is the enrichment of leadership and change management literature by integrating technological and cultural perspectives. Its practical contribution is a framework for management practitioners to develop transformational leadership capacity within their organizations.

Method

This study is designed as a qualitative library research with the aim of exploring how transformational leadership is able to unite technology and culture within organizations. Literature-based research serves as an effort to summarize existing knowledge from various written sources, differing from research that relies on collecting primary data from the field (Hameed, 2023). Because the topics of transformational leadership, technological application, and organizational culture have been extensively studied within the disciplines of management, industrial psychology, and organizational studies, this approach is deemed highly appropriate. Literature studies in social research allow for the identification of patterns in the relationships between variables that remain relatively stable even when conducted in different organizational environments (Okoli, 2015). Through this method, researchers can draw conclusions about universal principles that explain the link between leadership style and the success of technological change initiatives. The analyzed source materials include leadership textbooks, journal articles on change management, research reports from management consulting firms, and digital transformation case studies from various companies. The analysis procedure takes place in three systematic stages: document collection using relevant keywords, data filtering based on criteria of recency and source reputation, and the presentation of synthesis results in the form of a logical and coherent argumentative narrative. Library

research has weaknesses because it depends heavily on the availability of sources that may contain certain perspective biases (Hernon, 2016). To balance these weaknesses, this study utilizes sources from various disciplines and diverse geographical backgrounds so that the obtained perspectives are richer and more balanced.

This study uses thematic content analysis as the primary technique, focusing on grouping statements from various sources into previously established thematic categories. Thematic analysis in literature studies is useful for identifying points of agreement as well as differences of opinion among authors regarding a specific issue (Kampira, 2021). The four thematic categories used in this study are: transformational leadership behavior dimensions relevant to technology adoption, the mechanisms of leadership influence on organizational culture, obstacles hindering the synergy between technology and culture, and the conditions that moderate how effectively such leadership works. Sarantakos (2017) emphasizes the need for a critical evaluation of the methodology of the primary studies cited, as differences in research design quality can affect the reliability of the resulting findings. Dawson (2002) also highlights the importance of using sources from various disciplines so that the understanding of complex phenomena becomes more complete and not narrow. The selection of sources in this study was based on three main criteria: the recency of publication within the last ten years to ensure relevance to contemporary management practices, the reputation of internationally recognized publishers or journals, and a diversity of geographical and cultural perspectives. All collected documents were then analyzed iteratively to ensure that the interpretation of the original authors' statements was carried out accurately. The bibliography included at the end of this document contains all the references cited during the analysis process.

Result and Discussion

Transformational leadership contributes to the synergy of technology and organizational culture through the mechanism of idealized influence, where the leader becomes a role model in the use of new technology (Ghasabeh, 2021). When a leader consistently uses a new system with good competence and shows enthusiasm for its benefits, subordinates will tend

to imitate that behavior. This imitation mechanism works subconsciously because humans naturally tend to follow the behavior of authority figures they respect. In building this synergy, the quality of human resources and employee loyalty become the main determinants for such imitation behavior to have a positive impact on organizational performance (Darmawan et al., 2020). Transformational leaders leverage this mechanism by actively demonstrating the use of new technology in their daily work (Eseryel, 2024). They do not order subordinates to use the new system from behind a desk but are instead present on the production floor or in the shared workspace. The leader's physical presence while using a new system sends a signal that the technology is important enough to deserve attention from the highest level of the organization. Demonstrating the use of technology also helps reduce subordinates' anxiety because they see that even leaders sometimes experience difficulties and still persist. Leaders who are willing to admit their mistakes in using a new system show that mistakes are natural. This attitude creates a psychologically safe environment for subordinates to try and learn without fear of being judged. Over time, the use of new technology becomes a widely accepted norm, not because it is forced, but because it is modeled.

Inspirational motivation, the second dimension of transformational leadership, plays a role in articulating a vision of how new technology will transform the organization's future (Sahid et al., 2023). Transformational leaders are able to explain the relationship between technology adoption and the achievement of larger organizational goals, such as customer satisfaction, business sustainability, or employee career growth. This inspiring explanation helps employees see the meaning in their daily work that might otherwise feel monotonous. Entering data into a new system is not just an administrative task but a contribution to the organization's ability to make better decisions. To achieve this vision, effective goal cascading and strategic alignment are required in performance management so that every individual understands their contribution to digital transformation (Mardikaningsih & Darmawan, 2021). Transformational leaders use various communication media, ranging from face-to-face meetings and emails to videos, to convey their vision consistently. Consistent repetition of the message helps internalize that vision into the collective consciousness of the organization. Employees

begin to use the same language regarding the organization's future and see their roles in realizing it. Inspirational motivation is crucial, especially in the early stages of technology adoption when the benefits are not yet fully felt. Employees are asked to sacrifice the comfort of old ways of working for an uncertain future. Without an inspiring vision, this sacrifice feels disproportionate to the promised benefits. Leaders who fail to articulate a vision well will face greater resistance.

Intellectual stimulation, as the third dimension of transformational leadership, encourages employees to think of new ways to perform their jobs by utilizing technology. Transformational leaders are not satisfied with technology adoption that merely replaces old tools with new ones without changing work processes. They encourage subordinates to question the assumptions that have long been considered true regarding how work should be done (Ghasabeh, 2021). In this process, personality factors greatly influence how employees respond to the demands of innovation and adaptation to new technology (Darmawan, 2017). New technology opens up possibilities to fundamentally redesign work processes, rather than just automating existing ones. Transformational leaders create discussion forums where employees from various levels can share ideas on technology utilization. The ideas generated are not always immediately implemented, but the discussion process itself builds the organization's capacity to think innovatively. Employees learn that their intellectual contributions are valued, not just their adherence to procedures. Intellectual stimulation also includes providing resources for experimentation, such as dedicated time to try out new features or budgets for pilot projects. Employees who are encouraged to think creatively will develop a greater sense of ownership over the new system. This sense of ownership reduces resistance because the new system is no longer perceived as something forced from the outside but as a result of collective creation. Sustainable cultural change is only possible if employees feel like agents of change, not objects of change.

Individualized consideration is the fourth dimension of transformational leadership that is highly critical in addressing the diversity of technological readiness among employees. Not all employees have the same level of comfort with new technology due to differences in age, educational background, and previous experience (Soja & Soja, 2020).

This gap must be addressed by expanding access to technology and increasing digital literacy skills so that all employees have equal opportunities in a technology-based work world (Arifin & Darmawan, 2021). Transformational leaders recognize these individual differences and provide support tailored to each employee's needs. Support can take the form of additional training outside working hours, assignment of more experienced mentors, or adjustment of productivity targets during the transition period. Furthermore, the interpersonal skills and adaptive leadership styles of managers are proven to strongly influence the work effectiveness of employees in the field (Hariani & Sigita, 2022). Leaders are also sensitive to signs of anxiety or frustration in specific employees and take corrective action before problems escalate. This individual attention builds an emotional bond between leader and subordinate that goes beyond the formal superior-subordinate relationship. Employees feel cared for as individuals, not just as factors of production. This feeling increases loyalty and the willingness to sacrifice for the success of the team. In the long term, individual attention contributes to the formation of an organizational culture that values diversity and inclusivity. Such a culture is crucial for the success of technology adoption because every employee feels safe enough to admit their limitations and ask for help.

Transformational leadership acts as an integration mechanism between top-down technological policies and bottom-up operational needs (Eom et al., 2024). Technology adoption policies are usually formulated by top management based on long-term strategic considerations such as competitive advantage or cost efficiency. However, these policies often fail to consider realities at the operational level, such as infrastructure limitations, already high workloads, or deeply ingrained work habits. Transformational leaders at the middle level act as translators who communicate policies downward in a way that is relevant to frontline employees. They also convey the aspirations and complaints of employees upward so that they are heard by top management. This process is highly relevant to the dynamics of adaptive capacity and transformation processes in building organizational social resilience amidst disruption (Oluwatosin et al., 2023). This two-way process ensures that the resulting technology policies are not only theoretically sound but also practically implementable. Transformational leaders use various forums such as

coordination meetings, internal surveys, or suggestion boxes to collect input from various levels. The collected input is synthesized into concrete recommendations that can be acted upon by top management. Top management that is responsive to input from the frontline will produce policies that are better and more widely accepted. This effectively functioning feedback loop is a characteristic of an adaptive organization and is the result of well-functioning transformational leadership.

Empowerment carried out by transformational leaders accelerates the internalization of new technological culture at the operational level. Transformational leaders delegate authority to employees to make decisions about how new technology will be used within their areas of responsibility (Sumara et al., 2024). This also helps individuals in forming a positive self-identity through social interaction on social media and in increasingly complex digital environments (da Costa et al., 2022). This delegation of authority differs from a command-and-control approach where every step of system usage is determined centrally. Empowered employees feel they have the autonomy to innovate and adapt the use of technology to the specific needs of their work. This sense of ownership transforms the employee's relationship with technology from a passive user to an active partner. Employees no longer view technology as a burden to be endured but as a tool they can use to improve performance. Empowerment also includes providing the necessary resources such as access to data, training budgets, and technical support. Transformational leaders ensure that empowerment is followed by clear accountability so that freedom is not misused. Accountability is defined as the responsibility to achieve certain results, not as a mechanism to find faults. A healthy culture of empowerment will encourage employees to take initiative without fear of punishment if their ideas do not succeed. These bottom-up initiatives often become sources of unexpected innovation and provide added value beyond initial expectations.

Change management carried out by transformational leaders differs from conventional change management approaches in several important aspects (Mohammed, 2021). Conventional approaches are often linear and procedural with predetermined stages such as unfreezing, moving, and refreezing. This approach assumes that change can be rationally planned and controlled by a small group of experts. Transformational leaders

realize that technological change rarely goes according to plan due to the complexity of the interaction between technology, humans, and the organizational context. They adopt a more flexible and adaptive approach where initial plans are continuously adjusted based on feedback from implementation. Transformational leaders also place more emphasis on the emotional aspects of change rather than just the rational aspects. They recognize that employees may experience a range of emotions, from excitement to fear, when facing technological change. Leaders provide a safe space for employees to express their emotions without fear of being judged. This validation of emotions helps employees process their experiences and move forward. Conventional approaches that ignore emotional aspects often lead to passive resistance that remains undetected but still derails the change. Transformational leaders also build coalitions of change supporters at various levels of the organization rather than just relying on formal authority. This coalition consists of employees who are enthusiastic about new technology and willing to become change ambassadors for their colleagues. These change ambassadors are more effective in influencing colleagues' attitudes than messages from direct superiors because they are considered more authentic.

Transformational leadership influences organizational culture through the mechanism of creating new cultural artifacts that are seen and felt by all members of the organization (Poturak et al., 2020). Cultural artifacts include how people dress, office layouts, meeting rituals, and the language used daily. Transformational leaders introduce new artifacts that reflect technological values, such as open collaboration spaces equipped with digital devices, technical terms that begin to be used in daily conversation, or rituals of sharing knowledge about new technology in every team meeting. In this context, it is very important to understand the determining factors and development strategies for digital team work dynamics so that these artifacts can be adopted effectively (Mardikaningsih et al., 2020). These new artifacts may initially feel strange and awkward, but over time they become a normal part of organizational life. Leaders are consistent in promoting new artifacts and do not return to old ways despite pressure. This consistency is important because temporary changes to cultural artifacts will only cause confusion. Well-established cultural artifacts then gradually influence deeper values

and basic assumptions. For example, open collaboration spaces that were initially just physical changes can alter the assumption that serious work must be done in closed, private spaces. The new assumption that open collaboration is more productive will fundamentally change work behavior. This process of cultural change through artifacts requires a long time, but the results are more permanent than changes forced through regulations. Transformational leaders are patient in this process and do not rush to judge success based solely on short-term metrics.

The influence of transformational leadership on the internalization of technological culture is also mediated by procedural justice in the technology adoption process (Bunjak et al., 2022). Employees who feel that the decision-making process regarding technology is carried out fairly will more easily accept the decision results, even if they do not fully align with their preferences. Procedural justice includes the consistency of rule application, accuracy of information, correction of errors, and the representation of all affected parties. This relates to the role of leadership and employee well-being, which are proven fundamental in increasing organizational productivity (Darmawan et al., 2022). Transformational leaders ensure that the technology selection process involves representatives from various levels of the organization, not just top management. The criteria used to evaluate technology alternatives are communicated transparently before the process begins. Employees are given the opportunity to raise questions and objections before a final decision is made. The reasons behind the final decision are explained in detail, including why other alternatives were not chosen. When problems occur after implementation, the leader does not seek a scapegoat but focuses on collective system improvement. Furthermore, the integration of spiritual values into employee development programs during digital transformation is an important complement to maintaining their well-being and emotional commitment (Putra et al., 2025). This feeling of being treated fairly builds employee trust in management's good intentions. Trust is a highly valuable commodity in technological change because employees are asked to take risks without guarantees of success. Without trust, every change initiative will be met with skepticism and resistance.

Transformational leadership also plays a role in managing conflicts between old cultural values that tend to be stable and the demands of new

technology that are disruptive (Putri et al., 2020). This value conflict often arises when new technology demands ways of working that contradict long-held habits. Furthermore, the influence of leadership style in shaping a responsive organizational culture becomes the main key to facing changes that continue to occur dynamically (Al Hakim et al., 2022). For example, a culture that highly values hierarchy and formal procedures may conflict with digital collaboration technology that demands horizontal and fast communication. Transformational leaders do not force the sudden elimination of old values because it would cause significant resistance. Instead, they seek a middle ground where old values and the demands of new technology can coexist harmoniously. This cultural negotiation process involves open dialogue about the advantages and disadvantages of each value. Leaders help employees see that old values are not entirely bad and new values are not entirely good. As a result, positive leadership and work culture will directly influence employee work loyalty levels (Hariani & Irfan, 2022). Leaders also identify new values that need to be added to accommodate technological demands. This cultural negotiation process requires high diplomacy and empathy skills from the leader. Rigid and dogmatic leaders will fail in this process because they force their vision without listening to subordinates' concerns.

The success of transformational leadership in synergizing technology and organizational culture is highly dependent on the support of aligned human resource systems. Recruitment, training, performance appraisal, and compensation systems must be designed to reinforce the behaviors desired by transformational leaders. Innovation in human resource management is a strategic step to increase organizational competitiveness in the era of globalization (Abdullah et al., 2021). For example, if a leader encourages employees to collaborate through digital platforms but the annual bonus system only rewards individual achievements, employees will ignore the leader's encouragement and focus on what is valued by the system. Transformational leaders work with the HRM department to align HRM systems with the needs of technological transformation. Performance appraisal criteria are revised to include technology adoption indicators such as the frequency of system usage, the number of contributions in digital discussion forums, or the success of completing online training. In addition, overall

organizational effectiveness is largely determined by the distribution of six key factors, including knowledge management systems and quality of work life that support employee commitment (Eddine et al., 2023; Darmawan, 2024). Alignment between leadership and HRM systems creates a consistent message about what is valued by the organization. This consistency accelerates the internalization of new values because employees receive the same signals from various sources.

The development of transformational leadership at all levels of the organization is necessary to create a sustainable synergy effect between technology and culture (Hamilton et al., 2024). Reliance on one or two charismatic leaders at the top level is very risky because if those leaders leave, the changes that have already occurred may stop or even reverse direction. Organizations that are mature in technological change invest significant resources to develop transformational leadership capacity at the middle manager and first-line supervisor levels. These leadership development programs include training in vision communication skills, empowering feedback techniques, and methods of intellectual stimulation for subordinates. The programs also include coaching and mentoring where prospective transformational leaders learn directly from experienced practitioners. Leadership development cannot be done solely in a classroom training format because transformational leadership skills require practice in real-life situations. Organizations provide small-scale change projects where prospective leaders can practice their skills with limited risk of failure. Success in small projects builds confidence and credibility before being assigned to larger projects. Transformational leadership that is distributed throughout the organization creates a network of change that is not easily extinguished by the replacement of individuals. This network becomes a social infrastructure that supports the adoption of any technology that will emerge in the future. Investment in leadership development may require high initial costs, but the return in the form of organizational adaptation capacity is priceless.

Conclusion

Transformational leadership functions as a synergy mechanism between technology adoption and organizational culture development through four behavioral dimensions: idealized influence, inspirational motivation,

intellectual stimulation, and individual consideration. Transformational leaders serve as role models in the use of technology, articulate inspiring visions, encourage innovation in technology utilization, and provide support tailored to the individual needs of employees. They act as a bridge between top management's technology policies and frontline operational realities through effective two-way communication. Empowering employees in decision-making regarding technology accelerates the internalization of new values due to a high sense of ownership. Change management carried out flexibly with attention to emotional aspects is more successful than rigid procedural approaches. The success of transformational leadership depends heavily on the support of aligned HRM systems and the development of leadership capacity at all organizational levels. Sustainable synergy between technology and organizational culture is only possible if transformational leadership is not concentrated in one or two individuals but is spread as a collective capacity of the organization.

The implications of this study for management practitioners are the need to integrate transformational leadership criteria into the selection and promotion processes of managers. Suggestions for organizations undergoing digital transformation include investing sufficient resources into transformational leadership training for middle managers and first-line supervisors. Training programs should encompass vision communication skills, empowering feedback techniques, and methods for intellectual stimulation. Organizations also need to align HRM systems—including recruitment, performance appraisal, and compensation—with values that support technology adoption. For management educational institutions, it is recommended to incorporate topics regarding the role of leadership in the synergy of technology and culture into their curricula. Further research is required to empirically test the relationship between transformational leadership dimensions and success indicators of technology adoption across various industries. Longitudinal studies with an observation period of at least two years would be better able to capture the process of cultural change, which requires time. Collaboration between academics and practitioners in this research will produce findings that are more relevant to real-world needs.

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