The Impact of Trust in Technology and Trust in Leadership on New Technology Acceptance Among Enterprise Employees

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Abstract

In the contemporary knowledge economy era, the adoption of new technologies is crucial for enterprises to enhance their core competitiveness. How to enable employees to trust and accept new technologies amidst the risks and uncertainties they entail represents a critical challenge in enterprise new technology promotion. Although existing academic literature has acknowledged the positive role of trust in the new technology adoption process, there remains a dearth of relevant theoretical and empirical research, particularly concerning the elucidation of its underlying psychological mechanisms. To address this research gap, the present study investigates the impact of technology trust and leadership trust on employees' new technology acceptance within the context of enterprise new technology promotion, and introduces perceived risk and technology self-efficacy as mediating variables to explore the intrinsic mechanisms through which trust exerts its influence. Additionally, it further examines the moderating effect of corporate culture, thereby constructing a theoretical model linking trust and employees' new technology acceptance, and offering reasonable recommendations for enterprise new technology promotion.

Full Text

Preamble

The Impact of Trust in Technology and Trust in Leadership on Employee Adoption of New Technology

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Abstract
In today's knowledge economy, new technology adoption is critical for enhancing corporate core competitiveness. How to enable employees to trust and accept new technologies amidst the risks and uncertainties they bring represents a significant challenge for technology diffusion within organizations. While existing scholarship has recognized the positive role of trust in technology adoption, theoretical and empirical research remains limited, particularly regarding the underlying psychological mechanisms. To address this gap, this study examines how technology trust and leadership trust influence employee acceptance of new technology in organizational contexts, introducing perceived risk and technological self-efficacy as mediating variables to explore the internal mechanisms of trust effects. Furthermore, we investigate the moderating role of organizational culture to construct a theoretical model linking trust and employee technology acceptance, offering practical recommendations for organizational technology diffusion.

Keywords: new technology adoption, technology diffusion, trust in technology, trust in leadership, technological self-efficacy

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1. Problem Statement

Modern society is an innovation-driven society where high technology propels economic development and industrial upgrading, serving as a crucial pillar of the knowledge economy and an important internal driving force for social progress. For enterprises, adopting new technology not only enables the integration of economic and technological resources, transforming scientific knowledge from potential forms into actual productive forces, but also builds core competitiveness and narrows technological gaps with industry leaders (Zhang et al., 2018). However, emerging technologies bring not only tremendous opportunities but also high uncertainty, posing comprehensive challenges to organizational management. Failure to address these challenges effectively can result in unsuccessful technology implementation.

Current domestic research on organizational technology adoption predominantly treats the enterprise as a holistic unit, examining factors such as adoption timing (Sun & Zhou, 2008) or market demand (Yang & Liu, 2011), while paying less attention to employees' acceptance of new technology. Ultimately, technology implementation depends on employees. During technology diffusion, employees must overcome risks and uncertainties associated with new technology, believe in its benefits for the organization, and trust leadership to guide the team through technological transformation. Only then can technology adoption

succeed. Which dimensions of trust influence employee technology acceptance, and how does trust exert its effects?

Research evidence demonstrates that trust in leadership effectively promotes organizational innovation and reform (Cheong et al., 2018). Organizational culture, management systems, and industry differences can all influence trust (Chong et al., 2009), thereby affecting technology adoption. Meanwhile, McKnight et al. (2002) proposed technology-based trust, suggesting that when individuals perceive technology as beneficial, they become willing to rely on it to complete tasks. These preliminary findings highlight the importance of trust for technology diffusion within organizations. This project therefore seeks to investigate the effects of leadership trust and technology trust on employee technology acceptance, analyze the moderating role of different organizational cultures, and construct a theoretical model linking trust and employee technology acceptance.

2.1 Theoretical Models of Individual and Organizational Technology Adoption

Technology acceptance models have evolved for nearly half a century, originally focusing on how individuals accept and adopt new technology to drive societal technology diffusion. Everett Rogers' Innovation Diffusion Theory (IDT), proposed in 1962, identified individual technology acceptance as the foundation of innovation diffusion. Rogers divided individual technology acceptance into five stages: awareness, persuasion (through knowledge acquisition), decision (whether to adopt), implementation, and confirmation (re-evaluation of adoption). Individual-level acceptance, evolving over time and scale, ultimately generates collective-level innovation diffusion (Rogers, 1962). This process is influenced by four factors: the innovation itself, communication channels, the social system, and time. The social system factor particularly emphasizes environmental influences, such as how cultural contexts, organizational culture, and social norms affect individual technology acceptance. This framework applies to various technology acceptance scenarios and establishes the theoretical foundation for technology adoption research.

With rapid information technology development, technology acceptance models have continuously updated to incorporate subjective variables from individual perspectives. For example, the Technology Acceptance Model (TAM), built upon the Theory of Reasoned Action, emphasizes that perceived ease of use and perceived usefulness influence attitudes toward technology, which subsequently affect adoption behavior (Davis, 1985). Venkatesh et al. (2003) reviewed decades of computer technology application research and proposed the Unified Theory of Acceptance and Use of Technology (UTAUT), which includes four core dimensions: performance expectancy (the degree to which individuals believe using a system will help their work), effort expectancy (the effort required to use the system), social influence (subjective norms, social factors, and public image), and facilitating conditions (perceived organizational support for technology use). UTAUT has been widely applied across contexts, including

mobile banking (Zhou et al., 2010), course management software (Marchewka & Kostiwa, 2007), and e-government systems (AlAwadhi & Morris, 2008).

These theories explain individual technology acceptance by analyzing technology characteristics, individual factors, and environmental factors and their interactions. In contrast, Tornatzky et al. (1990) proposed the Technology-Organization-Environment (TOE) framework, which focuses on the organization as the unit of analysis, examining how technological, organizational, and environmental factors influence organizational technology adoption. For instance, in high-tech enterprise adoption of cloud storage, technological relative advantage, top management support, firm size, competitive pressure, and partnership pressure all significantly affected adoption (Low et al., 2011). Awa et al. (2016) studied ERP system adoption in SMEs and found that technology itself had greater influence than organizational structure or business scope. Specifically, expected benefits and competitive enhancement from new technology serve as important stimuli for adoption (Aboelmaged, 2014). Feng and Gu (2015) developed a probabilistic adoption model demonstrating that technological benefits effectively predict adoption probability. Organizationally, leadership support, firm size, and resources influence technology adoption (Ifinedo, 2005; Yan et al., 2009). Some scholars examine organizational management' s impact from structural perspectives; for example, Wang et al. (2012) compared Nokia and Apple' s transition from 2G to 3G, finding that organizational routine renewal mediated the relationship between new technology and competitiveness. Environmentally, market competition and government regulations affect adoption, with competitive pressure promoting innovation (Yang et al., 2015) and regulatory guidance facilitating technology adoption (Li, 2008).

However, the TOE framework typically treats organizations as holistic units, neglecting employees' importance. Recent research has begun focusing on employee technology acceptance. Doe et al. (2019, 2020) proposed the Firm-level Technology Acceptance Model (F-TAM), incorporating employee-level factors and demonstrating that employee technology acceptance directly influences organizational adoption and mediates firm-level factors.

2.2 Employee Technology Acceptance in Organizations

Prior research confirms that innovative organizational environments promote employee innovative behavior (Kang et al., 2015) and facilitate acceptance of change (Metwalley et al., 2019). Innovative environments foster employee enthusiasm for innovation, with proactive and risk-taking cultures better cultivating innovative passion (Kang et al., 2016). Khasawneh (2018) found that enterprises with incentive systems and employee care help skeptical or fearful employees overcome barriers to new technology adoption. Organizational culture represents another crucial environmental characteristic, with numerous studies demonstrating culture' s significant influence on technology acceptance (Beretta et al., 2018). Cultural factors can directly affect attitudes toward technology

(e.g., Abbasi et al., 2015; Hung & Chou, 2014) and indirectly influence usage intentions through moderating perceived effectiveness and ease of use (Schepers & Wetzels, 2007; McCoy et al., 2007). Different cultural dimensions exert varying effects; for example, authoritarian culture reduces automation-related job insecurity (Lingmont & Alexiou, 2020), while collectivism and long-term orientation positively affect technology perceptions (Sun et al., 2019).

Leadership support for new technology also significantly impacts employee acceptance. Weng and Tang (2014) demonstrated that technology-driven leadership stimulates employee creativity in using technology to serve customers effectively. Chen and Tseng (2012) confirmed that perceived leadership support enhances employees' technological capabilities. Research shows that leadership assistance with technology effectively improves employee confidence and self-directed learning behaviors (Mosley et al., 2008; Ngai et al., 2008).

Industry context also influences employee technology acceptance. Doe et al. (2019) identified differences between technology and non-technology SMEs. Industry-specific studies in aviation (Tan & Sundarakani, 2020), tourism (Matikiti et al., 2018), and hospitality (Park et al., 2018) reveal varying industry impacts. Sun et al. (2019) found that hospitality employees, predominantly middle-aged women with limited technological understanding, exhibit lower technology acceptance.

Overall, organizational culture, leadership support, and industry type affect employee technology acceptance. Existing research has incorporated some contextual variables into acceptance models, accumulating relevant evidence. However, this research remains fragmented, lacking systematic theoretical frameworks and deep explanations of internal mechanisms (Molinillo & Japutra, 2017; Tseng, 2017).

2.3 The Impact of Trust on Employee Technology Acceptance

Trust is fundamental to relationships, reflecting how people interact positively and build connections (Lewicki & Wiethoff, 2000). In economic exchanges, consumer trust is crucial, functioning as a factor of perceived risk (Koller, 1988) and facilitating transactions while reducing risk (Fukuyama, 1995). E-commerce applications of new technology involve higher uncertainty than traditional transactions, making trust particularly important. Pavlou (2003) integrated trust into the TAM model for e-commerce, finding that trust enhances perceived ease of use and usefulness while reducing perceived risk, thereby promoting acceptance. Similar research shows trust improves online shopping satisfaction and predicts loyalty (Chiu et al., 2009). Gefen et al. (2003) also combined TAM with trust, demonstrating that trust directly influences online shopping intentions and indirectly affects behavior through perceived usefulness. Institution-based trust (e.g., platform security) effectively enhances e-commerce trust. Domestic research on trust and individual technology adoption primarily focuses on

e-commerce acceptance. For example, Min et al. (2008) proposed a modified UTAUT model for mobile commerce in China, incorporating trust, privacy protection, and usage costs to better analyze local user acceptance.

In organizational innovation research, indirect evidence suggests trust influences employee technology acceptance. Yu et al. (2018) identified organizational trust as a mediator between organizational relationships and employee innovative behavior. Lee (2009) examined Korean employees' RFID acceptance, finding that trust in security and service providers affected perceived usefulness and ease of use. Yue et al. (2019) confirmed that organizational trust positively influences employee openness to change. While these studies support trust' s benefits for innovative behavior, specific theoretical and empirical research on trust' s impact on employee technology acceptance remains lacking.

In summary, trust' s role in individual technology acceptance has gained research attention, particularly in e-commerce contexts, showing that trust enhances acceptance. However, trust concepts vary widely across studies, covering interpersonal and technological dimensions with inconsistent definitions and measurements. Research primarily focuses on individual acceptance, with limited attention to internal organizational trust and its impact on employees.

2.4 Technology Trust and Leadership Trust

With e-commerce technology development, researchers increasingly examine trust in electronic and IT platforms. McKnight et al. (2002, 2011) proposed technology trust, distinct from interpersonal trust, defined as individuals' attitudes toward technology that affect their willingness to rely on it to complete tasks. Muir and Moray (1996) defined technology trust based on users' perceptions of technological benefits. Given potential technological instability and users' disadvantaged position when relying on technology (Martin, 1996), technology trust reduces perceived risk and promotes acceptance (Meng et al., 2008; McKnight & Chervany, 2001). Research has explored relationships among perceived risk, self-efficacy, trust, and acceptance (Faqih, 2013). For example, computer self-efficacy significantly influences organizational computer system usage (Madhavan & Phillips, 2010).

Existing research lacks unified definitions and measurements of technology trust. Pavlou (2003) used overall trust in online retailers, while others measured trust through integrity and benevolence (Lee & Turban, 2001) or website familiarity (Bhattacherjee, 2002) and quality (Yoon, 2002). These studies inconsistently define the trust object (Chang et al., 2005).

Unlike technology trust, leadership trust has been extensively studied in organizational management. Leadership trust significantly influences organizational change and innovation (Cheong et al., 2018), guides employee positive emotions (Agote et al., 2015), improves performance (Byun et al., 2017), and particularly enhances innovation implementation behavior (Michaelis et al., 2009). Different organizational cultures affect leadership trust through problem-solving

approaches and leader-subordinate relationships, subsequently influencing innovative behavior (Scott & Bruce, 1994).

In summary, to investigate internal employee technology acceptance, both technology trust and leadership trust must be incorporated into the research framework, considering organizational culture' s influence.

3. Research Framework

This study' s overall objective integrates organizational culture, trust, and employee technology acceptance to analyze how technology trust and leadership trust affect employee decisions and behaviors regarding new technology, examine organizational culture' s moderating role, and empirically investigate trust' s impact and underlying mechanisms. This requires addressing several questions:

1. **What types of trust influence employee technology acceptance decisions and behaviors?** Based on literature, we identify technology trust and leadership trust as relevant in organizational contexts. Using experimental methods, we will examine their respective effects on employee technology acceptance, establishing the foundation for modeling trust-acceptance relationships.
2. **How can we model the relationship between trust and employee technology acceptance?** Unlike previous research, we emphasize trust' s role in risk factors during acceptance. Existing models rely on prior technology experience to judge ease of use and usefulness, limiting applicability to pre-adoption stages without such experience. A trust-risk relationship model applies across all acceptance stages, providing better predictive power.
3. **What psychological mechanisms mediate technology trust' s effects?** Current technology trust research is incomplete. Building on computer self-efficacy (Compeau & Higgins, 1995), we develop technological self-efficacy to investigate the internal mechanism. Empirical research will test its mediating role, strengthening the theoretical foundation.
4. **What cultural factors moderate trust-acceptance relationships?** We focus on Chinese organizational culture' s moderating effects. By examining how industry and organizational culture moderate trust' s impact, we incorporate environmental factors to complete the theoretical framework. Practically, organizations can leverage these insights to build trust environments that facilitate technology acceptance.

3.1 Study 1: Establishing the Relationship Between Trust and Employee Technology Acceptance

We propose that both technology trust and leadership trust significantly affect employee technology acceptance in organizational contexts. Given ongoing de-

bates about trust measurement (Burke et al., 2007; Mayer et al., 1995), we will adapt domestic and international methods to design appropriate measures.

For technology trust, we identify three antecedents: functionality, reliability, and helpfulness (McKnight et al., 2011). For leadership trust, we will measure three dimensions based on Mayer et al. (1995) and Mishra (1996): ability, benevolence, and integrity (see Figure 1 [Figure 1: see original paper]). Research also suggests management involvement during technology diffusion affects employee confidence (Alsheibanir et al., 2018). Finally, we will experimentally manipulate trust to verify causality using a 2 (high/low leadership trust) $\times$ 2 (high/low technology trust) between-subjects design, exploring interaction effects. Experimental manipulation, with high ecological validity, provides robust evidence for causal relationships and is widely used in psychology, management, and decision-making research (e.g., Dineen & Noe, 2009; Tost et al., 2013).

Hypothesis 1: Positive priming of technology trust will significantly increase employee technology acceptance, while negative priming will decrease acceptance.
Hypothesis 2: Positive priming of leadership trust will significantly increase employee technology acceptance, while negative priming will decrease acceptance.
Hypothesis 3: Leadership trust and technology trust interactively influence employee technology acceptance.

3.2 Study 2: Modeling Trust-Employee Technology Acceptance Relationships and Mechanisms

Building on Study 1, we will survey employees to examine joint effects of technology and leadership trust on acceptance. The TAM model identifies perceived risk and perceived usefulness as key determinants of usage intentions (Davis, 1985). Pavlou (2003) confirmed that risk and uncertainty significantly affect employee technology acceptance. Prior research demonstrates that technology trust substantially reduces perceived technological risk (Mayer et al., 1995; McKnight & Chervany, 2001). Therefore, we incorporate technology benefits and use perceived risk as a mediator to test our model' s validity. Perceived risk can further explain the internal mechanisms through which trust influences acceptance (see Figure 2 [Figure 2: see original paper]).

Hypothesis 4: Both technology trust and leadership trust significantly predict employee technology acceptance.
Hypothesis 5: Perceived technology benefits positively predict employee technology acceptance.
Hypothesis 6: Perceived risk negatively predicts employee technology acceptance.
Hypothesis 7: Technology trust and leadership trust enhance employee technology acceptance by reducing perceived risk.

3.3 Study 3: Technology Trust' s Influence Through Technological Self-Efficacy

Self-efficacy refers to individuals' subjective assessment of their capability to perform tasks (Bandura, 1986), a theory supported by extensive empirical research. Self-efficacy significantly influences organizational citizenship behavior and employee innovation (Gueskey, 1988; Lin, 2007). Computer self-efficacy applies this concept to computer system usage; for example, Madhavan and Phillips (2010) found it positively affects organizational computer use. We define technological self-efficacy as subjective evaluation of one' s ability to use broad technologies. Research incorporating internet self-efficacy into TAM found it indirectly affects online shopping intentions by mediating perceived usefulness and ease of use (Faqih, 2013; Yuan et al., 2017).

Research explaining trust' s internal mechanisms through technological self-efficacy remains limited. Tam et al. (2018) validated technology trust' s effect on continued use, with computer self-efficacy as a mediator. We propose that technology trust enhances self-assessment of technological capability (technological self-efficacy), thereby increasing acceptance (see Figure 3 [Figure 3: see original paper]).

Hypothesis 8: Positive technology trust priming will significantly increase employee technology acceptance across different usage stages.
Hypothesis 9: Technology trust influences employee technology acceptance through the mediation of technological self-efficacy.

3.4 Study 4: Moderating Effects of Industry and Organizational Culture

Technological environment (Tornatzky et al., 1990), institutional environment (Khasawneh, 2018; Lingmont & Alexiou, 2020), and industry factors (Doe et al., 2019) all affect employee technology adoption (Oliveira & Martins, 2010; Yang et al., 2013). Study 4 will explore how industry and organizational culture moderate trust-acceptance relationships.

We will distinguish between high-tech and non-high-tech industries and examine differences between individualistic and collectivistic organizational cultures (see Figure 4 [Figure 4: see original paper]), adapting measurement approaches from Hofstede et al. (1990) and Ramamoorthy et al. (2007).

Hypothesis 10: Compared to non-high-tech industries, technology trust will have a stronger effect on employee technology acceptance in high-tech industries, while leadership trust will have a stronger effect in non-high-tech industries.
Hypothesis 11: Across industries, collectivistic culture will moderate leadership trust effects, while individualistic culture will moderate technology trust effects.

4. Theoretical Framework

Figure 5 [Figure 5: see original paper] Theoretical Framework

For organizations, new technology diffusion and adoption can effectively improve efficiency. However, existing research on organizational technology adoption focuses primarily on organizational-level factors—analyzing adoption timing from a decision-making perspective (Zhang et al., 2018; Qin et al., 2020) or examining external market competition influences (Yang et al., 2015; Aguila-Obra & Padilla-Melendez, 2006). Even when considering organizational influences, research concentrates on leadership roles (Bagheri et al., 2020), neglecting employees'critical role in technology adoption. Employee acceptance and utilization of new technology are key to successful implementation.

This study proposes a new theoretical perspective (see Figure 5) that analyzes technology adoption from the employee acceptance angle, addressing existing research gaps. Current models like TAM and UTAUT emphasize individual cognitive factors, making them widely applicable to personal technology use. Environmental factors have been gradually incorporated, such as social networks, subjective norms, and organizational support (Taherdoost, 2018). However, these models inadequately explain how organizational environments affect employee acceptance, such as leadership influence or organizational culture effects. As Orlikowski (1992) noted that social environments profoundly influence human-technology interaction, we argue that analyzing organizational environmental factors is crucial. Conversely, the TOE framework examines environmental influences from an organizational perspective, focusing on firm size, management structures, and leadership, without incorporating employee attitudes and cognition (Molinillo & Japutra, 2017). Therefore, this study examines trust' s impact on employee acceptance from an employee perspective, combining multilevel analysis of industry and cultural contexts to enrich technology adoption theory.

First, we propose a trust-centered theoretical model of employee technology acceptance. Based on organizational technology diffusion contexts, we employ leadership trust and technology trust to explain acceptance. Extensive organizational research confirms leadership trust' s positive effects on employee decision-making (Cheong et al., 2018; Agote et al., 2015; Byun et al., 2017). As human-technology interaction intensifies, technology trust' s importance will increase, helping understand evolving human-technology relationships (Glikson & Wooley, 2020). Study 1 clarifies the structure and measurement of both trust types, addressing definitional inconsistencies in existing research. We test their positive effects (Hypotheses 1-2) and interaction (Hypothesis 3).

Second, we examine trust' s mechanisms (Hypotheses 4-7). Study 2 integrates TAM and TOE frameworks, using perceived risk and technology benefits to explain how trust enhances acceptance (Davis, 1985; Orlikowski, 1992). We propose that perceived benefits increase acceptance (Hypothesis 5), while perceived risk from technological instability decreases acceptance (Hypothesis 6). Prior

research shows technology trust reduces perceived risk (McKnight & Chervany, 2001), and trust in service providers affects risk perceptions (Lee, 2009). Thus, we propose that both trust types reduce perceived risk to enhance acceptance (Hypothesis 7), enriching the trust-centered model.

Third, we investigate technology trust' s internal mechanism through technological self-efficacy mediation (Hypotheses 8-9). Current technology trust research is limited, with recent studies measuring its effects but lacking empirical investigation of mechanisms (Rupp et al., 2016; Salanitri et al., 2016). Low technological self-efficacy reduces acceptance, while technology trust enhances self-assessment of capability, thereby increasing acceptance. Zhang et al. (2017) confirmed that technological self-efficacy affects perceived ease of use and effectiveness of mobile health systems. Yuan et al. (2017) similarly found it important for mobile information system adoption intentions. Tams et al. (2018) introduced computer self-efficacy as a mediator of technology trust' s effects on usage. We propose technological self-efficacy mediates technology trust' s influence, providing a foundation for future research on its antecedents and boundary conditions.

Finally, we examine how industry and culture moderate trust mechanisms. Industry attributes create different personnel requirements (Bagheri, 2017). High-tech industry employees possess greater technological understanding, potentially relying more on technology trust, while non-high-tech industries may depend more on interpersonal trust and leadership trust during change (Doe et al., 2019). Study 4 proposes that technology trust has stronger effects in high-tech industries, while leadership trust dominates in non-high-tech industries (Hypothesis 10), refining understanding of contextual influences. Additionally, collectivistic and individualistic cultures affect acceptance (Sun et al., 2020; Tarhini et al., 2017). We propose that these cultural orientations differentially moderate leadership trust and technology trust effects (Hypothesis 11). Collectivistic culture emphasizes organizational norms, strengthening hierarchical systems' moderating effect on leadership trust (Yang et al., 2013). Individualistic culture emphasizes personal agency, moderating technology trust effects.

Overall, this theoretical model extends and deepens understanding of employee technology acceptance mechanisms in organizational technology adoption, with three theoretical contributions. First, it explains acceptance factors by combining individual cognitive and environmental perspectives from an employee viewpoint. Second, by clearly defining and measuring both trust types, it analyzes their influence mechanisms, deepening trust understanding in technology acceptance research. Third, it proposes technology trust' s internal mechanism, establishing a foundation for future research. Practically, organizations can use these findings to develop effective management strategies. For example, during early adoption stages, technology training can enhance understanding, improve technological self-efficacy and trust, and facilitate acceptance. Organizations can also tailor strategies to their industry and culture: non-high-tech, collectivistic firms can leverage leadership trust to reduce perceived risk, while technology firms should encourage employee proactivity and innovation.

Author Contributions:
XU Yi: Conceptualized research, designed methodology, drafted and revised manuscript.
LIU Yixuan: Conducted literature review, drafted and revised manuscript.

References

Feng, L., & Gu, M. (2015). Research on new technology adoption and diffusion based on probability models. *Science Progress and Policy*, 32(5), 1–4.

Min, Q., Ji, S., & Meng, D. (2008). Research on trust factors in mobile commerce adoption. *Management World*, (12), 184–185.

Sun, H., & Zhou, H. (2008). The impact of absorptive capacity on new technology adoption timing. *Journal of Zhongnan University of Economics and Law*, (5), 98–103, 143–144.

Wang, Y., Ma, J., Wu, X., & Liu, S. (2012). Research on new technology introduction, organizational routine renewal, and enterprise competitiveness: A comparative case study of Nokia and Apple. *Science of Science and Management of S.&T.*, 33(11), 150–159.

Yang, J., Yang, H., & Ma, T. (2013). The impact of collectivistic and individualistic cultures on technological innovation methods: The moderation of trust. *Journal of Management Science*, 26(6), 1–11. https://doi.org/10.3969/j.issn.1672-0334.2013.06.001

Yang, W., & Liu, X. (2011). Game analysis of government-promoted enterprise new technology adoption. *Chinese Journal of Management*, 8(4), 621–627.

Zhang, W., Zhong, W., & Mei, S. (2018). Research on new technology adoption under innovation return uncertainty. *Systems Engineering—Theory & Practice*, 38(2), 390–

Abbasi, M. S., Tarhini, A., Elyas, T., & Shah, F. (2015). Impact of individualism and collectivism over the individual's technology acceptance behaviour: A multi-group analysis between Pakistan and Turkey. *Journal of Enterprise Information Management*, 28(6), 747–768. https://doi.org/10.1108/JEIM-12-2014-0124

Aboelmaged, M. (2014). Predicting E-Readiness at firm-level: An analysis of technological organizational and environmental (TOE) effects on E-maintenance readiness in manufacturing firms. *International Journal of Information Management*, 34(5), 639–651. https://doi.org/10.1016/j.ijinfomgt.2014.05.002

Agote, L., Aramburu, N., & Lines, R. (2016). Authentic leadership perception, trust in the leader, and followers' emotions in organizational change processes. *The Journal of Applied Behavioral Science*, 52(1), 35–63. https://doi.org/10.1177/0021886315617531

Aguila-Obra, A., & Padilla-Melendez, A. (2006). Organizational factors affecting Internet technology adoption. *Internet Research*, 16(1), 94-110. https://doi.org/10.1108/10662240610642569

AlAwadhi, S., & Morris, A. (2008). The use of the UTAUT model in the adoption of E-government services in Kuwait. *Proceedings of the 41st Annual Hawaii International Conference on System Sciences*, 1-11. http://doi.org/10.1109/HICSS.2008.452

Alsheibani, S., Cheung, Y., & Messom, C. (2018). Artificial Intelligence adoption: AI-readiness at firm-level. *PACIS 2018 Proceedings*. 26-32. https://aisel.aisnet.org/pacis2018/37

Awa, H., & Ojiabo, O. (2016). A model of adoption determinants of ERP within T-O-E framework. *Information Technology & People*, 29(4), 901-930. http://doi.org/10.1108/ITP-03-2015-0068

Bagheri, A. (2017). The impact of entrepreneurial leadership on innovation work behavior and opportunity recognition in high-technology SMEs. *Journal of High Technology Management*, 28(2), 159-166. https://doi.org/10.1016/j.hitech.2017.10.003

Bagheri, A., Newman, A., & Eva, N. (2020). Entrepreneurial leadership of CEOs and employees' innovative behavior in high-technology ventures. *Journal of Small Business Management*. https://doi.org/10.1080/00472778.2020.1737094

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Beretta, E., Fontana, M., Guerzoni, M., & Jordan, A. (2018). Cultural dissimilarity: Boon or bane for technology diffusion? *Technological Forecasting & Social Change*, https://doi.org/10.1016/j.techfore.2019.119768

Bhattacherjee, A. (2002). Individual trust in online firms: Scale development and initial test. *Journal of Management Information Systems*, 19(1), 211-241. https://doi.org/10.1080/07421222.2002.11045715

Braganza, A., Chen, W., Canhoto, A., & Sap, S. (2020). Productive employment and decent work: The impact of AI adoption on psychological contracts, job engagement and employee trust. *Journal of Business Research*, S014829632030518X. https://doi.org/10.1016/j.jbusres.2020.08.018

Burke, C. S., Sims, D. E., Lazzara, E. H., & Salas, E. (2007). Trust in leadership: A multi-level review and integration. *The Leadership Quarterly*, 18(6), 606-632. https://doi.org/10.1016/j.leaqua.2007.09.006

Byun, G., Dai, Y., Lee, S., & Kang, S. (2017). Leader trust, competence, LMX, and member performance: A moderated mediation framework. *Psychological Reports*, 120(6), 1159. https://doi.org/10.1177/0033294117716465

Chang, M. K., Cheung, W., & Lai, V. S. (2005). Literature derived reference models for the adoption of online shopping. *Information & Management*, 42(4), 543-559. https://doi.org/10.1016/j.im.2004.02.006

Chen, H. R., & Tseng, H. F. (2012). Factors that influence acceptance of web-based e-learning systems for the in-service education of junior high school teachers in Taiwan. *Evaluation and Program Planning*, 35(3), 398-406. https://doi.org/10.1016/j.evalprogplan.2011.11.007

Cheong, M., Yammarino, F., Dionne, S., Spain, S., & Tsai, C. (2018). A review of the effectiveness of empowering leadership. *The Leadership Quarterly*, 9(8), 1–25. https://doi.org/10.1016/j.leaqua.2018.08.005

Chiu, C. M., Lin, H. Y., Sun, S. Y., & Hsu., M. H. (2009). Understanding customers' loyalty intentions towards online shopping: An integration of technology acceptance model and fairness theory. *Behaviour & Information Technology*, 28(4), 347–360. https://doi.org/10.1080/01449290801892492

Chong, A., Ooi, K., Lin, B., & Raman, M. (2009). Factors affecting the adoption level of c-commerce: An empirical study. *Journal of Computer Information Systems*, 50(2), 13–22.

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19(2), 189–211.

Davis, F. (1985). *A technology acceptance model for empirically testing new end-user information systems: Theory and results* (Unpublished doctoral dissertation). Massachusetts Institute of Technology.

Dineen, B. R., & Noe, R. A. (2009). Effects of customization on application decisions and applicant pool characteristics in a web-based recruitment context. *Journal of Applied Psychology*, 94(1), 224-34. https://doi.org/10.1037/a0012832

Doe, J. K. (2020). The Eco-system of firm technology adoption. In S. H. Park, M. A. Gonzalez-Perez, & D. E. Floriani (Eds.), *The Palgrave Handbook of Corporate Sustainability in the Digital Era* (pp. 3–27). Springer International Publishing. https://doi.org/10.1007/978-3-030-42412-1_1

Doe, J. K., Van de Wetering, R., Honyenuga, B., & Versendaal, J. (2019). Validating the firm technology adoption model (F-TAM). In M. Nunes, P. Isaías, P. Powell, P. Ravesteijn, & G. Ongena (Eds.), *Proceedings of the 12th IADIS International Conference Information Systems 2019: Utrecht* (pp. 205–215). IADIS Press. https://doi.org/10.33965/is2019_{201905L026}

Faqih, K. M. S. (2013). Exploring the influence of perceived risk and Internet self-efficacy on consumer online shopping intentions: Perspective of Technology Acceptance Model. *International Management Review*, 9(1),

Fukuyama, F. (1995). *Trust: The Social Virtues and the Creation of Prosperity.* New York, NY: Free Press.

Gefen, D., Karahanna, E., & Straub, D. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51–90.

Glikson, E., & Woolley, A. W. (2020). Human trust in artificial intelligence: Review of empirical research. *Academy of Management Annals*, 14(2), 627-660.

https://doi.org/10.5465/annals.2018.0057

Guskey, T. R. (1988). Teacher efficacy, self-concept, and attitudes toward the implementation of instructional innovation. *Teaching and Teacher Education*, 4(1), 63–69. https://doi.org/10.1016/0742-051X(88)90025-X

Hofstede, G., Neuijen, B., Ohayv, D. D., & Sanders, G. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. *Administrative Science Quarterly*, 35(2), 286–316. https://doi.org/10.2307/2393392

Hung, C. L., & Chou, J. L. (2014). Examining the cultural moderation on the acceptance of mobile commerce. *International Journal of Innovation and Technology Management*, 11(2), 1–19. https://doi.org/10.1142/S0219877014500102

Ifinedo, P. (2005). Measuring Africa' s e-readiness in the global networked economy: A nine-country data analysis. *International Journal of Education and Development Using Information and Communication Technology*, 1(1),

Kang, J. H., Matusik, J. G., Kim, T. Y., Phillips, J. M. (2016). Interactive effects of multiple organizational climates on employee innovative behavior in entrepreneurial firms: A cross-level investigation. *Journal of Business Venturing*, 31(6), 628–642. https://doi.org/10.1016/j.jbusvent.2016.08.002

Kang, J. H., Solomon, G. T., & Choi, D. Y. (2015). CEOs' leadership styles and managers' innovative behavior: Investigation of intervening effects in an entrepreneurial context. *Journal of Management Studies*, 52(4), 531–554. https://doi.org/10.1111/joms.12125

Khasawneh, O. Y. (2018). Technophobia without borders: The influence of technophobia and emotional intelligence on technology acceptance and the moderating influence of organizational climate. *Computers in Human Behavior*, 88, 210–218. https://doi.org/10.1016/j.chb.2018.07.007

Koller, M. (1988). Risk as a determinant of trust. *Basic and Applied Social Psychology*, 16(3), 265–276.

Lee, M. S. (2009). An empirical study about RFID acceptance–Focus on the employees in Korea. *World Academy of Science, Engineering and Technology*, 31, 1044–1053. https://doi.org/10.5281/zenodo.1078811

Lee, M., & Turban, E. (2001). A trust model for consumer internet shopping. *International Journal of Electronic Commerce*, 6(1), 75–91. https://doi.org/10.1080/10864415.2001.11044227

Lewicki, R. J., & Wiethoff, C. (2000). Trust, trust development, and trust repair. In M. Deutsch, & P. Coleman (Eds.), *The Handbook of Conflict Resolution: Theory and Practice* (pp. 86–107). San Francisco, CA: Jossey-Bass.

Li, Y. (2008). An empirical investigation on the determinants of e-procurement adoption in Chinese manufacturing enterprises. *International Conference on*

Management Science and Engineering 15th Annual Conference Proceedings, 32–37. https://doi.org/10.1109/ICMSE.2008.4668890.

Lin, H. F. (2007). Knowledge sharing and firm innovation capability: An empirical study. *International Journal of Manpower*, 28(3/4), 315–332. https://doi.org/10.1108/01437720710755272

Lingmont, D., & Alexiou, A. (2020). The contingent effect of job automating technology awareness on perceived job insecurity: Exploring the moderating role of organizational culture. *Technological Forecasting and Social Change*, 161, 120302. https://doi.org/10.1016/j.techfore.2020.120302

Low, C., Chen, Y., & Wu, M. (2011). Understanding the determinants of cloud computing adoption. *Industrial Management & Data Systems*, 111(7), 1006–1023. http://doi.org/10.1108/02635571111161262

Madhavan, P., & Phillips, R. R. (2010). Effects of computer self-efficacy and system reliability on user interaction with decision support systems. *Computers in Human Behavior*, 26(2), https://doi.org/10.1016/j.chb.2009.10.005

Marchewka, J., & Kostiwa, K. (2007). An application of the UTAUT model for understanding student perceptions using course management software. *Communications of the IIMA*, 7(2), 92–104.

Martin, B. (1996). Technological vulnerability. *Technology & Society*, 18(4), https://doi.org/10.1016/S0160-791X(96)00029-2

Matikiti, R., Mpinganjira, M., & Roberts-Lombard, M. (2018). Application of the Technology Acceptance Model and the Technology–Organization–Environment Model to examine social media marketing use in the South African tourism industry. *South Africa Journal of Information Management*, 20(1), a790. https://doi.org/10.4102/sajim.v20i1.790

Mayer, R., Davis, J., & Schoorman, F. (1995). An integrative model of organizational trust. *The Academy of Management Review*, 20(3), 709–734. https://doi.org/10.5465/amr.1995.9508080335

McCoy, S., Galletta, D., & King, W. (2007). Applying TAM across cultures: The need for caution. *European Journal of Information Systems*, 16(1), 81–90. https://doi.org/10.1057/palgrave.ejis.3000659

McKnight, D. H., & Chervany, N. L. (2001). What trust means in e-commerce customer relationships: An interdisciplinary conceptual typology. *International Journal of Electronic Commerce*, 6(2), 35–60. https://doi.org/10.1080/10864415.2001.11044235

McKnight, D. H., Carter, M., Thatcher, J. B, & Clay, P. L. (2011). Trust in a specific technology: An investigation of its components and measures. *ACM Transactions on Management Information Systems*, 2(2), 12–31. https://doi.org/10.1145/1985347.1985353

McKnight, D., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce: An integrative typology. *Information System Research*, 13(3), 334–359.

Meng, D., Min, Q., & Li, Y. (2008). Study on trust in mobile commerce adoption: A conceptual framework. *Proceedings of the 2008 International Symposium on Electronic Commerce and Security*, 246–249. https://doi.ieeecomputersociety.org/10.1109/ISECS.2008.54

Metwally, D., Ruiz-Palomino, P., Metwally, M., & Gartzia, L. (2019). How ethical leadership shapes employees' readiness to change: The mediating role of an organizational culture of effectiveness. *Frontiers in Psychology*, 10, 1–18. https://doi.org/10.3389/fpsyg.2019.02493

Michaelis, B., Stegmaier, R. & Sonntag, K. (2010). Shedding light on followers' innovation implementation behavior: The role of transformational leadership, commitment to change, and climate for initiative. *Journal of Managerial Psychology*, 25(4), 408–429. https://doi.org/10.1108/02683941011035304

Mishra, A. (1996). Organizational responses to crisis: The centrality of trust. In Kramer, Roderick, M., & Thomas T. (Eds.), *Trust in Organizations* (pp. 261–287). Newbury Park, CA: Sage.

Molinillo, S., & Japutra, A. (2017). Organizational adoption of digital information and technology: A theoretical review. *The Bottom Line*, 30(1), 33–46. https://doi.org/10.1108/BL-01-2017-0002

Mosley, D. C., Boyar, S. L., Carson, C. M., & Pearson, A. W. (2008). A production self-efficacy scale: An exploratory study. *Journal of Managerial Issues*, 20(2), 272–285.

Muir, B. M., & Moray, N. (1996). Trust in automation: Part II -Experimental studies of trust and human intervention in a process control simulation. *Ergonomics*, 39(3), 429–460. https://doi.org/10.1080/00140139608964474

Ngai, E. W., Law, C. C., Chan, S. C., & Wat, F. K. (2008). Importance of the internet to human resource practitioners in Hong Kong. *Personnel Review*, 37(1), 66–84. http://dx.doi.org/10.1108/00483480810839978

Oliveira, T., & Martins M. (2010). Understanding e-business adoption across industries in European countries. *Industrial Management & Data System*, 110(9), 1337–1354.

Orlikowski, W. J. (1992). The duality of technology: Rethinking the concept of technology in organizations. *Organization Science*, 3(3), 398–427.

Park, K., Park, N., & Heo, W. (2018). Factors influencing intranet acceptance in restaurant industry: Use of Technology Acceptance Model. *Consumer Sciences Faculty Publications*, 11(10), https://openprairie.sdstate.edu/consumersci_{pubs}/15

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3), https://doi.org/10.1080/10864415.2003.11044275

Qin, X., Shi, Y., Lyu, K., & Mo, Y. (2020). Using a TAM-TOE model to explore factors of Building Information Modelling (BIM) adoption in the construction industry. *Journal of Civil Engineering and Management*, 26(3), 259–277. https://doi.org/10.3846/jcem.2020.12176

Ramamoorthy, N., Kulkarni, S. P., Gupta, A., & Flood, P. C. (2007). Individualism–collectivism orientation and employee attitudes: A comparison of employees from the high-technology sector in India and Ireland. *Journal of International Management*, 13(2), 187–203. https://doi.org/10.2139/ssrn.2147356

Rogers, E. M. (1962). *Diffusion of Innovations*. New York, NY: Free Press of Glencoe.

Rupp, M. A., Michaelis, J. R., McConnell, D. S., & Smither, J. A. (2016). The impact of technological trust and self-determined motivation on intentions to use wearable fitness technology. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 60(1), 1434–1438. https://doi.org/10.1177/1541931213601329

Salanitri, D., Lawson, G., & Waterfield, B. (2016). The relationship between presence and trust in virtual reality. *Proceedings of the European Conference on Cognitive Ergonomics*, https://doi.org/10.1145/2970930.2970947

Schepers, J., & Wetzels, M. (2007). A meta-analysis of the technology acceptance model: Investigating subjective moderation effects. *Information & Management*, 44(1), https://doi.org/10.1016/j.im.2006.10.007

Scott, S., & Bruce, R. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *The Academy of Management Journal*, 37(3), 580–607. https://doi.org/10.5465/256701

Sun, S., Lee, P., & Law, R. (2019). Impact of cultural values on technology acceptance and technology readiness. *International Journal of Hospitality Management*, 77, 89–96. https://doi.org/10.1016/j.ijhm.2018.06.017

Sun, S., Lee, P. C., Law, R., & Zhong, L. (2020). The impact of cultural values on the acceptance of hotel technology adoption from the perspective of hotel employees. *Journal of Hospitality and Tourism Management*, 44, 61–69. https://doi.org/10.1016/j.jhtm.2020.04.012

Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, 22, 960–967. https://doi.org/10.1016/j.promfg.2018.03.137

Tams, S., Thatcher, J. B., & Craig, K. (2018). How and why trust matters in post-adoptive usage: The mediating roles of internal and external self-efficacy. *The Journal of Strategic Information Systems*, 27(2), 170–190. https://doi.org/10.1016/j.jsis.2017.07.004

Tan, W. K. A., & Sundarakani, B. (2020). Assessing Blockchain Technology application for freight booking business: A case study from Technology Acceptance Model perspective. *Journal of Global Operations and Strategic Sourcing*. Advance online publication. https://doi.org/10.1108/JGOSS-04-2020-0018

Tarhini, A., Hone, K., Liu, X., & Tarhini, T. (2017). Examining the moderating effect of individual-level cultural values on users' acceptance of E-learning in developing countries: A structural equation modeling of an extended technology acceptance model. *Interactive Learning Environments*, 25(3), https://doi.org/10.1080/10494820.2015.1122635

Tornatzky, L., Fleischer, M., & Chakrabarti, A. (1990). *Processes of Technological Innovation*. Lexington, MA: D.C. Heath & Company.

Tost, L. P., Gino, F., & Larrick, R. L. (2013). When power makes others speechless: The negative impact of leader power on team performance. *Academy of Management Journal*, https://doi.org/10.5465/amj.2011.0180

Tseng, S. M. (2017). Investigating the moderating effects of organizational culture and leadership style on IT-adoption and knowledge-sharing intention. *Journal of Enterprise Information Management*, 30(4), 583–604. https://doi.org/10.1108/JEIM-04-2016-0081

Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. https://doi.org/10.2307/30036540

Weng, C. H., & Tang, Y. (2014). The relationship between technology leadership strategies and effectiveness of school administration: An empirical study. *Computers & Education*, http://dx.doi.org/10.1016/j.compedu.2014.03.010.

Yan, J., Zhai, C., & Zhao, F. (2009). An empirical study on influence factors of organizations to adopt B2B E-marketplace in China. *Proceedings –International Conference on Management and Service Science*. https://doi.org/10.1109/ICMSS.2009.5302980.

Yang, Z., Sun, J., Zhang, Y., & Wang, Y. (2015). Understanding SaaS adoption from the perspective of organizational users: A tripod readiness model. *Computers in Human Behavior*, 45(4), 254–264. https://doi.org/10.1016/j.chb.2014.12.022

Yoon, S. J. (2002). The antecedents and consequences of trust in online-purchase decisions. *Journal of Interactive Marketing*, 16(2), 47–63. https://doi.org/10.1002/dir.10008

Yu, M. C., Mai, Q., Tsai, S. B., Dai, Y. (2018). An empirical study on the organizational trust, employee-organization relationship and innovative behavior from the integrated perspective of social exchange and organizational sustainability. *Sustainability*, 10(3), 864. https://doi.org/10.3390/su10030864

Yuan, Y. H., Tsai, S. B., Dai, C. Y., Chen, H. M., Chen, W. F., Wu, C.

H., ···Wang, J. (2017). An empirical research on relationships between subjective judgement, technology acceptance tendency and knowledge transfer. *PLoS ONE*, 12(9), e0183994. https://doi.org/10.1371/journal.pone.0183994

Yue, C. A., Men, L. R., & Ferguson, M. A. (2019). Bridging transformational leadership, transparent communication, and employee openness to change: The mediating role of trust. *Public Relations Review*, 45(3), 101779. https://doi.org/10.1016/j.pubrev.2019.04.012

Zhang, X., Han, X., Dang, Y., Meng, F., Guo, X., & Lin, J. (2017). User acceptance of mobile health services from users' perspectives: The role of self-efficacy and response-efficacy in technology acceptance. *Informatics for Health and Social Care*, 42(2), 194–206. https://doi.org/10.1080/17538157.2016.1200053

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, 26(4), 760–767. https://doi.org/10.1016/j.chb.2010.01.013

Note: Figure translations are in progress. See original paper for figures.