

THE EFFECTS OF DIGITAL LEADERSHIP AND DIGITAL SOCIAL CAPITAL ON TACIT KNOWLEDGE SHARING: THE MEDIATING ROLE OF PSYCHOLOGICAL SAFETY IN FEMALE-LED DIGITAL ORGANIZATIONS IN CHINA*

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Abstract

This study examines how digital leadership and digital social capital promote tacit knowledge sharing in digitally transforming Chinese organizations led by female managers, with psychological safety as a mediating mechanism. Four objectives guided the research: to test the direct effects of digital leadership and digital social capital on tacit knowledge sharing; to examine their effects on psychological safety; to test the mediating role of psychological safety; and to discuss how female managers use digitally mediated relational resources to facilitate knowledge exchange. A quantitative cross-sectional survey design was employed. Data were collected from 424 employees who worked under female managers in digital or digitally transforming organizations in China. Established five-point Likert scales were used to measure digital leadership, digital social capital, psychological safety, and tacit knowledge sharing. IBM SPSS was used for reliability analysis, descriptive statistics, correlation analysis, regression analysis,

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and bootstrap mediation testing with 5,000 resamples. The results show that digital leadership positively affects tacit knowledge sharing ($\beta = .939, p < .001$) and psychological safety ($\beta = .943, p < .001$). Digital social capital also positively affects tacit knowledge sharing ($\beta = .942, p < .001$) and psychological safety ($\beta = .940, p < .001$). 39.87% and 38.27% of the total effects, respectively. The findings indicate that digital leadership and digital social capital are most effective when employees perceive digitally mediated interaction as psychologically safe. The study contributes to digital leadership, social capital, and knowledge management research by explaining the socio-emotional mechanism through which female-led digital organizations activate tacit knowledge sharing.

Keywords: Digital Leadership, Digital Social Capital, Psychological Safety, Tacit Knowledge Sharing, Female Leadership, Digital China

Introduction

Digital transformation has reshaped how organizations coordinate work, exercise leadership, and exchange knowledge. Rather than relying only on face-to-face supervision and hierarchical communication, digitally transforming organizations increasingly depend on platform-mediated collaboration, enterprise communication systems, online project tools, and visible digital records. Recent reviews emphasize that digital transformation is not merely a technological investment; it changes organizational routines, roles, capabilities, and patterns of interaction (Hanelt et al., 2021; Plekhanov et al., 2023). Consequently, leadership in digital organizations should not be understood only as the ability to adopt new technologies. It also involves the ability to create meaningful communication, align people with digital routines, and maintain trust in work environments where interaction is visible, traceable, and less spontaneous.

Tacit knowledge sharing is particularly sensitive to these changes. Tacit knowledge is experience-based, context-specific, and difficult to codify; it is usually shared through explanation, observation, storytelling, problem solving, and mutual trust. Digital tools can expand opportunities for knowledge exchange, but they do not automatically make employees willing to disclose incomplete ideas, professional judgments, or lessons learned from mistakes. In virtual and platform-mediated teams, psychological safety becomes essential because employees may worry that their messages, questions, and errors will be permanently recorded or negatively evaluated. Recent research on virtual teams shows that trust, team psychological safety, and communication norms are closely connected with knowledge-sharing behavior (Hao et al., 2022; Lechner & Tobias Mortlock, 2022).

Female leadership provides an important context for this study. Women managers in China increasingly participate in digital transformation, yet leadership research often treats digital leadership as gender-neutral and pays limited attention to how female managers build relational influence through digital channels. Reports on gender and work continue to show that leadership opportunities remain unequal in many organizational settings (World Economic Forum, 2024). At the same time, digital platforms may provide female managers with new ways to construct professional visibility, coordinate distributed teams, and cultivate relational support. Therefore examining, female-led digital organizations can enrich understanding of how leadership, social capital, and psychological safety interact in the process of Tacit knowledge sharing.

Although digital leadership, social capital, psychological safety, and knowledge sharing have each been widely studied, three gaps remain. First, digital leadership studies often focus on technological capability or innovation outcomes, while the relational mechanisms that support vulnerable knowledge sharing are less developed. Second, digital social capital is frequently discussed

as network access or information flow, but its psychological function in digitally mediated work remains underexplored. Third, female-led digital organizations in China remain an insufficiently examined context for understanding how relational leadership practices operate under digital transformation. This study addresses these gaps by testing a mediation model in which psychological safety explains how digital leadership and digital social capital are translated into tacit knowledge sharing.

Objectives

(1) To examine the direct effects of digital leadership and digital social capital on tacit knowledge sharing within female-led digital organizations in China.

(2) To investigate the effects of digital leadership and digital social capital on employees' psychological safety in digitally mediated work environments.

(3) To test the mediating role of psychological safety in the relationships between digital leadership, digital social capital, and tacit knowledge sharing.

(4) To provide practical recommendations for female managers seeking to promote tacit knowledge sharing through digital leadership practices and digital relational resources.

Literature Review

Digital leadership refers to the capacity of leaders to use digital technologies to guide communication, coordinate work, support collaboration, and enable organizational adaptation. Recent research suggests that effective digital leadership combines technological understanding with relational and communication-oriented leadership behaviors (Bartsch et al., 2021; Lin, 2024; Wang et al., 2022). In digitally mediated organizations, leaders must structure communication channels, clarify expectations, encourage participation, and make contributions visible without intensifying surveillance pressure.

Tacit knowledge sharing requires more than access to digital systems. Employees must believe that their experiential knowledge is valued and that sharing professional judgment will not expose them to ridicule or punishment. Digital leadership can support this process by creating predictable communication routines, recognizing employees' contributions, and encouraging mutual learning. Therefore, this study proposes: H1: Digital Leadership has a positive effect on Tacit Knowledge Sharing.

Digital social capital refers to relational resources embedded in digital networks, including online bridging ties, bonding ties, trust, shared understanding, and access to professional information through digital platforms. Enterprise social media and digital collaboration systems can make expertise, participation history, and relational ties more visible, thereby supporting knowledge access and exchange (Alajmi & Alasousi, 2023; Safari et al., 2022; Shang & Sun, 2021).

For tacit knowledge sharing, digital social capital is important because it provides a relational foundation for asking questions, seeking advice, and sharing experience-based insights. Employees who stronger perceive digital ties are more likely to regard their team as a meaningful professional community rather than a collection of isolated platform users. Thus, the study proposes: H2: Digital Social Capital has a positive effect on Tacit Knowledge Sharing.

Psychological safety is the shared belief that a work environment is safe for interpersonal risk-taking. Recent literature shows that psychological safety is central to learning behavior, voice, collaboration, and performance, especially in uncertain or digitally mediated work environments (Edmondson & Bransby, 2023; Lechner & Tobias Mortlock, 2022). Digital communication can increase efficiency, yet it may also increase perceived visibility and permanence. Employees may hesitate to express doubts or incomplete ideas when they feel that digital records can be misinterpreted or used for evaluation.

Digital leadership can reduce such concerns through inclusive communication, supportive feedback, and clear norms for digital interaction. Digital social capital can also enhance psychological safety by strengthening trust, familiarity, and shared expectations among team members. Accordingly, this study proposes: H3: Digital Leadership has a positive effect on Psychological Safety. H4: Digital Social Capital has a positive effect on Psychological Safety.

Psychological Safety and Tacit Knowledge Sharing

Tacit knowledge sharing is inherently vulnerable because it often involves personal judgment, lessons learned from mistakes, and partially developed insights. In psychologically safe teams, employees feel more comfortable asking for help, challenging assumptions, and externalizing experience-based knowledge. Research on virtual teams confirms that psychological safety functions as a mechanism connecting relational trust with knowledge sharing behavior (Hao et al., 2022). Therefore, this study proposes: H5: Psychological Safety has a positive effect on Tacit Knowledge Sharing.

Mediating Role of Psychological Safety

The mediating logic of this study is that digital leadership and digital social capital create conditions for knowledge sharing, but these conditions become behaviorally effective only when employees interpret the environment as psychologically safe. Digital leadership supplies direction and communication structure, whereas digital social capital supplies relational resources. Psychological safety converts these resources into willingness to share tacit knowledge. Therefore, the following hypotheses are proposed: H6: Psychological Safety mediates the relationship between Digital Leadership and Tacit Knowledge Sharing. Knowledge Sharing.

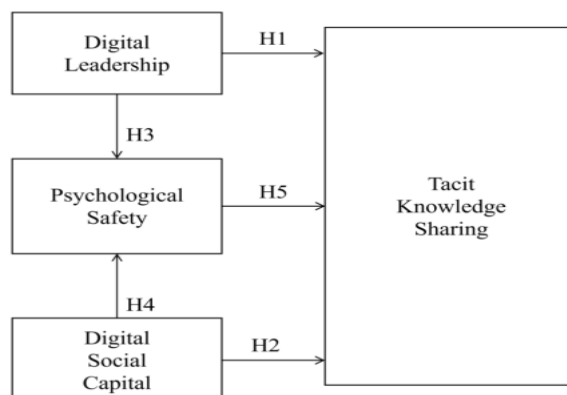


Figure1: Proposed Research Framework

Methodology

Research Design and Data Collection: This study adopted a quantitative cross-sectional survey design. The design was appropriate because the objective was to test hypothesized relationships among latent constructs using responses from employees in real organizational settings. A deductive approach was used: hypotheses were derived from recent digital transformation, social capital, safety psychology, and knowledge-sharing literature and then tested statistically.

Data were collected through an online questionnaire distributed to employees working in organizations undergoing digital transformation in China. The key screening criterion was that respondents had to report to a female manager and participate in digitally mediated work processes. Purposive sampling ensured theoretical relevance, while snowball distribution helped reach employees across different organizational settings. After excluding incomplete responses and careless answers, 424 valid questionnaires were retained. This sample size is acceptable for regression-based mediation analysis and bootstrap estimation (Hair et al., 2022; Hayes, 2022; Kline, 2023).

Measurement Instruments:All constructs were measured with five-point Likert-type scales ranging from 1 = strongly disagree to 5 = strongly agree. Digital Leadership was measured with nine items covering communication structuring, inclusiveness, and visibility/recognition. Digital Social Capital was measured with ten items covering bridging and bonding ties in digital networks. Psychological Safety was measured with six items reflecting interpersonal risk-taking and perceived safety to express work-related ideas. Tacit Knowledge Sharing was measured with six items reflecting employees' willingness to share experience-based knowledge, professional judgment, and non-codified know-how. Items were adapted from established literature and revised to fit digitally mediated organizational contexts.

Data analysis was conducted using IBM SPSS. First, reliability analysis was performed using Cronbach's alpha. Second, descriptive statistics and normality indicators were examined. Third, Pearson correlation analysis was used to assess preliminary relationships among variables. Fourth, regression analysis tested the direct effects. Finally, bootstrap mediation analysis with 5,000 resamples tested indirect effects. Mediation was considered statistically significant when the 95% confidence interval did not include zero. Because the correlations among several constructs were high, the results are interpreted as evidence of strong association within the proposed model rather than as proof of causal effects.

Results

Reliability and Descriptive Statistics, Table 1 shows that all variables achieved excellent internal consistency. Cronbach's alpha values ranged from .921 to .958, exceeding the recommended threshold of .70. These results indicate that the measurement items were internally consistent and suitable for subsequent analysis.

Table 1 Reliability Analysis Results (N = 424)

Variable	Items	Cronbach's α	Reliability Level
Digital Social Capital	10	.958	Accept
Digital Leadership	9	.953	Accept
Psychological Safety	6	.933	Accept
Tacit Knowledge Sharing	6	.921	Accept

Descriptive statistics (Table 2) show that respondents generally considered all constructs to be at a moderate to high level (on a 5-point scale, with a mean between 3.247 and 3.274). The standard deviation ranged from 1.084 to 1.128, and the skewness (-0.383 to -0.312) and kurtosis (-1.002 to -0.907) were both within acceptable thresholds, indicating that the data approximate a normal distribution and are suitable for parametric analysis.

Table 2 Descriptive Statistics and Correlation Matrix

Variable	M	SD	Skewness	Kurtosis	1	2	3
1. DSC	3.272	1.092	-0.383	-0.907	1		
2. DL	3.247	1.119	-0.319	-1.002	.953***	1	
3. PS	3.274	1.128	-0.327	-0.983	.940***	.943***	1
4. TKS	3.268	1.084	-0.312	-0.933	.942***	.939***	.930***

Note. N = 424. ** $p < 0.001$. DSC = Digital Social Capital; DL = Digital Leadership; PS = Psychological Safety; TKS = Tacit Knowledge Sharing.*

Correlation analysis reveals strong positive and significant relationships among all variables (all $p < 0.001$). While correlation coefficients are relatively high (ranging from 0.930 to 0.953), these values are theoretically consistent with the close interrelationships among leadership behavior, digital relational resources, and team psychological climate in digitally mediated contexts. Variance inflation factor (VIF) diagnostics were within acceptable thresholds, indicating that multicollinearity is unlikely to bias regression estimates.

Regression analyses provide consistent and robust evidence for all hypothesized direct relationships (Table 3).

Table 3 Regression Results for Direct Effects

Hypothesis	Path	β	R^2	p	Result
H1	DL $\rightarrow$ TKS	0.939	0.883	$<.001$	Supported
H2	DSC $\rightarrow$ TKS	0.942	0.887	$<.001$	Supported
H3	DL $\rightarrow$ PS	0.943	0.889	$<.001$	Supported
H4	DSC $\rightarrow$ PS	0.940	0.883	$<.001$	Supported
H5	PS $\rightarrow$ TKS	0.397*	—	$<.001$	Supported

Note. When controlling for DL. $\beta = 0.384$ when controlling for DSC.*

H1 and H2 are strongly supported. Digital leadership exerts a strong positive influence on tacit knowledge sharing ($\beta = 0.939$, $p < 0.001$, $R^2 = 0.883$), as does digital social capital ($\beta = 0.942$, $p < 0.001$, $R^2 = 0.887$). These results highlight the critical role of both digitally competent leadership and embedded relational resources in facilitating experience-based knowledge exchange.

H3 and H4 are also strongly supported. Digital leadership positively predicts psychological safety ($\beta = 0.943$, $p < 0.001$, $R^2 = 0.889$), as does digital social capital ($\beta = 0.940$, $p < 0.001$, $R^2 = 0.883$). These findings suggest that both

leadership behaviors and network resources significantly contribute to creating psychologically secure team environments.

H5 is confirmed: psychological safety significantly predicts tacit knowledge sharing when included alongside independent variables ($\beta = 0.397$, $p < 0.001$ when controlling for DL; $\beta = 0.384$, $p < 0.001$ when controlling for DSC). This confirms that a psychologically safe environment is a key condition for encouraging employees to share non-codified, experience-based knowledge.

Hypothesis Testing: Mediation Effects

Bootstrap mediation analysis (5,000 resamples) reveals significant partial mediation in both proposed pathways (Table 4).

Table 4 Summary of Mediation Effects

Path	Indirect Effect	95% CI	Effect Ratio	Mediation Type	Result
DL → PS → TKS	0.3629	0.2725, 0.4539	39.87%	Partial	H6 Supported
DSC → PS → TKS	0.3578	0.2694, 0.4451	38.27%	Partial	H7 Supported

Detailed mediation results for Digital Leadership (Table 5): Digital leadership significantly predicts both psychological safety (a path: $B = 0.9506$, $SE = 0.0163$, $\beta = 0.943$, $p < .001$) and tacit knowledge sharing (total effect c: $B = 0.9103$, $SE = 0.0162$, $\beta = 0.939$, $p < .001$). After introducing psychological safety, the direct effect decreases but remains significant (direct effect c': $B = 0.5474$, $SE = 0.0449$, $\beta = 0.565$, $p < .001$), indicating partial mediation. The indirect effect ($a \times b = 0.3629$) accounts for 39.87% of the total effect.

Table 5 Mediation Analysis — Digital Leadership Model

Path	B	SE	β	p
DL $\rightarrow$ PS (a)	0.9506	0.0163	0.943	<.001
PS $\rightarrow$ TKS (b)	0.3818	0.0445	0.397	<.001
DL $\rightarrow$ TKS (total effect c)	0.9103	0.0162	0.939	<.001
DL $\rightarrow$ TKS (direct effect c')	0.5474	0.0449	0.565	<.001

Detailed mediation results for Digital Social Capital (Table 6): Digital social capital significantly predicts psychological safety (a path: $B = 0.9705$, $SE = 0.0172$, $\beta = 0.940$, $p < .001$) and tacit knowledge sharing (total effect c: $B = 0.9350$, $SE = 0.0162$, $\beta = 0.942$, $p < .001$). The direct effect remains significant after introducing the mediator (c': $B = 0.5772$, $SE = 0.0438$, $\beta = 0.581$, $p < .001$), confirming partial mediation. The indirect effect ($a \times b = 0.3578$) accounts for 38.27% of the total effect.

Table 6 Mediation Analysis — Digital Social Capital Model

Path	B	SE	β	p
DSC $\rightarrow$ PS (a)	0.9705	0.0172	0.940	<.001
PS $\rightarrow$ TKS (b)	0.3687	0.0424	0.384	<.001
DSC $\rightarrow$ TKS (total effect c)	0.9350	0.0162	0.942	<.001
DSC $\rightarrow$ TKS (direct effect c')	0.5772	0.0438	0.581	<.001

Model fit is strong for both mediation models: DL + PS $\rightarrow$ TKS ($R^2 = 0.900$, $F = 1896.027$, $p < .001$) and DSC + PS $\rightarrow$ TKS ($R^2 = 0.904$, $F = 1988.103$, $p < .001$), explaining approximately 90% of the variance in tacit knowledge sharing.

All seven hypotheses are supported. The findings consistently demonstrate that psychological safety functions as a significant partial mediator in both proposed relationships. The indirect effects are substantial and statistically robust, while direct effects remain significant, indicating that both mediated and direct pathways jointly contribute to tacit knowledge sharing. The core mechanism identified is: Digital resources (leadership capabilities and social capital) → Psychological safety → Tacit knowledge sharing.

Discussion

The findings support the proposed mediation model. First, Digital Leadership showed a strong positive relationship with Tacit Knowledge Sharing. This result suggests that employees are more willing to share experience-based knowledge when female managers use digital tools to clarify communication, encourage participation, and recognize contributions. The findings are consistent with recent digital leadership studies emphasizing that leadership effectiveness in digital environments depends on both technological coordination and relational influence (Bartsch et al., 2021; Lin, 2024; Wang et al., 2022).

Second, Digital Social Capital was strongly related to Tacit Knowledge Sharing. This indicates that digitally embedded relationships, network visibility, and online bridging/bonding ties can support knowledge flow. When employees perceive that digital platforms strengthen professional connections rather than merely record work tasks, they are more likely to share tacit knowledge. This finding is consistent with recent research on enterprise social media, social capital, and knowledge exchange (Alajmi & Alasousi, 2023; Safari et al., 2022; Shang & Sun, 2021).

Third, Psychological Safety partially mediated both relationships. The direct effects remained significant after Psychological Safety was included, which means that Digital Leadership and Digital Social Capital influence knowledge

sharing both directly and indirectly. The indirect effects were substantial, accounting for nearly two-fifths of the total effect in both models. This supports the argument that psychological safety is a key socio-emotional mechanism in digital organizations. Employees may have access to platforms and relational networks, but tacit knowledge sharing requires perceived interpersonal safety (Edmondson & Bransby, 2023; Hao et al., 2022; Lechner & Tobias Mortlock, 2022).

Fourth, the female-led organizational context adds theoretical value. The study does not claim that all female managers lead in the same way. Rather, it shows that in teams led by female managers, digital leadership and digital social capital can operate as relational resources that support psychological safety and knowledge sharing. This finding helps extend digital leadership research beyond a technology-centered perspective and contributes to discussions on women's leadership in digital transformation contexts.

The correlation coefficients among Digital Leadership, Digital Social Capital, Psychological Safety, and Tacit Knowledge Sharing are very high. This may reflect the integrated nature of digitally mediated work, but it may also construct potential construct or common method bias. Future studies should use multi-source data, longitudinal designs, and indicate confirmatory factor analysis or structural equation modeling to test discriminant validity more rigorously overlaply.

Recommendation

Organizations should develop digital leadership training that goes beyond the use of technology platforms. They should support female managers in building inclusive digital communication, timely feedback mechanisms, transparent decision-making processes, and recognition systems that make employees feel valued rather than monitored.

Digital social capital should be consciously cultivated. Organizations can create structured online communities, cross-departmental knowledge groups, mentorship spaces, and project-based collaboration channels. These mechanisms help transform digital platforms from management tools into relational infrastructure for knowledge sharing.

Psychological safety should be considered a governance condition for digital knowledge management. Managers should establish clear, respectful norms for digital interactions, encourage questioning, protect employees from blame during constructive discussions of mistakes, and avoid using digital records as punitive monitoring tools.

Institutional support should be provided for female managers to leverage their digital leadership. This includes access to digital decision-making roles, leadership development opportunities, mentorship networks, and fair recognition of their relational leadership contributions in performance evaluations.

Future research should expand this model by incorporating multi-level data, objective digital interaction records, team performance indicators, and comparative samples of male and female leadership teams. This design will help clarify whether the mechanisms discovered in this study apply only to digital organizations led by women, or whether they can be generalized to other leadership situations.

References

Alajmi, B. M., & Alasousi, S. O. (2023). Cultivating knowledge sharing among academics: The role of social media and the impact of social capital. *Journal of Electronic Resources Librarianship*, 35(1), 28–46. <https://doi.org/10.1080/1941126X.2023.2165241>

- Bartsch, S., Weber, E., Büttgen, M., & Huber, A. (2021). Leadership matters in crisis-induced digital transformation: How to lead service employees effectively during the COVID-19 pandemic. *Journal of Service Management*, 32(1), 71–85. <https://doi.org/10.1108/JOSM-05-2020-0160>
- Edmondson, A. C., & Bransby, D. P. (2023). Psychological safety comes of age: Observed themes in an established literature. *Annual Review of Organizational Psychology and Organizational Behavior*, 10, 55–78. <https://doi.org/10.1146/annurev-orgpsych-120920-055217>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.)*. Sage.
- Hanelt, A., Bohnsack, R., Marz, D., & Marante, C. A. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies*, 58(5), 1159–1197. <https://doi.org/10.1111/joms.12639>
- Hao, Q., Zhang, B., Shi, Y., & Yang, Q. (2022). How trust in coworkers fosters knowledge sharing in virtual teams? A multilevel moderated mediation model of psychological safety, team virtuality, and knowledge sharing self-efficacy. *Frontiers in Psychology*, 13, 899142. <https://doi.org/10.3389/fpsyg.2022.899142>
- Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (3rd ed.)*. Guilford Press.
- Kline, R. B. (2023). *Principles and practice of structural equation modeling (5th ed.)*. Guilford Press.
- Lechner, A., & Tobias Mortlock, J. M. (2022). How to create psychological safety in virtual teams. *Organizational Dynamics*, 51(2), 100849. <https://doi.org/10.1016/j.orgdyn.2021.100849>
- Lin, Q. (2024). Digital leadership: A systematic literature review and future research agenda. *European Journal of Innovation Management*. <https://doi.org/10.1108/EJIM-07-2023-0522>

- López-Figueroa, J. C., Ochoa-Jiménez, S., Palafox-Soto, M. O., & Hernandez Munoz, D. S. (2025). Digital leadership: A systematic literature review. *Administrative Sciences*, 15(4), 129. <https://doi.org/10.3390/admsci15040129>
- Plekhanov, D., Franke, H., & Netland, T. H. (2023). Digital transformation: A review and research agenda. *European Management Journal*, 41(6), 821–844. <https://doi.org/10.1016/j.emj.2022.09.007>
- Safari, N., Díaz Andrade, A., & Techatassanasoontorn, A. A. (2022). Visibility of knowledge in social media: Conceptualization and instrument development. *Information & Management*, 59(6), 103676. <https://doi.org/10.1016/j.im.2022.103676>
- Shang, R.-A., & Sun, Y. (2021). So little time for so many ties: Fit between the social capital embedded in enterprise social media and individual learning requirements. *Computers in Human Behavior*, 120, 106615. <https://doi.org/10.1016/j.chb.2020.106615>
- Wang, T., Lin, X., & Sheng, F. (2022). Digital leadership and exploratory innovation: From the dual perspectives of strategic orientation and organizational culture. *Frontiers in Psychology*, 13, 902693. <https://doi.org/10.3389/fpsyg.2022.902693>
- World Economic Forum. (2024). *Global gender gap report 2024*. World Economic Forum.