The Mediating Role of Organizational Agility in the Relationship between Intellectual Capital and Innovation Performance in IT Firms

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ABSTRACT

Purpose: The purpose of this study is to examine the mediating effect of organizational agility (OA) on the relationship between intellectual capital (IC) and innovation performance (IP) in information technology (IT) firms. Based on the Resource Based View (RBV) and Dynamic Capabilities Theory, the study examines the joint effect of human capital, structural capital and relational capital on innovation outcomes, both directly and indirectly through the enabling role of organizational agility.

Design/Methodology/Approach: A quantitative cross-sectional survey design was employed. The data were collected from 387 senior managers and knowledge workers from IT firms in emerging and developed countries. The proposed conceptual model was tested using Partial Least Squares Structural Equation Modelling (PLS-SEM) using SmartPLS 4.0. Measurement validity was examined through confirmatory factor analysis (CFA), and mediation was assessed using bootstrapping procedures with 5000 resample.

Findings: The findings show that all three dimensions of intellectual capital (human, structural and relational) have a positive and significant impact on innovation performance. Importantly, organizational agility plays a significant mediating role in these relationships, especially the relationships from human capital to innovation performance and structural capital to innovation performance. The R2 for organizational agility is 0.61 and for innovation performance is 0.74 and this is considered as high predictive power.

Originality/Value: The paper is a novel contribution as it places organizational agility as a strategic bridge connecting intellectual resources and innovation outputs in the IT sector, which has been under-investigated. The findings provide practical guidance for IT executives seeking to use knowledge assets to drive competitive innovation.

Keywords: Intellectual Capital, Human Capital, Structural Capital, Relational Capital, Organizational Agility, Innovation Performance, IT Firms, PLS-SEM, Dynamic Capabilities

I INTRODUCTION

Recent changes inside modern digital economies fundamentally shift how technology firms compete. Eras defined by fast evolution plus aggressive competition show organizational capacity for sustained innovation stands as a primary requirement for long term corporate viability (Teece, Pisano & Shuen, 1997; Nonaka & Takeuchi, 1995). Proper creation fails without being firmly anchored within intellectual base foundations plus structural adaptability. Intellectual capital, grouped as various knowledge assets found across an entity, ranks as a known primary influence toward gaining competitive superiority (Bontis, 1998; Stewart, 1997).

Combining staff skills, professional experience, codified wisdom residing within processes, plus relations shared among clients or partners, intellectual assets represent hidden power feeding company operations (Edvinsson & Malone, 1997). Meanwhile, corporate agility represents capacity within an entity to sense changing external environments then respond with speed plus precision as a middle step linking available

resources toward final gains (Sambamurthy, Bharadwaj & Grover, 2003; Tallon & Pinsonneault, 2011).

Within information technology fields where high volatility plus massive technical shifting exist, agility acts less like a requested feature while staying as a basic survival demand. Professional teams rely upon speed as basic defense tools throughout difficult cycles instead of passive modes within global competition where constant adjustment dictates success rates.

1.1 Research Objectives

The specific objectives of this study are:

1. To investigate how innovation performance in IT companies is directly impacted by aspects of intellectual capital.
2. To look into how organizational agility is affected by aspects of intellectual capital.
3. To evaluate how organizational agility directly affects innovation performance.
4. To investigate how organizational agility influences the link between intellectual capital and innovation performance.

1.2 Significance of the Study

This study makes three contributions to the literature on innovation and knowledge management. By operationalizing organizational agility as a capability that transforms intellectual resources into innovative outputs, it theoretically expands on the Dynamic Capabilities Theory. In terms of methodology, it uses PLS-SEM, a strict technique appropriate for intricate mediation models with latent variables. In practical terms, it gives IT leaders evidence-based insights about which IC components should be prioritized in order to foster innovation driven by agility.

II LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Theoretical Foundations

2.1.1 Resource-Based View (RBV)

According to the Resource-Based View, which was developed by Penrose in 1959 and codified by Barney in 1991, firm-specific resources that are valuable, rare, unique, and non-substitutable (VRIN) are the basis of sustained competitive advantage. These VRIN characteristics are satisfied by intellectual capital as a collection of knowledge-based intangible resources, which makes it a reasonable predictor of better organizational outcomes, including innovation performance (Barney, 1991; Wernerfelt, 1984). RBV offers a potent explanatory paradigm in the IT setting, where relational networks and human skills are essential resources.

2.1.2 Dynamic Capabilities Theory

Dynamic Capabilities Theory (DCT) describes how businesses deploy and reconfigure resources in response to environmental dynamic, whereas RBV explains the static value of resources (Teece et al., 1997; Eisenhardt & Martin, 2000). One way to think of organizational agility is as a higher-order dynamic skill that allows businesses to recognize, capture, and reorganize knowledge-based resources in order to pursue innovation. With agility serving as the working mechanism, DCT thus offers the theoretical link between IC and innovation.

2.1.3 Knowledge-Based View (KBV)

By viewing information as the most strategically important organizational resource, the information-Based View expands on RBV (Grant, 1996; Kogut & Zander, 1992). From a KBV perspective, innovation is a process of creating and combining knowledge. The knowledge recombination required for innovation is directly made possible by IC dimensions, especially human capital (tacit knowledge) and structural capital (explicit knowledge systems). This perspective supports the idea that IC influences innovation performance both directly and indirectly (via agility).

2.2 Intellectual Capital

Since Edvinsson and Malone (1997) initially operationalized intellectual capital as a tripartite construct, it has been conceptualized in a variety of ways. Human capital, structural capital, and relational capital are the three components identified by the most popular taxonomy (Bontis, 1998; Subramaniam & Youndt, 2005).

2.2.1 Human Resources (HC)

The collective competences, skills, knowledge, creativity, and problem-solving abilities ingrained in organizational personnel are referred to as human capital (Bontis, 1998). Given the knowledge-intensive nature of software development, systems integration, and technology consulting, human capital is especially important in IT organizations. increased HC levels are consistently linked to increased innovation outputs, according to earlier research (Subramaniam & Youndt, 2005; Chen, Cheng & Hwang, 2005). HC empowers staff members to recognize opportunities, produce original concepts, and carry out innovative solutions—all essential components of innovation performance.

2.2.2 Structural Capital (SC)

The organizational procedures, databases, intellectual property, management systems, and cultural norms that facilitate the generation and dissemination of information are all included in structural capital (Edvinsson & Malone, 1997). Structural capital, which makes up the organization's memory and codified knowledge base, stays with the company after employees depart, in contrast to human capital. By offering the framework for knowledge exchange, coordination, and institutionalized learning, strong structural capital promotes systematic innovation (Youndt, Subramaniam & Snell, 2004).

2.2.3 Relational Capital (RC)

The information ingrained in connections with external stakeholders, including as clients, vendors, strategic partners, trade associations, and academic institutions, is referred to as relational capital (Bontis, 1998; Nahapiet & Ghoshal, 1998). Relational capital serves as a channel for open-innovation networks, co-innovation, and market intelligence for IT companies. Organizations with strong relational capital can broaden the innovation frontier by gaining access to a variety of knowledge sources that enhance internal capabilities (Tsai & Ghoshal, 1998; Zander & Kogut, 1995).

2.3 Organizational Agility

According to Sambamurthy et al. (2003) and Worley & Lawler (2010), organizational agility is the ability of a company to quickly identify and react to opportunities, threats, and changes in the environment through adaptable organizational processes, flexible structures, and proactive resource redeployment. Digital platform capabilities, real-time data analytics, and modular IT architectures have all been connected to IT-enabled agility in the information systems literature (Tallon & Pinsonneault, 2011; Lu & Ramamurthy, 2011).

Sensing agility (the capacity to identify market signals), decision agility, acting agility (the ability to quickly implement strategic changes), and learning agility (the ability for quick organizational learning and knowledge integration) are some of the dimensions that have been used to operationalize organizational agility. High agility translates into quicker product development cycles, more responsive customer solutions, and proactive competitive positioning for IT companies operating in fiercely competitive marketplaces.

2.4 Performance of Innovation

An organization's ability to create and market new goods, services, procedures, and business models is referred to as its innovation performance (Damanpour, 1991; OECD Oslo Manual, 2018). Product innovation (new software products, platforms, and digital services), process innovation (DevOps, CI/CD pipelines, and agile development methodologies), and business model innovation (cloud subscriptions, platform ecosystems, SaaS transitions) are all included in innovation performance in the IT sector. According to Wang and Ahmed (2004), sustained innovation performance is increasingly viewed as a multifaceted concept that encompasses both the volume and caliber of an organization's innovative outputs.

2.5 Development of Hypotheses

2.5.1 Innovation Performance and Intellectual Capital

There has been a lot of empirical research on the connection between IC and innovation. Subramaniam and Youndt (2005) showed that radical and incremental innovation are significantly predicted by human capital and social capital, which is comparable to relational capital. All IC aspects have a beneficial impact on business performance in technology enterprises, according to Chen et al. (2005). More recently, Xu and Li (2022) verified that process innovation in digital enterprises is mostly driven by structural capital. Thus, we postulate:

H1a: Innovation performance is positively and significantly impacted by human capital.

H1b: Innovation performance is positively and significantly impacted by structural capital.

H1c: Innovation performance is positively and significantly impacted by relational capital.

2.5.2 Organizational Agility and Intellectual Capital

Organizational agility is founded on the knowledge foundation provided by intellectual capital characteristics. Through quick problem framing and solution development, human capital—which is defined by informed and competent workers—directly improves sensing and decision-making agility (Tallon & Pinsonneault, 2011). Structural capital speeds up reaction mechanisms and lowers coordination costs through well-designed knowledge systems and procedures. By extending the organization's external intelligence networks, relational capital makes it possible to identify changes in the environment early on. We speculate:

H2a: Organizational agility is positively and significantly impacted by human capital.

H2b: Organizational agility is positively and significantly impacted by structural capital.

H2c: Organizational agility is positively and significantly impacted by relational capital

2.5.3 Innovation Performance and Organizational Agility

Because of their structural flexibility and ability to respond quickly, agile businesses are better positioned to test, refine, and commercialize ideas (Worley & Lawler, 2010; Harraf et al., 2015). Agility has been shown to have favorable benefits on innovation measures such as first-mover advantage, patent output, and the speed at which new products are developed (Lu & Ramamurthy, 2011; Overby, Bharadwaj & Sambamurthy, 2006). We speculate:

H3: Innovation performance is positively and significantly impacted by organizational agility

2.5.4 Theories of Mediation

The idea behind mediation's conceptual logic is that intellectual capital largely generates innovation performance by improving organizational agility, which then converts knowledge assets into innovative outputs. Without agility, IC might not be fully mobilized and stay as latent potential. Adaptive innovation processes are catalysed by IC dimensions using agility as the conversion mechanism. We speculate:

H4a: The relationship between human capital and innovation performance is mediated by organizational agility.

H4b: The relationship between structural capital and innovation performance is mediated by organizational agility.

H4c: The relationship between relational capital and innovation performance is mediated by organizational agility.

III RESEARCH METHODOLOGY

According to the suggested conceptual model, innovative performance is the endogenous outcome variable, organizational agility is the mediating variable, and intellectual capital—which has three sub-constructs: human capital, structural capital, and relational capital—is the exogenous latent variable. The structural model with all proposed routes is shown in Figure 1.

Human Capital (HC)

Structural Capital (SC) → Organizational Agility (OA) → Innovation Performance (IP)

Relational Capital (RC)

Direct paths: HC→IP, SC→IP, RC→IP |

Mediated paths: HC→OA→IP, SC→OA→IP, RC→OA→IP

IV RESEARCH METHODOLOGY

4.1 Design of Research

Based on a positivist epistemological perspective, this study uses a quantitative, cross-sectional survey research design. The deductive method was used, starting with hypotheses generated from theory and moving on to empirical validation. Cross-sectional data was gathered all at once, making it suitable for relational and descriptive analysis of the suggested structural model.

4.2 Sampling and Population

Senior managers, IT project managers, product development leads, and knowledge workers from IT companies in the fields of software development, IT consulting, cloud services, cybersecurity, and digital transformation made up the target population. To guarantee regional and contextual diversity, companies from both developed economies (USA, UK, Germany) and emerging markets (India, Malaysia, UAE, Nigeria) were included.

A stratified random sampling technique was used, stratifying by geographic location and business size (small: <50, medium: 50-250, large: >250 employees). The 10-times rule for PLS-SEM (Hair et al., 2017) and power analysis for medium effect sizes ($f^2 = 0.15$) at 80% power and $\alpha = 0.05$ significance level were used to calculate the minimum required sample size, which resulted in a minimum of 340 respondents. After eliminating incomplete and outlier-affected surveys, 387 valid replies were kept out of the 450 questionnaires that were sent (response rate: 86%).

4.3 Instrument for Measurement

A thorough process of item production, expert evaluation (five academic experts and three industry practitioners), pilot testing (n = 35), and refinement was used to create the survey instrument. Validated scales from earlier research that were modified for the IT sector setting were used to measure each construct. For every issue, a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) was employed.

Construct	Sample Item	Items (n)	Source
Human Capital	Employees in our firm possess high levels of expertise and specialized knowledge relevant to IT.	5	Bontis (1998); Subramaniam & Youndt (2005)
Structural Capital	Our firm has well-documented knowledge systems and databases that support decision-making.	5	Edvinsson & Malone (1997)
Relational Capital	Our firm maintains strong collaborative relationships with key technology partners and clients.	5	Tsai & Ghoshal (1998)
Organizational Agility	Our firm can rapidly reconfigure resources to respond to unexpected market changes.	6	Tallon & Pinsonneault (2011)
Innovation Performance	Our firm consistently introduces new digital products/services ahead of competitors.	6	Damanpour (1991); Wang & Ahmed (2004)

Table 1: Measurement Instrument Summary

4.4 Data Analysis Approach

Following the two-stage method suggested by Anderson and Gerbing (1988) for SEM-based

investigations, data analysis was carried out in two consecutive stages: (1) Measurement Model Assessment and (2) Structural Model Assessment.

Step 1: Evaluation of the Measurement Model (CFA)

SmartPLS 4.0 was used to conduct Confirmatory Factor Analysis (CFA) in order to evaluate the measurement model's psychometric qualities. Cronbach's alpha (α) and composite reliability (CR) were used to evaluate reliability, with thresholds of α and CR ≥ 0.70 (Hair et al., 2017). Factor loadings (λ ≥ 0.70) and average variance extracted (AVE ≥ 0.50) were used to evaluate convergent validity. The Fornell-Larcker criterion and Heterotrait-Monotrait (HTMT) ratios were used to assess discriminant validity, with HTMT < 0.85 serving as the cutoff (Henseler, Ringle & Sarstedt, 2015). Harman's single-factor test and a marker variable technique were used to evaluate common method bias.

Step 2: Evaluation of the Structural Model (PLS-SEM)

Bootstrapping with 5,000 resamples was used to assess the structural model and produce t-statistics and confidence intervals for path coefficients. Using bias-corrected bootstrapped confidence intervals, mediation analysis was conducted using the methodology described by Preacher and Hayes (2008). SRMR (≤ 0.08) and NFI (≥ 0.90) were used to evaluate model fit. Additionally reported were effect sizes (f^2) and predictive relevance (Q^2 via blindfolding).

V RESULTS

5.1 Descriptive Statistics and Common Method Bias

The mean age of the 387 respondents in the sample was 34.7 years (SD = 7.2), with 61.2% of them being men and 38.8% being women. 52% were technical leads or senior developers, while about 48% were in senior management roles. The range of firm tenure was 2–22 years (M = 7.8 years). Harman's single-factor test revealed a dominating factor that accounted for 26.3% of the total variance, which is far less than the 50% criterion and indicates that common technique bias is not a serious issue.

Construct	Mean	SD	α	CR	AVE	Min λ
Human Capital	3.92	0.71	.83	.87	.57	.73
Structural Capital	3.74	0.68	.81	.85	.53	.71
Relational Capital	3.68	0.73	.80	.84	.51	.72
Organizational Agility	3.83	0.75	.86	.90	.59	.76
Innovation Performance	3.77	0.69	.88	.91	.62	.78

Table 2: Descriptive Statistics and Measurement Model Indicators

5.2 Measurement Model Results

High internal consistency was confirmed by all Cronbach's alpha values over 0.80 and composite reliability values ranging from 0.84 to 0.91. The convergent validity criteria were met by AVE values, which varied from 0.51 to 0.62. Every factor loading was higher than 0.70. The square root of each construct's AVE exceeded its correlations with all other constructs, satisfying the Fornell-Larcker criterion and establishing discriminant validity. The HTMT ratios for all construct pairs stayed below 0.85. SRMR = 0.061 and NFI = 0.934 were acceptable model fit indices.

5.3 Results of the Structural Model

The direct impacts test results are shown in Table 3. Every direct approach that was proposed was statistically significant ($p < 0.05$). Both organizational agility ($\beta = 0.41$, $p < 0.001$) and innovation performance ($\beta = 0.33$, $p < 0.001$) were most strongly impacted by human capital. Organizational agility ($\beta = 0.29$, $p < 0.01$) and innovation performance ($\beta = 0.24$, $p < 0.01$) were both substantially predicted by structural capital. Organizational agility ($\beta = 0.21$, $p < 0.05$) and innovation performance ($\beta = 0.19$, $p < 0.05$) were both significantly but rather weakly impacted by relational capital. Innovation performance was significantly impacted by organizational agility ($\beta = 0.48$, $p < 0.001$).

Hypothesis / Path	β (Std.)	SE	t-value	p-value	Decision
H1a: HC → IP	0.33	.062	5.32	<.001	Supported ***
H1b: SC → IP	0.24	.057	4.21	.002	Supported **
H1c: RC → IP	0.19	.061	3.11	.021	Supported *
H2a: HC → OA	0.41	.058	7.07	<.001	Supported ***
H2b: SC → OA	0.29	.064	4.53	<.001	Supported ***
H2c: RC → OA	0.21	.059	3.56	.030	Supported *
H3: OA → IP	0.48	.055	8.73	<.001	Supported ***

Table 3: Direct Path Coefficients. *** p<.001, ** p<.01, * p<.05. HC=Human Capital; SC=Structural Capital; RC=Relational Capital; OA=Organizational Agility; IP=Innovation Performance.

5.4 Results of the Mediation Analysis

The mediation test findings utilizing bias-corrected bootstrapped confidence intervals (5,000 resamples) are shown in Table 4. All three IC-innovation correlations were substantially mediated by organizational agility. The strongest of the three mediated channels, the indirect effect of human capital on innovation performance through OA was 0.197 (95% CI [0.142, 0.261]). Relational capital had an indirect effect of 0.101 (95% CI [0.048, 0.167]) while structural capital had an indirect effect of 0.139 (95% CI [0.088, 0.201]). The mediation is partial rather than full for all three paths since direct effects were still substantial after OA was added. This suggests that OA acts as a complimentary mediator in addition to direct IC-innovation effects rather than a competing one.

Indirect Path	Indirect β	95% LL	95% UL	VAF%	Decision
H4a: HC → OA → IP	0.197	0.142	0.261	37.4 %	Partial Mediation
H4b: SC → OA → IP	0.139	0.088	0.201	36.7 %	Partial Mediation
H4c: RC → OA → IP	0.101	0.048	0.167	34.7 %	Partial Mediation

Table 4: Mediation Analysis Results. LL = Lower Limit; UL = Upper Limit; VAF = Variance Accounted for by Mediator. All CI exclude zero, confirming significant mediation

According to Hair et al. (2017), the variance accounted for (VAF) by organizational agility varied from 34.7% to 37.4%, classified as partial mediation (VAF between 20% and 80%). Variance explained: R2 for innovation performance is 0.74 and R2 for organizational agility is 0.61. The model's good predictive relevance was confirmed by the predictive relevance Q^2 values (HC: 0.48; SC: 0.42; RC: 0.39; OA: 0.51; IP: 0.55) all exceeding zero. The range of effect sizes (f^2) was small (RC→IP: 0.12) to substantial (OA→IP: 0.43).

DISCUSSION

6.1 The Central Role of Human Capital

The result that human capital has the greatest direct impact on innovation performance (β = 0.33) and organizational agility (β = 0.41) is consistent with earlier studies that highlight the importance of employee expertise in knowledge-intensive industries (Subramaniam & Youndt, 2005; Chen et al., 2005). This result is both theoretically coherent and practically significant in IT organizations, where value creation is inextricably linked to human cognition, domain expertise, and creative problem-solving. In addition to coming up with creative ideas, skilled workers are the main sensing and reaction mechanisms for organizational agility; they decipher market signals, suggest flexible tactics, and carry out quick organizational changes. The strongest mediated path (HC→OA→IP, βindirect = 0.197, VAF = 37.4%) emphasizes that agility plays a significant role in human capital's contribution to innovation. This implies that investing in human capital alone might not be enough; businesses also need to foster the structural conditions (responsive decision-making, agile processes) that allow human knowledge to be used for innovation. The HC-agility-innovation causal

chain is empirically demonstrated by this data, which expands on the Teece et al. (1997) thesis.

6.2 Structural Capital as Innovation Infrastructure

The notable impacts of structural capital on innovation performance (β = 0.24) and organizational agility (β = 0.29) underscore the significance of organizational systems, knowledge management platforms, and process designs in facilitating both innovative outputs and adaptive responses. Because structural capital lowers the coordination costs of quick resource redeployment, IT companies with well-institutionalized knowledge repositories, agile project management frameworks (like Scrum and SAFe), and cross-functional communication tools exhibit higher agility (Youndt et al., 2004).

In line with Eisenhardt and Martin's (2000) claim that operational routines function as the foundation of dynamic capabilities, the significant mediated channel via organizational agility (VAF = 36.7%) demonstrates that structural capital's innovation impact is partially mediated through agility. Knowledge management systems should therefore be viewed by businesses as infrastructure that promotes agility rather than just efficiency tools.

6.3 Relational Capital and Open Innovation

The importance of external network capital in the innovation process is highlighted by relational capital's considerable contributions across all hypothesized channels (including mediated effect VAF = 34.7%), even though it had the least direct effects. This result is consistent with open innovation theory (Chesbrough, 2003), which views partnerships between organizations as channels for knowledge flows that push the bounds of innovation. Relational capital with developer communities, academic partners, and complementary service providers is a strategic advantage in IT companies that are defined by ecosystem-based competitiveness (e.g., cloud platforms, API economies).

6.4 Organizational Agility as the Innovation Catalyst

Organizational agility is positioned as the most proximal driver of innovation performance by the model's strongest path, OA→IP (β = 0.48, $f^2 = 0.43$, substantial effect), which serves as the active conversion mechanism for intellectual capital. This result reinforces Lu and Ramamurthy's (2011) discovery that IT agility generates business agility, which in turn drives performance, and supports Sambamurthy et al.'s (2003) conceptualization of IT-enabled agility as a foundation for digital innovation.

The partial mediation finding, as opposed to full mediation, suggests that agility enhances but does not completely absorb the direct innovative contributions of knowledge resources. It also shows that intellectual capital aspects maintain autonomous pathways to innovation performance. This subtle discovery has significant ramifications: managers should strive for agility as an extra tool rather than as a replacement for developing IC depth.

IMPLICATIONS

7.1 Theoretical Implications

Three significant theoretical advances are made by this study. By offering empirical evidence for organizational agility as a capability-level mediator that operationalizes the resource-to-outcome pathway, particularly in IT contexts, it first expands on Dynamic Capabilities Theory. Second, by demonstrating that human capital gains the most from the agility pathway and revealing differential mediation patterns across IC dimensions, it enhances the IC literature. Third, by combining RBV, DCT, and KBV into a single, cohesive SEM framework, it addresses calls for integrative models in the literature on innovation management.

7.2 Managerial Implications

IT executives and boards, these findings carry several actionable insights. First, talent development continues to be the most important investment. To leverage the agility-enabling potential of human capital, IT businesses should prioritize ongoing upskilling (AI/ML competency, systems thinking, design thinking). Second, in

order to institutionalize quick response capabilities, businesses should invest in agile-enabling structural capital such as integrated knowledge management platforms, digital collaborative ecosystems, and modular IT architectures. Third, structured open innovation programs, co-innovation collaborations, and API ecosystems should be strategically explored. The comparatively small but important contribution of relational capital indicates that IT enterprises functioning in isolation may be missing out on innovation value. Lastly, the strong $R^2 = 0.74$ for innovation performance in the entire model indicates that the preponderance of innovation variance may be explained by comprehensive IC investment directed through organizational agility.

LIMITATIONS AND FUTURE RESEARCH

There are a number of limitations to this study that provide opportunities for further investigation. First, longitudinal studies should be carried out to confirm the temporal ordering and causal directionality of the IC-agility-innovation chain, as the cross-sectional design prevents causal inference. Second, future research should supplement surveys with objective innovation measures (e.g., patent filings, R&D investment, NPD cycle lengths) because self-reported survey data may add response biases. Third, even though the sample was geographically diversified, it was restricted to IT companies; replication studies in other knowledge-intensive industries, such as biotechnology, healthcare, and finance, would improve generalizability. Fourth, organizational agility was viewed as a unidimensional mediator; in order to find more detailed mediation pathways, future studies could examine operational and strategic agility, two sub-dimensions of agility, as distinct mediators. Fifth, the IC-agility-innovation linkages may be moderated by boundary factors, including company age, digital maturity, national culture, and regulatory environment. These conditions should be investigated using moderated mediation models.

CONCLUSION

The purpose of this study was to investigate how organizational agility functions as a mediator in the relationship between intellectual capital and innovation performance in IT companies. The study demonstrated substantial empirical support for all seven direct and three mediated hypotheses using PLS-SEM on a sample of 387 IT professionals. Organizational agility is a strong partial mediator across all three IC-innovation trajectories, and human capital, structural capital, and relational capital all have a beneficial impact on both organizational agility and innovation performance. Strong predictive relevance indicators and an explained variation of 74% for innovation performance highlight the theoretical model's robustness.

The main finding is that optimizing innovation performance requires more than just intellectual capital. In order to transform knowledge resources into innovative outputs, organizations must simultaneously foster organizational agility. Building the IC-agility-innovation trinity is a fundamental strategic imperative in the rapidly evolving IT sector, where technological disruption is continual and competitive advantage is ephemeral. Building on this foundation, future studies should examine the integrated model's sector-specific subtleties, boundary conditions, and temporal dynamics.

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