

A Structural Perspective on Skillsets and Innovation Influencing Educators’ Adaptive Capacity and Performance

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KEYWORDS	ABSTRACT
N/A	This research investigates the impact of both technical (hard) and interpersonal (soft) skills on educators' innovative capacities and subsequent performance outcomes. A random sampling of 300 faculty members from Higher Education Institutions (HEIs) in the National Capital Region (NCR) yielded 211 valid responses for analytical purposes. The findings indicate a significant and positive relationship between both hard and soft skills and educators' ability to innovate, with a consequent improvement in performance. The study emphasizes the importance of fostering organizational learning and leveraging skill development to enhance educational innovation and adaptability within the contemporary academic landscape.

1. INTRODUCTION

The rapid transformations introduced by the Industrial Revolution necessitate a workforce in education that is skilled, flexible, and responsive to abrupt changes. HEIs are increasingly expected to align with evolving economic, technological, social, and political paradigms, necessitating a dynamic institutional culture. To remain competitive, HEIs must cultivate innovative academic environments, promote collaborative teaching practices, and strategically enhance faculty competencies to ensure sustainable educational advancement.

In this context, empowering faculty members as active agents of institutional change becomes critical. Organizational learning within HEIs supports this objective by fostering adaptive, knowledge-rich environments that prepare educators to meet global talent demands. Consequently, the intellectual capital inherent in educators—their accumulated knowledge and skill sets—emerges as a pivotal determinant of institutional success, surpassing the value of physical assets.

This study focuses on examining how educators' technical proficiencies and interpersonal abilities contribute to their innovation capabilities. Furthermore, it explores the mediating role of organizational learning in this relationship. The insights are particularly relevant to Indian HEIs striving to adapt to the knowledge-based economy. Findings aim to inform academic policy and leadership strategies designed to enhance faculty development, innovation, and institutional competitiveness in alignment with Industry 4.0 objectives.

2. LITERATURE REVIEW

Scholars differentiate hard skills as codifiable, teachable abilities that are often embedded in institutional knowledge (Haamann & Basten, 2018; Afsar, Masood & Umrani, 2019). These include competencies in planning, classroom management, instructional design, and technological integration (Muqowim, 2012; Widoyoko, 2009). Hard skills are typically evaluated through performance assessments and are crucial in facilitating effective pedagogy.

Conversely, soft skills—such as communication, adaptability, and teamwork—are considered tacit knowledge (Polanyi, 1966), acquired through experiential learning and interpersonal interactions (Boske & Osanloo, 2015; Kawamura, 2016;



Hartley, 2018). These skills are essential for fostering collaboration and innovation, particularly within Education 4.0 frameworks (Ma et al., 2018; Ferreira, 2018).

Organizational learning is identified as a strategic enabler that facilitates the transfer and integration of both hard and soft skills into institutional knowledge. It enhances institutional adaptability, strategic alignment, and knowledge retention, particularly in dynamic environments (Starbuck, 2017; Qi & Chau, 2018). Within HEIs, organizational learning underpins the transformation of individual competencies into collective capabilities, thereby sustaining innovation and educational excellence.

Innovation, as a core organizational asset, empowers institutions to address evolving educational challenges (Klaeijssen et al., 2017). Teacher innovation is increasingly recognized as a competitive advantage in Industry 4.0, impacting institutional resilience, responsiveness, and growth (Malik, 2019; Muscio & Ciffolili, 2019; Lund & Karlsen, 2019).

2.1 Teachers' innovation: The influence of technical and soft skills

Industry 4.0 emphasises competition and sustainability. Teacher innovation boosts corporate sustainability and efficiency. Tacit knowledge and hard skills affect organisational performance. Leadership, employee participation environment, knowledge sharing, search, collaborative culture, and knowledge processes affect teacher creativity (Samsir, 2018; Schuckert et al., 2018; Villaluz & Hechanova, 2019).

In light of Industrial Revolution 4.0, this study explores how hard and soft skills affect HEI professors' innovation competencies. Hard and soft skills boost teachers' innovation (Ganguly et al., 2019; Aulawi, 2018; Rumanti, 2018; Torres & Liang, 2016; Li, 2019). According to several studies, soft skills boost teacher innovation (Perez-Luno et al., 2018). Other research suggest that formal and informal learning environments might considerably effect teachers' innovation skills in education (Lecat et al., 2018). These findings focus on corporate organisations.

2.2 Organising Learning and Teacher Innovation

Teacher innovation and organisational success depend on knowledge generation; thus, organisational learning is crucial. School innovation maintains a good learning culture. Teachers share, integrate, and transfer knowledge, improving school intelligence and learning culture. Instructors learn innovation in a positive workplace (Bani-Melhem et al., 2018).

2.3 Teachers' Innovation Capability and Performance

Organisations need flexibility, reactivity, efficiency, and inventiveness to compete locally and globally (Asbari et al., 2019; Purwanto, 2020). More people want innovative products, services, and better internal processes and behaviours for all employees. These issues necessitate a change from efficiency to innovation, according to study. Coordinating people to increase organisational creativity and effectiveness needs more research (Sopa et al., 2020). Asbari et al. (2020) believe internal procedures must innovate to improve performance. Through market and financial positioning, Prameswari et al. (2020) believe employee creativity indirectly affects organisational value. Innovative teachers perform better, and Sopa et al. (2020) show that HEIs that prioritise teacher innovation are more productive and competitive globally.

2.4 HEI Learning Impact

Honeycutt (2000) defines knowledge management as managing intellectual capital. It was realised that intellectual or knowledge-based assets, not physical ones, make an organisation competitive today and in the future. Organisational learning applies knowledge management procedures to create value and competitive advantage. Organisational learning links hard, soft, and creative skills. Knowledge and skills are inputs, organisational learning is the process, and creativity is the output.

Hypotheses Development

Based on the reviewed literature, the following hypotheses are proposed:

H1: Hard skills significantly influence teachers' innovation capability.

H2: Soft skills significantly influence teachers' innovation capability.

H3: Organizational learning directly affects teachers' innovation capability.

H4: Teachers' innovation capability positively influences their performance.

H5: Organizational learning mediates the relationship between hard skills and teachers' innovation capability.

H6: Organizational learning mediates the relationship between soft skills and teachers' innovation capability.

3. METHODOLOGY

The study employed a quantitative research design, utilizing structured questionnaires to gather data. Instruments were adapted from established sources: hard skills (Hendarman & Cantner, 2017), soft skills (Hendarman & Cantner, 2017), organizational learning (Jiménez-Jiménez & Sanz-Valle, 2011), innovation capability (Lee & Choi, 2003), and performance (Grace et al., 2016). A 5-point Likert scale was used for all items.



Data collection targeted faculty members from five private HEIs in Delhi/NCR through simple random sampling. Of 300 distributed questionnaires, 211 were valid, yielding a response rate of 70.05%. Data analysis was conducted using SmartPLS 4.0, applying the Partial Least Squares (PLS) technique to assess construct reliability, validity, and hypothesized relationships.

4. RESULTS AND DISCUSSION

4.1 Validity and Reliability

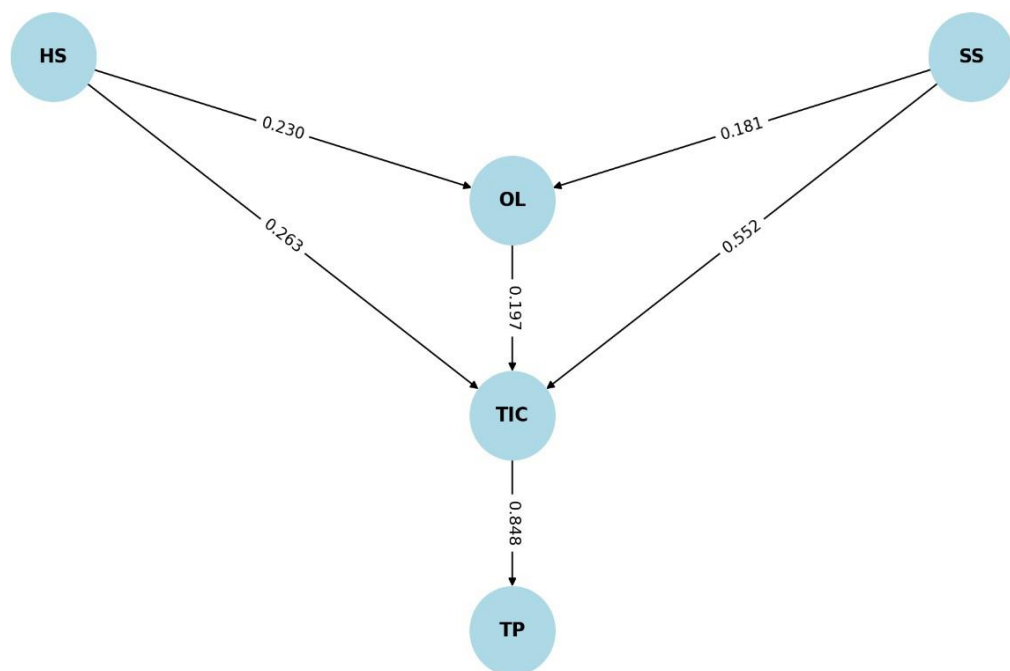
Testing models analyse convergent validity, discriminant validity, and composite reliability. To evaluate the study hypothesis, all PLS model indicators must meet convergent, discriminant, and reliability requirements. These factors can be assessed using PLS results. Convergent validity is assessed by evaluating indicator loading factors. Most scholarly sources say latent constructs are legitimate when factor loading is 0.5 or higher (Chin, 1998; Hair et al., 2010; Ghazali, 2014). This study sets the Average Variance Extracted (AVE) for each construct at a value greater than 0.5, the minimum acceptable loading factor (Ghozali, 2014).

Table 1. Items, Loadings, Cronbach's Alpha, CR, and AVE

Variables	Items	Loading	Cronbach's Alpha	CR	AVE
Hard Skills (HS)	HS1	0.700	0.867	0.960	0.691
	HS2	0.725			
	HS3	0.814			
	HS4	0.841			
	HS5	0.712			
	HS6	0.722			
Soft Skills (SS)	SS1	0.879	0.906	0.963	0.748
	SS2	0.872			
	SS3	8.874			
	SS4	0.901			
Organizational Learning (OL)	OL1	0.901	0.936	0.807	0.869
	OL2	0.955			
	OL3	0.945			
	OL4	0.909			
	OL5	0.910			
Teacher's Innovation Capability (TIC)	TIC1	0.912	0.935	0.946	0.824
	TIC2	0.897			
	TIC3	0.921			
	TIC4	0.920			
	TIC5	0.824			
Teacher's Performance (TP)	TP1	0.834	9.938	0.959	0.875
	TP2	0.899			
	TP3	0.971			
	TP4	0.909			



Path Diagram of Hypotheses



The discriminant validity test assures that each thought of a latent variable is unique from others. A model has excellent discriminant validity when the squared AVE (Average Variance Extracted) value of each exogenous construct (diagonal value) is greater than its correlations with other constructs (values below the diagonal), according to Ghazali (2014). The squared AVE value from the discriminant validity test is evaluated using the Fornell-Larcker Criterion, below.

Table2. Discriminant Validity Table

Variable	HS	SS	OL	TIC	TP
HS	0.831	0.650	0.550	0.500	0.450
SS	0.650	0.865	0.600	0.580	0.520
OL	0.550	0.600	0.932	0.570	0.510
TIC	0.500	0.580	0.570	0.908	0.700
TP	0.450	0.520	0.510	0.700	0.935

The model passes the discriminant validity test in Table 2. According to the Fornell-Larcker criterion, all constructs have square root AVE values greater than their correlation values with other latent constructs.

4.2 Construct Reliability Test

Construct reliability is assessed using Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE).

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Hard Skills (HS)	0.867	0.960	0.691
Soft Skills (SS)	0.906	0.963	0.748
Organizational Learning (OL)	0.936	0.807	0.869



Teachers' Innovation Capability (TIC)	0.935	0.946	0.824
Teachers' Performance (TP)	9.938	0.959	0.875

Cronbach's alpha and composite reliability measure construct dependability. Both measures should exceed 0.7, according to Ghazali (2014). Table 1 shows that all constructions have composite reliability and Cronbach's alpha values over 0.7. Thus, all constructs meet dependability requirements.

4.3 Hypothesis Testing

Partial Least Squares (PLS) uses the hypothesis test, or inner model test, to assess the significance of direct and indirect effects and the degree of exogenous variables' influence on endogenous variables. The model's structural integrity and variable relationships are examined in this test. The direct effect test examines how tacit knowledge and hard skills sharing improve organisational learning and teacher innovation. This analysis uses the partial least squares (PLS) technique with SmartPLS 4.0 to apply the t-statistic. This comprises a rigorous statistical method to assure findings correctness and reliability. R Square values, which show how much variance the independent variables explain, and significance test values, which corroborate the hypothesised correlations, are important findings of the bootstrapping approach. The table below gives more interpretation and analysis of these results.

Table 3 R-square Value

	R-Square	Adjusted R-Square
OL	0.724	0.720
TIC	0.737	0.727
TP	0.723	0.713

Table 4. Hypothesis Testing

Hypothesis	Relationship	Beta	SE	T-statistics	P-value	Status
H1	HS→TIC	0.263	0.079	2.979	0.027	Accepted
H2	SS→TIC	0.552	0.067	7.213	0.000	Accepted
H3	OL→TIC	0.197	0.081	2.387	0.025	Accepted
H4	TIC→TP	0.848	0.019	26.899	0.000	Accepted
H5	HS→OL→TIC	0.230	0.027	3.659	0.000	Accepted
H6	SS→OL→TIC	0.181	0.048	3.421	0.022	Accepted

Reliability and validity were confirmed through Cronbach's Alpha (>0.7), Composite Reliability (>0.7), and Average Variance Extracted (AVE > 0.5) (Ghozali, 2014). Discriminant validity was established using the Fornell-Larcker criterion.

The R-square values demonstrated that hard and soft skills accounted for 72.7% of the variance in organizational learning, and that these, along with organizational learning, explained 77.3% of the variance in innovation capability. Teachers' innovation capability accounted for 72.3% of the variance in performance.

All hypotheses were statistically significant ($p < 0.05$), validating the proposed relationships. The mediating effect of organizational learning was confirmed between both skill sets and innovation capability.

5. DISCUSSION

The analysis underscores that hard and soft skills substantially enhance teachers' innovation, directly and indirectly through organizational learning. The findings align with previous studies in corporate contexts (Perez-Luno et al., 2018; Terhorst et al., 2018; Che et al., 2019) and emphasize the role of organizational learning as a facilitator of continuous professional development.



The empirical evidence suggests that educators with well-developed hard and soft skills contribute significantly to cultivating a learning-centric institutional environment. This capability is essential for innovation, adaptability, and global competitiveness. Notably, the study reveals that, contrary to some previous findings (Ibrahim et al., 2017; Albandea & Giret, 2018), hard skills exert a prominent influence on innovation, possibly reflecting the urban academic setting of the sample population.

6. IMPLICATIONS

1. HEIs should prioritize the development of hard skills to enhance instructional innovation.
2. Soft skills must be cultivated to support knowledge sharing and creative collaboration.
3. Organizational learning should be embedded institutionally to facilitate knowledge integration.
4. Faculty development programs should be strategically aligned with innovation goals.

7. CONCLUSION AND LIMITATIONS

The study concludes that fostering both technical and interpersonal skills in educators significantly enhances their innovative capacities, which in turn improves performance outcomes. Organizational learning serves as a crucial mediating mechanism in this process. However, the study is limited to HEIs and may not generalize to other sectors. Future research should explore additional mediators and extend analysis to diverse educational and organizational contexts.

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