Journal of Management Science Research Review
https://jmsrr.com/index.php/Journal/about

Volume 5 Issue No 2 (2026)

Online ISSN: 3006-2047
Print ISSN: 3006-2039

Human Capital and Organizational Performance Nexus: A Case Study of Private Universities in Peshawar

Saba Gul Rehmat
Lecturer and PhD Scholar, City University of Science and Technology, Peshawar
Email: saba.gul.rehmat@gmail.com

Awais Alam Khan
Assistant Professor, Institute of Management Sciences, Peshawar
Email: awais.alam@imsciences.edu.pk

Abstract
This study examines correlation between human capital and university performance in private sector universities in Peshawar, Pakistan via faculty knowledge, skills, and competencies on research output, academic performance, institutional reputation and student employability. Intellectual Capital literature suggests that intangibles, especially human capital, plays a pivotal role in universities performance however, most of the studies have considered a limited perspective of human capital or its outcomes. Similarly, there is dearth of such research in the regional context and in private sector higher educational institutions.
Using quantitative methodology, data was collected from 286 faculty members across six universities. The statistical analysis indicates a substantial positive correlation between human capital and university performance ($r = 0.658$, $p < 0.01$), with regression analysis demonstrating that human capital accounts for 43.3% of performance variance. Hypotheses testing suggests that human capital has a positive effect on all four performance dimensions.
The findings highlight the critical importance of human capital in enhancing organizational performance in universities. This study contributes to the literature by offering a holistic framework for evaluating university performance through developing human capital and addresses a contextual and sector gap in the evolving body of intellectual capital research.

Keywords: Intellectual Capital, Human Capital, Resource Based View, Knowledge Based View, University Performance

Introduction

In this emerging age of Artificial Intelligence (AI), Intellectual Capital (IC) has emerged as a key driver of value creation across all sectors, including higher

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

education institutions (HEIs). Universities are also evolving with the advent of AI and IC from teaching and research into becoming drivers and catalysts of innovation, knowledge creation and development of human capital - the key ingredients of sustainable development (Villegas-Mateos & Amann, 2025; Okoro & Chukwuemeka, 2024).

In this new framework of knowledge economy, the role of IC is considered pivotal, in enhancing universities' performance and ultimately national development (Slaughter & Leslie, 1997; Din & Tran, 2025; Orjala & Collan, 2025; Acofi et al., 2025) through fostering entrepreneurial and knowledge ecosystems and for which the development of HC is vital (Gaffaro Garcia & Naranjo Tuesta, 2025; Guerrero et al., 2021; Ruano-Borbalan, 2024). As such, universities are increasingly positioned as strategic actors in nations' development, with IC, particularly, HC serving as a key enabler of their performance and relevance (Stewart, 1997; Hayton, 2005).

Kong (2008) further argues that modern organizations have shifted their focus from tangible resources to IC, as the value of knowledge and skills appreciates with their use, over time, unlike the traditional factors of production and now key factors of production for organizations including universities are, research and development, customer relations, human resources, and information technology contribute to competitive advantage (Nakamura, 1999).

A substantial body of research affirm that IC holistically and or its three components; relational, structural, and human capital, play a vital role in enhancing university performance. This paper focuses specifically on HC, a core element of IC, and its relationship with university performance. HC encompasses the knowledge, skills, and experience of individuals, which are the primary drivers of organizational performance (Schultz, 1961; Passaro et al., 2018; Rehman et al., 2022; Aslam & Haron, 2020; Haris et al., 2018; Nawaz & Haniffa, 2017; Ousama & Fatima, 2015; Musibah & Alfattani, 2014). IC literature has highlighted the role of HC, especially, investments in education and training, in enhancing organizational performance and its contribution to sustainable development (Romer, 1986; Becker, 1993; Polyhart, 2021).

Universities are knowledge intensive organizations as the inputs and outputs of universities, i.e., knowledge creation and sharing through research and teaching, and entrepreneurial initiatives are primarily intangible in nature (Cañibano & Sánchez, 2009). However, nowadays, they are facing increasing competition and financial constraints, such as reduction in funding, which adversely affect their performance (Secundo et al., 2016).

Universities in Pakistan are currently facing a plethora of challenges, for example, underfunding and financial challenge remains a core issue in the last few years and due to which a lot of HEIs are unable to meet their operational expenses or invest in research, and infrastructure (Abbasi, 2025; The Express Tribune, 2025). Similarly, the HC issue further exacerbates these difficulties as universities, especially in the private sector but also in the public sector are struggling to attract and retain qualified faculty due to the insufficiency of compensation, fewer professional development opportunities, and future prospects (Ahmad, Ghani, & Rashid 2018; Shah, Nesa, Khan

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

& Taj, 2025). These challenges are discouraging both staff and students and contributing to a decline in research productivity and innovation capacity in HEIs.

As a result, the performance of HEIs in the country is on decline with financial and HC constraints, and it is affecting the national development (Dawn, 2025; Ahmad et al., 2018; Ahmad, 2024). These challenges become more aggravated for private universities due to increasing competitive challenges, higher pressure of financial sustainability, HC retention, researching, as well as a ranking system developed by the regulator Higher Education Commission (HEC) based on five criteria of accreditation, research activity, faculty qualifications, employability stats, and student support. A system that is intended to foster academic excellence, accountability, and transparency in Pakistan's higher education sector by promoting a culture of competitiveness and providing a basis for policy-making and visibility (HEC, 2025).

Keeping in view the evolving role and these challenges, this research aims to explore the association of HC and universities' performance in Peshawar within the private sector universities with the research objective (RO): *to examine the association between human capital and university performance* and the primary research question (RQ): *What is the association between human capital and university performance?*

The remainder of this paper is organized as follows: Section 2 reviews the relevant literature. Section 3 outlines the research methodology and methods used. Section 4 presents data analysis. Lastly, Section 5 presents discussion and conclusion of the analysis and directions for future research.

2 Literature Review

This section discusses the foundational theories of this research, that is, resource based view (RBV), and knowledge based view (KBV), and explores the relationship between university performance and HC.

Resource-Based View (RBV)

RBV, introduced by Wernerfelt (1984), posits that an organization's competitive advantage is not merely dependent on the external (market) conditions, but also on the resources and its capabilities to use those resources. . Barney (1991) added that firms can achieve sustainable competitive advantage by leveraging resources that are *valuable, rare, inimitable,* and *non-substitutable* (VRIN) , that is, the concept of distinctive competencies and Peteraf (1993) further attributed the firm's competitive advantage to its distinctive competencies.

Grant (1996) further argued that increasing competition and external volatilities can be overcome by organizations through their internal resources and its deployment, particularly intangible assets such as knowledge, capabilities, and institutional reputation, to sustain performance. Additionally, Verona (1999) highlighted that RBV provides insights into how functional and integrative capabilities influence process efficiency and product effectiveness. The increasing role of knowledge and other intangibles and their utilization in the competitive dynamics of firms led to the transformation of RBV into KBV (Grant, 1996).

Building on RBV, the KBV asserts that knowledge is the key component in knowledge-intensive sectors such as higher education (Grant, 1996). Unlike physical

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

assets, knowledge and other intangibles are complex to develop, utilize and integrate, making it a source of sustained competitive advantage (Spender, 1996) thus propelling the needs for IC development in organizations.

Intellectual Capital and Universities Performance

Roos (1998) categorized the concept of IC into three components: HC, Structural Capital, and Relational Capital. HC encompasses the collective *knowledge*, *skills*, and *experiences* of an organization's employees. Structural capital includes organizational systems, processes, strategies, structure and policies etc., while relational capital refers to an organization's relationships with its customers, and all types of stakeholders (Petty & Guthrie, 2000).

Sydler et al. (2013) associate IC with sustainable competitive advantage and argue that organizations should focus more on strategizing IC acquisition and development and its alignment with the organizational strategies. Pedro et al. (2020) further assert that IC investments enhance employers' branding and institutional reputation . Alhassan et al. (2022) identified faculty's innovation capacity as a key driver of universities' research productivity. Ahmad et al. (2022) also emphasized the importance of HC in fostering innovation and improving research in HEIs. A research by Nguyen et al. (2023) found a positive impact of the role of relational capital in enhancing graduates' employability. Singh et al. (2024) stress the need for investment in structural capital, particularly IT infrastructure, to enhance teaching quality and HEIs' reputational capital. Fernando and Yusoff (2023) advocated for specialized HC development programs, based on industry needs and requirements, to strengthen academia-industry linkages.

Universities as organizations are unique and are affected by their external and internal environments. In this era of artificial intelligence, their success depends on their adaptability to changing demand dynamics and continuous improvement (Teece et al., 1997) in teaching and learning, researching and HC development and for these reasons IC has significant influence on universities' performance (Popescu, 2019).

Anggraini et al. (2018) findings also suggest a positive relationship between IC and academic performance, within Indonesian public universities while, Attar, Kang, and Sohaib (2019) also conclude a pivotal role of IC and knowledge sharing in ensuring long-term sustainability. In other research, Lu (2012) found a positive relationship between IC and teaching and research productivity in Taiwanese universities.

Petty and Guthrie (2000) explored IC's transformative impact on workplace culture, particularly in management and research and development systems in organizations and concluded a positive relationship between IC and these variables. Levina et al. (2019) examined how IC can address challenges in Russian HEIs, concluding that integrating IC into strategic planning significantly enhances institutional performance of universities.

Pedro et al. (2020) also linked IC to sustainable development practices in Portuguese universities, showing that IC improves stakeholder well-being through better employment outcomes. Lu (2012) findings also demonstrate IC's critical role in achieving operational efficiency in Taiwanese public universities. Similarly, Abdullah

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

(2020) found that Libyan universities prioritizing IC, outperformed those that did not, reinforcing IC's impact on institutional effectiveness. Among all of the components of IC, HC comes first as humans are the creators of knowledge in the knowledge intensive organizations (Smith, 2001; Christabel, Hasya, & Muharam, 2024; Deloitte, 2024) and as the focus of this paper is the HC component, therefore, the next section discusses HC and its its role in universities.

Human Capital and Universities

In today's economy, while financial metrics remain important, intangibles like HC are increasingly recognized for their role in value creation. Organizations are investing in employee development programs to enhance creativity, innovation, and brand equity. Antosova & Csikosov (2011) argued that organizations committed to continuous HC development are more likely to succeed.

Ramirez et al. (2017) defined HC within HEI context as a blend of tacit and explicit knowledge held by university human resources, acquired through formal and informal education while Antosova & Csikosov (2011) further added the components of employees' experiences, skills, and talents as value-adding factors within HEIs.

Several researchers have conducted research on the relationship between various dimensions of IC within the HEIs' for example, Fernando and Yusoff (2023) highlighted HC as a critical component of IC, which is directly proportional to teaching quality, research productivity, and organizational performance of the HEIs especially in developing countries' contexts which are facing the HC development challenges. Ramírez, Manzaneque, and Priego (2016) also emphasized that HC, that is reflected in the competencies of a HEI's faculty, has a positive correlation with it's success. Similarly, Shakir et al. (2020) found that HC significantly impacts organizational performance and profitability in Malaysian context.

Chatterji and Kiran (2017) employed structural equation modeling to demonstrate that IC improves university performance by fortifying HC, which subsequently fosters high-quality teaching and research. A meta-analysis based research also concluded a positive relationship between HC and organizational performance, along with the acknowledgement that HC development requires significant investment for achieving higher performance (Crook et al., 2011), In Iranian context, researchers (Hejazi, Ghanbari, & Alipour, 2016) also concluded similar findings.

In another research study within HEIs context, Cricelli et al. (2018) in addition to teaching and research quality, IC proposed innovative pedagogical methods, and academia-industry collaborations as dimensions of IC through which tacit knowledge is shared with students and industry. Chatterji and Kiran (2022) re-iterated the importance of HC for research productivity of HEIs and similarly, Alimoradi and Ahmad (2022) conclude that HC and good governance can improve organizational service delivery and performance. In Malaysian context a research study (Hassan et al., 2022) also derived that strategic investment in HC improves university performance on various dimensions. In a recent research in Pakistan, Ali et al. (2024) observed that insufficient HC in Pakistan impedes research productivity, underscoring the necessity for faculty development.

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

However, while HC is a critical component of IC, its interaction with relational and structural capital is also essential as RBV and KBV suggests, it is not just having a resource (tangible or intangible, but also how to utilize it, is also important). Therefore, together, these elements foster an environment conducive to knowledge creation and dissemination. In this regard researchers (Pratolo & Sofyani, 2023) argue that development of performance management systems can further strengthen the correlation between HC and university performance, as it enhances the measurement of IC which is critical for it's management.

Despite an increasing body of literature on IC, most studies focus on isolated performance indicators such as employability or research productivity. Moreover, adopting a holistic approach, as well as, context specific research, especially within Pakistan, in higher education, and private higher education institutions (HEIs) is limited. This study seeks to fill these gaps by examining how HC influences the key performance indicators of; research productivity, teaching quality, graduate employability, and institutional reputation, within the private HEIs in Peshawar, Pakistan.

Conceptual Framework

The discussion in preceding paragraphs establishes that the embedded intangible resources and capabilities of knowledge intensive organizations are central to their quest of performance and value creation (Barney, 1991; Grant, 1996; Spender 1996). For HEIs, it's HC becomes critical for strengthening its overall performance including knowledge creation, provision of quality education, knowledge creation, and innovation capacity. Substantial literature shows that investment in HC development, including faculty competencies and strategic human resource management, directly enhances universities' research output, global visibility and reputation, for example, a recent study in Malaysia on targeted talent development and academic leadership programs resulted in better outcomes in all of the above critical dimensions (Strategic Human Capital Outcomes, 2025). Muhammad and Abdullah (2025) research also support these findings and additionally add the dimension of collaborative research culture as another intangible driver of research productivity. Likewise, In another recent research (Evers, 2025) similar correlation was observed in HC initiatives and its outcomes in enhancing innovation and research capacity and increase in academic-industry collaboration. Supporting this view, Orfan (2024) identified human resource management policies as major determinants of faculty research productivity across HEIs. In earlier research (Aman-Ullah, 2022) also affirmed the pivotal relationship between HC and organizational performance in HEIs, underscoring HC as a key driver of research productivity. From this discussion, it can be concluded that strategic management of HC in HEIs can drive their research productivity and overall performance.

This discussion supplements earlier literature (e.g., Aman-Ullah, Anwar, and Khalid, 2022) that HC investment is correlated with organizational performance metrics, including research outputs, whereas faculty capability building, and knowledge sharing, are key enablers. These empirical findings are further strengthened by

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

research findings in an Indian context where substantial improvement was observed in research productivity after conducting faculty development initiatives including mentoring, training and capacity building (Biswas & Vermin, 2021).

The impact of HC is wide and deep in HEIs, and it also affects institutional reputation which is nowadays critical for universities' rankings and shaping stakeholders' perceptions. Hazelkorn (2021) argues that reputational capital in the higher education sector is closely tied to the ability of HEIs to attract and retain high-caliber faculty and researchers, which enhances their standing in the ranking systems and visibility. In a similar fashion, Altbach and de Wit (2023) contend that HEIs' faculty's international exposure, networking, and collaborations, are central to shaping universities' positions in international rankings. In this regard, a strategic approach towards talent acquisition and retention becomes critical (Salmi, 2024) to build and sustain the reputation of a HEI. A research in the Asia-Pacific region (Yang & Welch, 2022) also provided the evidence that investments in HC development and research collaborations substantially raise institutional position in the rankings. Huisman and Cliquet (2021) research also complement these findings that HC development is associated with key ranking indicators such as research citation impact and teaching quality in HEIs.

An important dimension of HC role is associated with increase in student employability, for example, studies by Dawkins (2023) and Knight and Yorke (2024) conclude that HC quality (faculty expertise and high-quality teaching), directly improves graduates' employability prospects. Fahimnia, Motevali Haghighi, and Farid (2021) also conclude that targeted HC investments result in enhanced employability prospects. From this discussion, it can be argued that in HEI's context, HC contribution extends beyond teaching and research to a wider domain of external visibility, reputation and competitive positioning, and graduate employability, as well. Grounded in the RBV and KBV, the proposed framework positions HC as a critical component of IC, that enables HEIs in value creation. In this study, HC is conceptualized as the collective faculty knowledge (qualification), teaching competence, research expertise, and innovation capacity that together shape institutional performance. These HC dimensions influence several key institutional outcomes e.g., academic performance, research productivity, graduate employability, and institutional reputation—as illustrated in the conceptual framework (see Figure 2.1)

Drawing from RBV and KBV, the proposed framework positions HC as a key intangible asset driving sustainable competitive advantage in higher education institutions. For our research we have conceptualized HC as the aggregate of faculty knowledge, teaching quality, research quality, and innovation in teaching, and it affects multiple dimensions of university performance, including research output, student employability, and academic reputation as shown in figure 2.1.

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

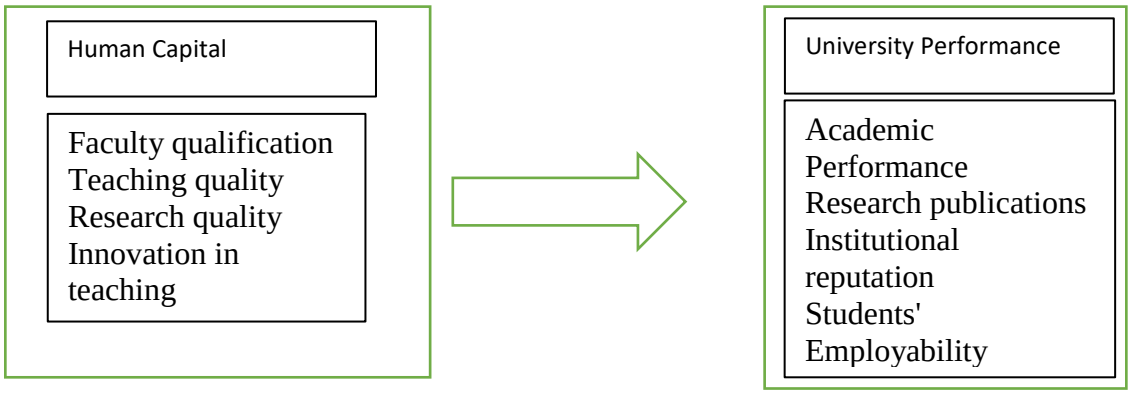

Figure 2.1 Conceptual Framework of the Study

We conceptualize HC as an independent variable influencing university performance which consists of academic performance, research output, institutional reputation, and student employability, as dependent variables.

Human Capital Indicators: Faculty qualification, teaching quality, research productivity, and innovative teaching practices.

Universities Performance Indicators:
Academic Performance (e.g., national/international rankings)
Research Output (e.g., publications, citations, funding, patents)
Institutional Reputation (e.g., stakeholder perceptions, media presence, awards)
Student Employability (e.g., employment rates, employer feedback, alumni success)

Hypotheses Development

Drawing on the preceding literature (e.g., Fernando & Yusoff, 2023; Pedro et al., 2020) and our research question, this study posits that HC, as a core component of IC, plays a pivotal role in enhancing university performance. Accordingly, the following overarching hypothesis and sub-hypotheses are proposed:

Main Hypothesis (H_0): There is a positive relationship between HC and University Performance.

To explore this relationship across key performance dimensions, the following sub-hypotheses are formulated:

H1: There is a positive relationship between HC and Research Output.
H2: There is a positive association between HC and Institutional Reputation.
H3: There is a positive association between HC and Academic Performance.
H4: There is a positive association between HC and Student Employability.

Following the development of the above hypotheses, the next section describes the research methodology employed to empirically test them.

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Methodology

Research Methods:

Based on the research questions and hypotheses, we adopted a quantitative research design for this research. For data collection, a survey was used to obtain data from faculty members of private universities in Peshawar as this approach is appropriate for identifying patterns and relationships among variables for the statistical analysis (Creswell & Creswell, 2018) and has been adopted in the IC body of knowledge (for example, Pedro etl., 2020; Alhassan et al., 2022), for enhancing the reliability, comparability and generalizability of findings (Bryman,2016).

The target population for this research was the faculty members of all the six HEC recognized private sector universities located in Peshawar. Table 3.1 provides details of the universities and their departments where data was collected. .

Table 3.1 Details of Universities

S. No	Name of university	Departments
1	Sarhad University (SUSIT)	• Computer Science (CS) • Information Technology (IT) • Software Engineering • BBA and MBA • Electrical Engineering (EE) • Civil Engineering (CE) • Environmental Sciences (ES) • Social Sciences (SS) • Health and Physical Education (HPE)
2	IQRA National University (INU), Peshawar	• CS • IT • BBA & MBA • SS • Engineering (various specializations) • Arts and Humanities • Education • Media and Communication Studies
3	Abasyn University Peshawar	• BBA and MBA • CS/Software Engineering/IT • EE • CE • Mechanical Engineering • SS • Media and Communication Studies • Law

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

S. No	Name of university	Departments
4	CECOS University	• CS • IT • Software Engineering • EE • BBA and MBA • SS
5	City University of Science & Information Technology	• CS and Software Engineering • IT • EE • BBA/MBA • CE • SS • Mathematics • Humanities
6	Qurtaba University	• CS • IT • BBA and MBA • EE • Software Engineering • SS • Natural Sciences • Law • Education

A stratified random sampling technique was adopted to ensure proportional representation across departments in these universities. Using G*Power analysis, a sample size of 286 was determined from the total population of 975 faculty members in all of these universities, (Creswell & Creswell, 2018; Saunders et al., 2019).

Data Collection and Data Analysis

The survey tool for this research was developed from IC literature to ensure reliability and content validity (Uriguen Aguirre & Avolio Alecchi, 2023). The five-point Likert-Scale based questionnaires were distributed in both physical and online format (in Google Forms) to ensure maximum participation of the respondents. Initially, pilot testing of the survey tool was performed to fine-tune the questionnaire (Creswell &

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Plano, 2017) for clarity and reliability using Cronbach's Alpha (Nunnally & Bernstein, 1994). While construct validity was ensured by adopting questions from IC literature (Bagozzi et al., 1991; Hair et al., 2020; Kline, 2016).

The data obtained from both formats were initially entered in Google Sheets and later this data was analyzed using both descriptive and inferential statistical techniques. Descriptive statistics, including frequency distributions, means, and standard deviations, were used to summarize respondents' demographic characteristics (for example, gender, age, and professional experience) as well as overall response patterns (Field, 2018; Pallant, 2020). Inferential analysis consisted of correlation and regression techniques to examine the relationships between HC and university performance (Hair et al., 2020).

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Results

The data collected was analyzed using SPSS (Version 24) to examine the relationship between HC and universities performance. The findings are arranged in various sections starting from the demographic details of the respondents to frequency distributions, reliability analysis, correlation analysis, regression results, ANOVA, and coefficient analysis.

Demographic Characteristics

Table 4.1 presents the demographic profile of 286 respondents of private sector HEIs. The sample consisted of male (66.8%) and female (34.6%) participants, reflecting a gender imbalance in the region's higher education sector. Most respondents were aged between 31 and 40 years (41.6%), followed by those aged 20–30 years (33.6%), indicating a predominantly young faculty population. In terms of professional experience, 45.1% of respondents reported 1–5 years of experience, while 20.3% had more than 16 years, highlighting a blend of early-career and senior academics.

The positions of respondents in their organizations show that the majority of respondents were lecturers (75.9%), followed by assistant professors (13.3%), professors (5.6%), and associate professors (5.2%) respectively. This distribution indicates that the sample is predominantly composed of entry- and mid-level faculty, which may influence perceptions of HC and institutional performance.

Table 4.1: Demographic Profile of Respondents

	Total no of respondents	%	Gender	Age	Experience	Designation
Male	286	66.8	191			
Female	286	34.6	99			
20-30	286	33.6		96		
31-40	286	41.6		119		
41-50	286	20.6		59		
51 and above	286	4.2		12		
1-5	286	45.1			129	
6-10	286	21.3			61	
11-15	286	13.3			38	
16 and above	286	20.3			58	
Lecturer	286	75.9				217
Assistant Professor	286	13.3				38
Associate Professor	286	5.2				15
Professor	286	5.6				16

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Frequency Distribution of Human Capital

Table 4.2 shows how human capital scores were spread in a data set; each score provides insight into the data set. The first column shows the scores for the human capital ranging from 1- 5. The second column, which is frequency, shows how many respondents from the sample size chose each score. The 3rd column, which is percentage, shows the proportion of each score in percentage, relative to the total sample size which is 286. The 3rd column, which is the valid percentage, shows the valid percentage of frequency in case of any missing values, but in this data, no value is missing so the column of percentage and valid percentage is the same. The last column, which is the cumulative percentage, shows the running total of percentages up to each score, helping us understand how data accumulates across categories. with the most frequent scores being 3.4 (16.1%) and 3.6 (17.1%), indicating moderate to high levels of human capital perception. The least frequent scores are 4.80 (1.0%) and 5.00 (2.1%). This frequency table shows a detailed breakdown of human capital ratings in the dataset. The cumulative percentage confirms that over 70% of respondents rated human capital above 3.4, reinforcing the notion of a generally favorable assessment.

Table 4.2

a- Human capital

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	7	2.4	2.4	2.4
	2.00	13	4.5	4.5	7.0
	2.40	11	3.8	3.8	10.8
	2.60	7	2.4	2.4	13.3
	2.80	10	3.5	3.5	16.8
	3.00	9	3.1	3.1	19.9
	3.20	14	4.9	4.9	24.8
	3.40	46	16.1	16.1	40.9
	3.60	49	17.1	17.1	58.0
	3.80	38	13.3	13.3	71.3
	4.00	44	15.4	15.4	86.7
	4.20	15	5.2	5.2	92.0
	4.40	7	2.4	2.4	94.4
	4.60	7	2.4	2.4	96.9
	4.80	3	1.0	1.0	97.9
	5.00	6	2.1	2.1	100.0
	Total	286	100.0	100.0	

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Frequency Distribution of University Performance Scores:

Table: 4.3

b- University performance					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.13	4	1.4	1.4	1.4
	1.25	3	1.0	1.0	2.4
	1.75	4	1.4	1.4	3.8
	2.25	6	2.1	2.1	5.9
	2.50	3	1.0	1.0	7.0
	2.63	4	1.4	1.4	8.4
	2.75	16	5.6	5.6	14.0
	2.88	12	4.2	4.2	18.2
	3.13	12	4.2	4.2	22.4
	3.25	12	4.2	4.2	26.6
	3.38	11	3.8	3.8	30.4
	3.50	12	4.2	4.2	34.6
	3.63	37	12.9	12.9	47.6
	3.75	21	7.3	7.3	54.9
	3.88	14	4.9	4.9	59.8
	4.00	55	19.2	19.2	79.0
	4.13	16	5.6	5.6	84.6
	4.25	11	3.8	3.8	88.5
	4.38	13	4.5	4.5	93.0
	4.63	13	4.5	4.5	97.6
	4.75	4	1.4	1.4	99.0
	4.88	3	1.0	1.0	100.0
	Total	286	100.0	100.0	

This table explains the scores of performances across the data set. The first column shows the scores for the human capital ranging from 1- 5. The second column, which is frequency, shows how many respondents from the sample size chose each score. The 3rd column, which is percentage shows the proportion of each score in percentage, relative to the total sample size which is 286. The 4th column, which is the valid percentage, shows the valid percentage of frequency in case of any missing values, but in this data, no value is missing so the column of percentage and valid percentage is the same. The column of cumulative percentage shows the running total of percentages up to each score, helping us understand how data accumulates across categories. In summary, Table 4.3 shows the distribution of university performance scores. The most common score was 4.0 (19.2%), followed by 3.63 (12.9%),

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

indicating that respondents generally perceive their organizations as performing well. The distribution is skewed toward the upper end of the scale, with over 79% of responses above 4.0, suggesting a strong institutional performance in areas such as teaching quality, research output, and student employability.

Reliability Test

As mentioned earlier too, reliability analysis of the survey tool was performed to check the internal consistency among the 13 items of the tool to measure HC and university performance. Table 4.4 displays its results and the Cronbach's alpha value of 0.8585 indicates a high level of internal consistency, exceeding from the common threshold of 0.80, confirming that the questionnaire is reliable and appropriate for further statistical analysis (Nunnally & Bernstein, 1994).

Table 4.4

Reliability Statistics	
Cronbach's Alpha	N of Items
.8585	13

Correlations Analysis

Table 4.5 displays the Pearson correlation co-efficient between HC and university performance. The value of r = 0.658 indicates a moderate to strong positive correlation, suggesting that improvements in human capital are associated with enhanced university performance. The p-value of 0.000 confirms that this relationship is statistically significant at the 0.01 level, providing robust evidence to support the first research hypothesis.

Table: 4.5

		Human capital
Human Capital	**Pearson Correlation**	1
University Performance	**Pearson Correlation**	.658**
**.		

Regression Analysis

Regression analysis is conducted to find the association among the independent variable which is human capital and the dependent variable that is university

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

performance. R is the correlation coefficient which is the Pearson correlation between observed values and the predicted values of the dependent variable. It shows the strength and direction of the linear relationship. A value of 0.658 suggests a moderately strong positive correlation between HC and University Performance. R square represents the variance in the dependent variable which is university performance the independent variable which is HC. From the value of R square, it is verified that 43% of changes in the university performance are due to HC which is a moderate level of explanatory power, it is accepted because more than 40% of changes to moderate levels of changes in the dependent variable (Moore et al., 2013). An Adjusted R Square adjusts the R Square value for the number of predictors in the model, preventing overestimation of the explained variance in models with multiple predictors. Since there is only one predictor (Human Capital), the difference between R Square (0.433) and Adjusted R Square (0.431) is minimal, indicating the model fits the data well without overfitting. The standard error of the estimate specifies the average distance that the observed value drops from the regression line (i.e., the model's prediction). A lower value specifies a well fit. As the standard error 0.54177 which is considered good, which means that the model has moderate prediction accuracy.

Table: 4.6

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.658[a]	.433	.431	.54177
a. Predictors: (Constant), Human capital				

ANOVA

Table 4.7 presents the Analysis of Variance (ANOVA) that shows the overall significance of the regression model. The sum of squares shows the variation in the dependent variable that is explained by the regression model (Regression SS) plus the unexplained variation (Residual SS). 63.617 variation in UP is explained by HC. A p-value of **0.000** is highly significant ($p < 0.01$). This means there is strong evidence to reject the null hypothesis, and Human Capital significantly predicts University Performance. The significant F-statistic (216.745) and the p-value (0.000) indicate that the regression model is statistically significant. Human Capital explains a significant portion of the variability in University Performance. The ANOVA results confirm that the regression model is statistically significant, with Human Capital being a strong predictor of University Performance.

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Table: 4.7

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	63.617	1	63.617	216.745	.000[b]
	Residual	83.357	284	.294		
	Total	146.974	285			

Coefficient
Table: 4.8

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	1.372	.155		8.839	.000
HC-Research Output	1.653	.205	.432	8.080	.000
HC- Institutional Reputation	1.361	.243	.315	5.595	.000
HC- Academic Performance	1.441	.230	.348	6.261	.000
HC- Student Employability	1.133	.222	.289	5.096	.000

The coefficient results presented in table 4.8 provide empirical support for the four sub-hypotheses concerning the relationship between HC and key dimensions of university performance.

This analysis provides a strong support for our first sub-hypothesis, which examines the effect of HC on research output of the organization. The unstandardized coefficient (B = 1.653) and standardized beta (β = 0.432) indicate that a one-unit increase in HC is associated with a 1.653-unit increase in research output. This relationship is highly significant ($t = 8.080$, $p < 0.001$), and highlights the pivotal role of faculty knowledge, qualifications, and research competencies in enhancing research output.

The second sub-hypothesis, aimed at assessing the relationship between HC and institutional reputation, is also confirmed by the findings. The estimated coefficients (B = 1.361, β = 0.315) suggest that improvements in HC contribute significantly to strengthening universities' public image, stakeholder perceptions, and overall

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

credibility. The statistical significance of this relationship ($t = 5.595$, $p < 0.001$) further confirms the positive effect of HC on institutional reputation.

Results for the third sub-hypothesis suggest a significant positive association between HC and academic performance. The co-efficients ($B = 1.441$, $\beta = 0.348$) indicate that an increase in HC results in enhancement of significant academic performance ($t = 6.261$, $p < 0.001$), underscoring the importance of faculty expertise and teaching effectiveness in enhancing student learning outcomes and institutional ranking performance.

Finally, the fourth sub-hypothesis result validates the effect of HC on students' employability. The unstandardized co-efficient ($B = 1.133$) and standardized beta ($\beta = 0.289$) demonstrate that HC plays an important role in students' employability prospects The relationship is also statistically significant ($t = 5.096$, $p < 0.001$).

To conclude, the findings confirm that HC has a significant and positive effect across all four dimensions of university performance of; research output, institutional reputation, academic performance, and students' employability. The strength and statistical significance of the coefficients for all sub-hypotheses confirms the importance of strategic and sustained investment in faculty development, training, and innovation initiatives. These results also suggest that universities seeking to enhance their overall performance should prioritize HC development as a part of their strategic planning. Further, the strong association between HC and student employability reinforces the role of universities in sustainable national development.

Discussion

The objective of this research project was to examine the association between HC and university performance in the private universities in Peshawar, Pakistan. The findings provide strong evidence that HC, reflected via faculty qualifications, teaching effectiveness, research productivity, and innovation capacity (Antosova & Csikosov, 2011; Cricelli et al., 2018; Ramirez et al., 2017) plays a significant role in enhancing institutional performance.

Our findings are consistent with the theoretical foundations of RBV and KBV (Barney, 1991; Grant, 1996; Spender, 1996; Stewart, 1997) regarding the pivotal role of intangibles especially, HC and its impact in enhancing the overall performance of knowledge intensive organizations (HEIs) as the correlation analysis suggest statistically significant and moderately strong positive relationship between HC and university performance ($r = 0.658$, $p < 0.01$). Similarly, the regression analysis further confirms that HC is a significant predictor of university performance, accounting for 43.3% of the variance in performance outcomes. The coefficient analysis for the four sub-hypotheses provides further insights regarding how HC affects the various dimensions of university performance. These findings indicate that universities with more qualified and skilled faculty members tend to perform in all dimensions of performance, including research productivity (strongest effect), institutional reputation (Hazelkorn, 2021), academic performance and student employability (Dawkins et al., 2024; Fahimni et al., 2021), - all significant effects, in consistency with previous studies (Muhammad & Abdullah, 2025; Strategic Human Capital

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Outcomes, 2025; Evers 2025; Orfan 2024; Aman-Ullah 2022; Ramirez et al., 2016; Pedro et al., 2020). Our findings further support Shakir et al. (2020) arguments regarding the importance of faculty training and knowledge sharing ((Altbach & de Wit, 2023) in institutional performance thus generalizing the above studies regarding the strategic value of HC in HEIs in Pakistan's private HEIs' context.

However, our results show a divergence from the conclusions of Anggraini et al. (2018) research arguing that IC primarily influences research output, with limited impact on broader performance measures. In contrast, our study demonstrates that HC affects multiple dimensions of university performance in a significant manner, as discussed in the earlier lines. This suggests that HC is a critical driver of HEIs performance in a much deeper and wider manner as proposed in our conceptual framework and validated by our findings.

From a policy perspective, these results assert the need for strategic investment in faculty development, including training programs, research incentives, and pedagogical innovation. Although it's challenging especially for private sector HEIs due to increase in the number of universities in recent years and resource constraints, especially financial constraints, this is the only way forward for them to enhance their performance and attract and retain talent.

Conclusion

The current research study provides empirical evidence of the role played by HC in enhancing the performance of private universities. With a conceptual framework grounded in RBV and KBV, the findings demonstrate that HC comprising faculty knowledge, skills, experience, and innovation capacity is a critical driver of organizational performance.

The statistical analyses confirmed a moderate to strong positive relationship between HC and university performance, with HC explaining 43.3% of the variance in performance outcomes. These results support the proposed hypotheses and highlight the multidimensional influence of HC on key performance indicators including, teaching quality, research output, institutional reputation, and students employability. The findings further emphasize the strategic importance of sustained investment in faculty development, training programs, and knowledge-sharing practices to improve organizational performance.

The contribution of this study is threefold. Firstly, it contributes to the evolving IC research by proposing a holistic framework for assessing performance of HEIs. Secondly, it addresses a notable contextual gap in region-specific research by focusing on private HEIs in Pakistan which are currently facing multiple challenges, including limited or no public funding and increasing competitive dynamics.

From a practical standpoint, the findings suggest that strategic managers at universities and other relevant forums should prioritize HC strategies that align with both organizational goals and broader development agendas. These include continuous professional development programs, and integration of HC planning into strategic planning frameworks, as such initiatives have the potential not only to enhance institutional performance but also to contribute meaningfully to wider

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

societal and economic development e.g., Sustainable Development Goals (SDGs), particularly those related to quality education and decent work therefore, universities should improve the alignment of their activities with SDGs.

Directions for Future Research

While this study focused on HC, future research should explore the interactions between HC, Structural Capital, and Relational Capital, to develop a more nuanced understanding of how different components of intellectual capital collectively influence university performance. Longitudinal studies and comparative studies among public and private HEIs could further enrich discourse and inform policy interventions.

References

Abbasi, K. (2025, March 5). Three universities in Islamabad in dire financial straits. DAWN.COM. https://www.dawn.com/news/1895814

Abdullah, N. (2020). The impact of intellectual capital on unlimited improvement: Research in Libyan public universities. *The International New Issues in Social Sciences*, *8*(1), 135–152.

Acofi, et al. (2025). Intellectual capital in higher education institutions: A literature review. Education and Innovation Papers. https://acofipapers.org/index.php/eiei/user/setLocale/en_US

Ahmad, R., Mohammad, H., & Nordin, S. (2022). Human capital and innovation in private universities. *Journal of Educational Research*, *40*(2), 150–172.

Ahmad, S. H. (2017, March 17). Major financial issues confronted by universities in KPK and how to address them? Exploring Academia. https://exploringacademia.com/major-financial-issues-confronted-by-universities-in-KPK

Ahmad, S. H., Ghani, U & Rashid, M. U. (2018). Managing Human Resource in Public Sector Universities of Khyber Pakhtunkhwa, Pakistan: Problems and Prospects. Dialogue (Pakistan), *13*(3).

Alhassan, Y., Kwakye, A. O., Dwomoh, A. K., Baah-Nyarkoh, E., Ganu, V. J., Appiah, B., & Osei Bonsu, S. (2022). Determinants of blood pressure and blood glucose control in patients with co-morbid hypertension and type 2 diabetes mellitus in Ghana: A hospital-based cross-sectional study. *PLOS Global Public Health*, *2*(12), e0001342. https://doi.org/10.1371/journal.pgph.0001342

Ali, Q. B., Zin, M. L. M., & Ismail, S. A. (2024). The role of human capital, structural capital, and relational capital in higher education institutions' performance. *Journal of Management Info*, *11*(2), 185–196. https://doi.org/10.31580/jmi.v11i2.2874

Alimoradi, A. A., & Ahmad, C. K. (2022). Intellectual capital within the framework of governance and its impact on university performance: A case study of universities in Sulaymaniyah, Iraq. *Journal of University of Human Development*, *8*(3), 37–47. https://doi.org/10.21928/juhd.v8n3y2022.pp37-47

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Altbach, P., & de Wit, H. (2023). The role of human capital in shaping university reputation in global rankings. Studies in Higher Education, 48(1), 57-75. https://doi.org/10.1080/03075079.2021.1993581

Aman-Ullah, A., Anwar, M., & Khalid, R. (2022). Human capital and organizational performance: An empirical study. Cogent Business & Management, 9(1), 2054522. https://doi.org/10.1080/23311975.2022.2054522

Anggraini, F., Abdul-Hamid, M., & Azlina, M. (2018). The role of intellectual capital on public universities' performance in Indonesia. *Pertanika Journal of Social Sciences & Humanities, 26*(4), 2453–2472.

Antosova, M., & Csikosova, A. (2011). Intellectual capital in the context of knowledge management. In *The Economic Geography of Globalization*. IntechOpen. https://doi.org/10.5772/17198

Aslam, E., & Haron, R. (2020). The influence of corporate governance on intellectual capital efficiency: Evidence from Islamic banks of OIC countries. *Asian Journal of Accounting Research, 5*(2), 195–208. https://doi.org/10.1108/AJAR-05-2020-0030

Attar, M., Kang, K., & Sohaib, O. (2019). Knowledge sharing practices, intellectual capital, and organizational performance. *Hawaii International Conference on System Sciences*. https://hdl.handle.net/10125/59994

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.

Biswas, S., & Verma, A. (2021). Impact of human capital on research productivity of Indian Institutes of Technology. Journal of Intellectual Capital, 22(3), 349-365.

Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.

Cañibano, L., & Sánchez, M. P. (2009). Intangibles in universities: Current challenges for measuring and reporting. *Journal of Human Resource Costing & Accounting, 13*(2), 93–104.

Chatterji, N., & Kiran, R. (2022). The influence of human, organizational and relational capital of universities on their performance: A developing economy perspective. *Journal of Intellectual Capital*. https://doi.org/10.1108/JIC-03-2021-0087

Christabel, M., Hasya, A., & Muharam, H. (2024). Human capital on organizational performance: The essence of knowledge sharing practices. International Journal of Management and Economics, 6(2), 11-18. https://www.managementjournals.net/assets/archives/2024/vol6issue2/6029.pdf

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Cricelli, L., Greco, M., & Grimaldi, M. (2018). An overall index of intellectual capital for the academic sector. *Journal of Intellectual Capital, 19*(4), 935-956. https://doi.org/10.1108/JIC-11-2017-0155

Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen, D. J. (2011). Does human capital matter? A meta-analysis of the relationship between human capital and firm performance. *Journal of Applied Psychology, 96*(3), 443–456. https://doi.org/10.1037/a0022147

Dawkins, J. (2023). Enhancing student employability through human capital development in university education. Journal of Education and Work, 36(1), 45-61. https://doi.org/10.1080/13639080.2022.2119880

Deloitte. (2024). 2024 Global Human Capital Trends. Deloitte Insights. https://www.deloitte.com/us/en/insights/topics/talent/human-capital-trends/2024.html

Dinh, C. T.-H., & Tran, N. P. (2025). National Intellectual Capital and Citizen Prosperity: Can Institutional Quality Enhance Positive Impacts? Journal of the Knowledge Economy. https://doi.org/10.1007/s13132-025-02699-5

Evers, G. (2025). Graduate hiring as a human capital outcome of university-industry collaboration. Journal of Higher Education Management. https://doi.org/10.1080/13662716.2025.2482040

Fahimnia, B., Motevali Haghighi, S., & Farid, S. (2021). Human capital development and employability of university graduates: Study from Iranian universities. Human Resource Development International, 24(5), 447-465. https://doi.org/10.1080/13678868.2021.1986249

Fernando, W. H. M., & Yusoff, S. K. M. (2023). A review on human capital: Two principal ideas—Generic and specific human capital. *European Journal of Economic and Financial Research, 7*(1), 1–9. https://doi.org/10.46827/ejefr.v7i1.1430

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE Publication

Gaffaro Garcia, A. J., & Naranjo Tuesta, Y. (2025). The third mission of universities towards knowledge transfer, innovation, entrepreneurship, and sustainable development: A systematic literature review. RAE - Revista de Administração de Empresas, 65(3), e2024-0218. https://www.scielo.br/j/rae/a/HFvdr47Pwzy9565bthQzhbc/?format=pdf&lang=en

Guerrero, M., Urbano, D., Fayolle, A., & Mian, S. (2021). Fulfilling university third mission: Towards an ecosystemic strategy of entrepreneurship education. Studies in Higher Education, 46(11), 2341-2357. https://doi.org/10.1080/03075079.2021.1896806

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal, 17*(S2), 109–122. https://doi.org/10.1002/smj.4250171110

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2020). *Multivariate data analysis* (8th ed.). Cengage Learning.

Haris, M., Yao, H., Tariq, G., Javaid, H. M., & Malik, A. (2018). The impact of intellectual capital and employee size on bank profitability: A comparative study of Islamic and conventional banks in Pakistan. *Pacific Business Review International, 11*(5), 66–82.

Hazelkorn, E. (2021). Global rankings and the association between human capital and university reputation. Higher Education Policy, 34(2), 245-265. https://link.springer.com/article/10.1057/s41307-020-00218-z

Huisman, J., & Cliquet, G. (2021). Human capital development and its relation to university ranking indicators. Research Policy, 50(6), 104249. https://www.sciencedirect.com/science/article/pii/S004873332100008x

Hassan, H., Kamaluddin, A., Saad, S., Haron, N. Q. A., Hamzah, N., & Kusumaningtias, R. (2022). Intellectual capital performance in higher education institutions: Evidence from public universities. *International Journal of Academic Research in Business & Social Sciences, 12*(11), 203–219. https://doi.org/10.6007/IJARBSS/v12-i11/15305

Hayton, J. (2005). Competing in the new economy: The effects of intellectual capital on corporate entrepreneurship in high technology, new ventures. *R&D Management, 35*(2), 137–155. https://doi.org/10.1111/j.1467-9310.2005.00378.

HEC (2025). *Rankings of Pakistani HEIs.* Available at: https://www.hec.gov.pk/english/services/universities/Ranking/Pages/Ranking-of-Pakistani-HEIs.aspx

Hejazi, R., Ghanbari, M., & Alipour, M. (2016). Intellectual, human, and structural capital effects on firm performance. *Knowledge and Process Management, 23*(4), 259-273. https://doi.org/10.1002/kpm.1517

Idström, T. (2020). Faculty human capital and the international university rankings: A comparative study. European Journal of Higher Education, 10(2), 172-188. https://doi.org/10.1080/21568235.2020.1729207

Knight, P., & Yorke, M. (2024). Human capital theory and employability: Bridging the gap between university learning and labor market outcomes. Higher Education, 87(3), 367-381. https://link.springer.com/article/10.1007/s10734-023-01052-8

Kong, E. (2008). The development of strategic management in the non-profit context: Intellectual capital in social service non-profit organizations. *International Journal of Management Reviews, 10*(3), 281–299.

Levina, E., Artemova, E., Kiryakova, A., Kriskovets, T., Ogorodnikova, V., & Kashina, S. (2019). University intellectual capital formation and development. *Humanities & Social Sciences Reviews, 7*(4), 1100–1107. https://doi.org/10.18510/hssr.2019.74150

Lu, W. M. (2012). Intellectual capital and university performance in Taiwan. *Economic Modelling, 29*(4), 1081–1089. https://doi.org/10.1016/j.econmod.2012.03.021

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Moore, D. S., Notz, W. I., & Flinger, M. A. (2013). *The basic practice of statistics* (6th ed.). W. H. Freeman.

Muhammad, S. F., & Abdullah, I. (2025). Strategic human capital outcomes in strengthening research publication and commercialisation for global visibility: The FPN experience. International Journal of Research and Innovation in Social Science (IJRISS), 3(8), 22-33. https://rsisinternational.org/journals/ijriss/articles/strategic-human-capital-outcomes-in-strengthening-research-publication-and-commercialisation-for-global-visibility-the-fpn-experience/

Musibah, A. S., & Alfattani, W. S. B. W. Y. (2014). The mediating effect of financial performance on the relationship between Shariah supervisory board effectiveness, intellectual capital and corporate social responsibility of Islamic banks in GCC countries. *Asian Social Science, 10*(17), 139–164.

Nakamura, L. (1999). Intangibles: What put the "new" in the new economy? *Federal Reserve Bank of Philadelphia Business Review*, July/August, 15–32.

Nawaz, T., & Haniffa, R. (2017). Corporate governance and intellectual capital: Evidence from an emerging economy. *Journal of Management & Governance, 21*(3), 591–620. https://doi.org/10.1007/s10997-016-9359-8

Nguyen, T. H., Le, M. T., & Bui, T. M. H. (2023). Relational capital and industry partnerships in higher education. *Higher Education Studies, 12*(4), 230–245. https://doi.org/10.5539/hes.v12n4p230

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). McGraw-Hill.

OECD. (1999). *Measuring and reporting intellectual capital: Experience, issues, and prospects.* OECD Publishing.

Okoro, E. U., & Chukwuemeka, E. C. (2024). Entrepreneurship education in universities as a credible strategy for job creation and economic development: Evidence from Cameroon. International Journal of Economics, Business and Management Research, 8(6), 42-60. https://ijebmr.com/uploads/pdf/archivepdf/2025/IJEBMR_1516.pdf

Orfan, S. N. (2024). Faculty research productivity at select higher education institutions. Cogent Social Sciences, 10(1), Article 2384241. https://doi.org/10.1080/2331186X.2024.2384241

Orjala, H., & Collan, M. (2025). National intellectual capital in academic journals: topics and trends. Journal of Innovation & Knowledge, 10(2), 100747. https://www.elsevier.es/en-revista-journal-innovation-knowledge-376-pdf-download-S2444569X25000927

Ousama, A. A., & Fatima, A. H. (2015). The association between intellectual capital and financial performance in Islamic banks. *Journal of Islamic Accounting and Business Research, 6*(2), 109-125. https://doi.org/10.1108/JIABR-02-2013-0006

Passaro, R., Quinto, I., & Thomas, A. (2018). The impact of higher education on entrepreneurial intention and human capital. *Journal of Intellectual Capital, 19*(1), 135-156. https://doi.org/10.1108/JIC-04-2017-0056

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Pedro, E., Leitão, J., & Alves, H. (2020). Bridging intellectual capital, sustainable development, and quality of life in higher education institutions. *Sustainability*, *12*(2), 479. https://doi.org/10.3390/su12020479

Peteraf, M. A. (1993). The cornerstones of competitive advantage. *Strategic Management Journal*, *14*(3), 179–191. https://doi.org/10.1002/smj.4250140303

Petty, R., & Guthrie, J. (2000). Intellectual capital literature review: Measurement, reporting and management. *Journal of Intellectual Capital, 1*(2), 155–176. https://doi.org/10.1108/14691930010348731

Ployhart, R. E. (2021). Resources for what? Understanding performance in the resource-based view and strategic human capital resource literature. *Journal of Management*, *47*(7), 1771–1786. https://doi.org/10.1177/0149206321990107

Popescu, C. R. G. (2019). Using intellectual capital measurements in universities to assess performance—Evidence from the Romanian education system. In *EDULEARN19 Proceedings* (pp. 6368–6377). https://doi.org/10.21125/edulearn.2019.1548

Pratolo, S., & Sofyani, H. (2023). The influence of intellectual capital on the performance of higher education institutions: The mediation role of performance measurement systems. *Jurnal Ilmiah Akuntansi*, *7*(2), 200–216. https://doi.org/10.23887/jia.v7i2.51850

Ramirez, J., Lorduy, C., & Rojas, J. A. (2017). Intellectual capital models. *Journal of Intellectual Capital, 18*(3), 587–618. https://doi.org/10.1108/JIC-11-2016-0114

Ramírez, Y., Manzaneque, M., & Priego, A. M. (2016). Formulating and elaborating a model for the measurement of intellectual capital in Spanish public universities. *International Review of Administrative Sciences*, *83*(1_suppl), 149–176. https://doi.org/10.1177/0020852316634445

Rehman, S. U., Elrehail, H., Alsaad, A., & Bhatti, A. (2022). Intellectual capital efficiency and bank performance: Evidence from Islamic banks. *Borsa Istanbul Review*, *22*(1), 113-121. https://doi.org/10.1016/j.bir.2021.02.004

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of Political Economy*, *94*(5), 1002–1037. https://doi.org/10.1086/261420

Roos, J. (1998). Exploring the concept of intellectual capital. *Long Range Planning*, *31*(1), 150–153.

Ruano-Borbalan, J. C. (2024). New missions for universities in the era of innovation. *Technology Innovation Management Review*, *14*(1), 45-58. https://doi.org/10.1177/2212585X241234334

Salmi, J. (2024). Strategies for enhancing institutional reputation: The human capital dimension. *Journal of Higher Education Management*, *38*(1), 13-30.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson Education.

Schultz, T. W. (1961). Investment in human capital. *The American Economic Review*, *51*(1), 1–17.

Volume 5 Issue No 2 (2026)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Secundo, G., Dumay, J., Schiuma, G., & Passiante, G. (2016). Managing intellectual capital through a collective intelligence approach: An integrated framework for universities. *Journal of Intellectual Capital, 17*(2), 298–319.

Shah, Z, Nesa, Z.U, Khan M.T., & Taj.S. (2025). Analyzing Weak Areas in Governance of Universities in Pakistan: A Case Study of Khyber Pakhtunkhwa Public Sector Universities. Jou*rnal of Social Signs Review, 3*(06), 108–125. Retrieved from https://socialsignsreivew.com/index.php/12/article/view/288

Shakir, K., Ramli, A., Pulka, B., & Ghazali, F. (2020). The link between human capital and cooperatives performance. *Journal of Entrepreneurship Education, 23*(1), 1–15.

Singh, V., Kumar, A., & Gupta, S. (2024). Structural capital investments and teaching quality. *International Journal of Academic Research, 61*(1), 80–98.

Slaughter, S., & Leslie, L. L. (1997). *Academic capitalism: Politics, policies, and the entrepreneurial university*. Johns Hopkins University Press.

Smith EA (2001), "The role of tacit and explicit knowledge in the workplace". Journal of Knowledge Management, Vol. 5 No. 4 pp. 311–321, doi: https://doi.org/10.1108/13673270110411733

Spender, J. C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal, 17*(S2), 45–62. https://doi.org/10.1002/smj.4250171106

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

The Express Tribune. (2025, May 6). K P universities face severe financial crisis. The Express Tribune. https://tribune.com.pk/story/2544174/k-p-universities-face-severe-financial-crisis

Uriguen Aguirre, P. A., & Avolio Alecchi, B. E. (2023). Impact of intellectual capital on organizational performance through intrinsic motivation in higher education institutions. *Cogent Business & Management, 10*(1), 2189772. https://doi.org/10.1080/23311975.2023.2189772

Verona, G. (1999). A resource-based view of product development. *Academy of Management Review, 24*(1), 132–142. https://doi.org/10.5465/amr.1999.1580445

Villegas-Mateos, A., & Amann, W. (2025). The impact of university-based entrepreneurial ecosystems on students' entrepreneurial intentions. International Journal of Entrepreneurship, 29(S2),1-14. https://www.abacademies.org/articles/the-impact-of-universitybased-entrepreneurial-ecosystems-on-students-entrepreneurial-intentions-17493.html

Yang, R., & Welch, A. (2022). Human capital and university rankings: The case of Asia-Pacific universities. *Asia Pacific Journal of Education, 42*(4), 499-518. https://doi.org/10.1080/02188791.2022.2035287