



Research Article

The role of human capital, structural capital, and relational capital in higher education institutions performance

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ABSTRACT

Universities are the centre of knowledge generation; hence they are completely dependent on their intellectual resources. This puts Pakistan's private sector institutions in a difficult position at the moment. They lack all the intangible resources required for more efficient operation of schools; these resources often depend on intellectual capital (HC, SC, and RC), widely acknowledged as an intangible capital of higher learning. Pakistan's higher education system is ranked 150th out of 189 countries, and it lags far behind its neighbours in terms of research output. As a result, the main focus of this research will be intellectual capital as a crucial component influencing Pakistani institutions' success. The most recent assessment identified significant shortcomings in Pakistan's higher education system and offered potential remedies, including the addition of intellectual capital to improve HEI performance. The current study adopts a positivist viewpoint and a logical methodology. Primary data will be gathered using surveys, with the target demographic being directors, HoD's, and deans of Pakistani universities.

1. INTRODUCTION

Higher education plays a vital role in the industry's growth and development. It gives people the chance to use their educational talents to take part in the process of growth (Nisar, 2019). Unfortunately, there are several shortcomings in Pakistan's education system, especially in higher education, which has led to a number of issues. Since the nation's founding, the Pakistani government has underinvested in education, which has led to a number of obstacles to the advancement and growth of the nation (Akbar & Khan, 2020). Higher education, on the other hand, is the most important source of in-depth knowledge in a variety of life domains from a broader perspective in today's advanced society. As the world community expands, so do the opportunities and demands for higher education, as every citizen has a fundamental right to an education. The only way to achieve this is to hold HEIs to high standards (Iacoviello et al., 2019).



But as the demand for higher education rises, a variety of problems are having an impact on HEIs' performance, either directly or indirectly. The quality of instruction, which includes all facets of academic activity such as teaching, students, administration, and learning materials, is the primary problem facing Pakistan's higher education establishments (Urighuen Aguirre & Avolio Alecchi, 2023). A monitoring system, effective feedback, research skills, infrastructure, a supportive learning environment, and teaching standards are just a few of the elements that influence education quality (Murtaza & Hui, 2021). Most importantly, the quality of higher education is often regarded as a gauge of the prosperity of a country. Countries with sufficient information might realize this and try to improve educational standards to improve university performance (Weqar et al., 2021). Unfortunately, there are a number of problems with Pakistan's higher education system's quality (Ali et al., 2022).

The main causes of low educational quality include outmoded and inadequate teaching strategies as well as political influence in the selection of educators (Murtaza & Hui, 2021). However, Pakistan's higher education institutions are also having problems with global university rankings as a result of the country's low educational standards. While rankings are a well-known phenomenon that aids the public in choosing the best universities for higher education, most developing nations, including Pakistan, have only recently begun to use them (Awan, 2020). While the HEC of Pakistan was established in 2000 and was the first organization in Pakistan to use a ranking system for evaluating university performance, these rankings provide the public with easily understandable information, highlight competition amongst institutions, and provide a broad picture of the overall condition of the institutions (Ali et al., 2022). The capacity of higher education institutions to progress is demonstrated by its growth, but regrettably, Pakistan's higher education environment is steadily deteriorating. One of the most important factors in improving the state of higher education institutions is the availability of resources, which can be crucial in boosting productivity and minimizing disadvantages in the global market (Malik et al., 2021). The current study will help close the gaps that impede the effectiveness of higher education institutions and offer suitable ideas that will support the institutions in finding practical answers to their issues.

2. LITERATURE REVIEW

2.1. HIGHER EDUCATION INSTITUTIONS PERFORMANCE

Based on worldwide accomplishments in academic excellence, the perception of performance at HEIs is assessed. In contrast, higher education institutions' performance is defined by Pannu (2015), as a multifaceted notion built on both subjective and objective performance. Subjective performance is determined by factors such as academic success, staff and teacher satisfaction, research and publication activities, and quality of instruction, whereas objective performance is determined by all financial metrics. Similar to this, Awan and Saeed (2015), defined the success of higher education institutions as knowledge development, utilization, and application, with graduates having high employability, productivity, and other outcomes in the form of goods and services.

While according to Higgins, (2010) noted that research and education aspects of higher education institutions' performance could be used to gauge their effectiveness and how well they align with universities' roles and functions, higher education institutions must constantly improve their performance in order to serve as a platform for meeting the socioeconomic demands of society. In a similar line, publications, graduation rates, and average study duration can all be used to evaluate the efficacy of higher education institutions (Barbosa et al., 2016). Higher education performance is determined by combining different performance metrics to determine how well higher education is performing (Sahney & Thakkar, 2016). Prior research employed diverse performance metrics to gauge performance, which is inherently subjective and can be evaluated by examining the efficiency and efficacy of tertiary education (Albekov et al., 2017). Furthermore, as centres of knowledge creation, universities employ an input, processing, and output model in which academic staff and teachers serve as the system's inputs, students' performance serves as the process's output, and higher education institutions themselves are the product (Ali et al., 2022).

The performance of higher education institutions is a complex endeavour that calls for all staff members' and students' complete participation in order to improve performance (Matos et al., 2020). Pakistan's higher education institutions are now dealing with a variety of issues. These issues include a lack of funding, inadequate facilities, a shortage of qualified personnel, inconsistent policies, ineffective management, an antiquated educational system, ineffective teaching methods, subpar research, and a dearth of research opportunities. As a result, these issues directly impede academic effectiveness, which is why there are currently significant gaps between higher education institutions and their ability to produce quality instruction (Nisar, 2019).

These issues with academic efficacy are the result of an ineffective governance structure; the administration is not trying to improve the educational system, which will result in poor performance in Pakistan's higher education institutions (Akhtar et al., 2011). As a result, at the academic level, research and teaching must be properly balanced because research is essential to faculty growth and academic performance (Murtaza & Hui, 2021).

As in most other developing nations, university-industry partnership has expanded slowly in Pakistan. This has happened in the past in many industrialized economies when businesses have been slow to see the potential benefits of collaborating with universities to acquire new scientific ideas and competences for industry R&D (Malik et al., 2021). The disheartening aspect of Pakistan's industrial university networking situation is that major players are taking distinctly diverse routes. The primary obstacle is the dearth of significant industry activity aimed at collaborating with universities and the institutions' disinterest in fostering cooperation (Raza, 2021).

Knowledge-intensive companies can use the framework provided by the resource basis view (RBV) and knowledge base view (KBV) theories to address challenges by employing the appropriate intangible resources. Universities are knowledge-intensive businesses that mostly rely on intangible resources to boost productivity (Barney, 2001). Intellectual capital, which combines human, relational, structural and capital, is the most significant intangible

resource for enhancing institutional performance (Curado & Bontis, 2007). Scholars and practitioners have been looking more and more at the intellectual capital component as knowledge-based economies have risen quickly. They see it as a more significant determinant in determining improved institutional performance than traditional material resources (Wang et al., 2021).

However, a number of scholars have developed the theoretical framework around intellectual capital and have generated evidence showing that intellectual capital and its components increase the functioning of the institution. As an intangible knowledge resource, intellectual capital, for example, offers a competitive advantage in terms of performance improvement, according to a prior theoretical analysis of intellectual capital (Mumtaz, 2014). Similar to this, Chatterji and Kiran (2017), pointed out that intellectual capital is a crucial component that would support the growth and efficacy of higher education institutions.

2.2. PERFORMANCE OF HIGHER EDUCATION INSTITUTIONS AND INTELLECTUAL CAPITAL

A behavior that requires mental activity is known as intellectual capital. When it comes to improving organizational performance, knowledge-based activities are crucial. Tangible assets are easily copied and are not firm-specific, whereas intangible assets are difficult to copy, have a limited lifespan, and are firm-specific. Intellectual capital causes manufacturing economies to transform into knowledge economies, as illustrated by the idea further expounded by Bisogno et al., (2018) in terms of intangible assets.

According to (Iacoviello et al., 2019), on the other hand, defined the notion in different kinds of knowledge, capacities, tangibles, and employee relationships at the organizational level. These can be categorized as relational, structural, and human capital. Because universities are knowledge-creating platforms that primarily rely on intellectual aptitude, the value of intellectual capital in the education industry is critical (Zhang & Phromphitakkul, 2021). When universities use their intellectual capital effectively to improve performance and gain a competitive edge, they are able to work efficiently and without any kind of pressure (Bellucci et al., 2020).

The relationship between intellectual capital (IC) and academic success has been studied in the past. For example, Bratianu and Pînzaru (2015), highlighted the value of IC in the knowledge economy as a means of addressing the problems and difficulties faced by higher education. The relationship between intellectual capital and university performance is also examined in another study by Anggraini et al. (2018), which makes clear that performance is significantly improved by intellectual capital and its constituent parts. Conversely, acquiring a meaningful competitive advantage requires intellectual capital.

According to Sharafi and Abbaspour (2013), intelligence plays a significant role in improving academic achievement. Additionally, Barbosa et al. (2016), examined the relationship between intellectual capital and performance in HEIs, finding that there was an empirical relationship between the perceived performance of these organizations and intellectual capital that gave them a competitive edge and helped them perform better.

Although intellectual capital is becoming more and more essential in research institutes and universities, there is little discussion of its significance in educational literature when it comes to enhancing performance (Chatterji & Kiran, 2017). However, because there aren't enough studies on the connection between HEI success and intellectual capital, the findings are contradictory.

2.3. PERFORMANCE OF HIGHER EDUCATION INSTITUTIONS AND HUMAN CAPITAL

Human capital includes several resource factors like attitude, intellectual agility, tacit knowledge, people's skills, and employee knowledge, competence, skill, capability, and inventiveness (Kousar et al., 2019). The ability of an organization to create value in the modern period is primarily dependent on the knowledge, abilities, and training of its personnel. The information that researchers, PhD applicants, academic staff members, would take with them if they were to leave the university is known as human capital (Ali et al., 2022).

Prior research has demonstrated the connection between the success of higher education institutions and human capital. It has been discovered that human capital is a basic component of intellectual capital, which encompasses all employee-based endeavours. The results of the study by Fivi et al., (2018) showed that there was a significant relationship between human capital (HC) and university performance. Since effective use of human resources can eventually improve performance, the relationship between HC and university performance was found to be significant.

In a similar vein, research done by (Iacoviello et al., 2019) similarly suggests that human capital is the most important factor in improving the performance of higher education institutions. The study's findings showed that human capital significantly impacted university performance. In the meantime, a study by Haris et al., (2019) found that human capital has a substantial impact on the performance of higher education institutions. The findings of this study likewise showed a positive and significant association between higher education performance and human capital. A major factor in success and a strong predictor of improved performance in higher education was human capital, according to Sharafi and Abbaspour, (2013) analysis of the relationship between human capital and university performance. Human capital is the wellspring of innovation and strategy renewal, and it encompasses all the necessary components that aid institutions in improving performance (Mumtaz, 2014). Based on previous study, it can be concluded that human capital plays a major role in elevating higher education performance and has a favourable relationship with higher education institutions.

2.4. PERFORMANCE OF HIGHER EDUCATION INSTITUTIONS AND STRUCTURAL CAPITAL

The term "structural capital" describes all knowledge sources that are not created by humans, such as organizational charts, databases, process manuals, strategies, and regulations (Bontis et al., 2000). According to Secundo et al., (2016), it encompasses all of the organization's collected intellectual resources, including internal procedures, technological elements, organizational practices, and capacities.

While structural capital is always present in institutions and can be shared and altered, human capital does not remain within them (Khalique et al., 2011). Structural capital of the institution is seen to be one of the main factors that improves performance within the company. Structural capital is created from human capital and consists of knowledge and intangible assets acquired from the organization's activities. Among its components are information accessibility, procedural innovation, and efficiency for knowledge codification (Edvinsson & Sullivan, 1996). The phrase "structural capital refers to an organization's system and structure that lead to generate value added products and gain a competitive advantage for the organization," however, was stated by Ramezan, (2011). Todericiu & Stanit, (2016) emphasized the importance of structural capital in the context of universities. They defined structural capital as knowledge that is incorporated into the procedures, institutional culture, and professional relationships within and outside of the university.

In previous research, a number of studies have interpreted the relationship between structural capital and improving institutional performance. For example, Pulungan et al. (2017), found that higher education institutions have a positive and significant relationship with structural capital, indicating that an institution's strong structural capital can aid in improving performance. In a similar vein, in a study of Fivi et al., (2018) investigated the function of structural capital in the performance of higher education institutions; the study's findings demonstrated a substantial correlation between SC and HEIs. According to a related study by Matos et al., (2020), structural capital played a key role in improving the performance of educational institutions.

Pedro et al. (2019), study offered more proof that an organization's structural capital is crucial for improving its performance. The study's findings also showed a significant positive correlation between structural capital and higher education institutions' performance. An institution's structural capital is essential since an organization cannot grow and function without a well-organized structure.

A statistically significant positive link between university performance and structural capital was found by Kousar et al., (2019) through empirical testing. It has been determined by prior studies that structural capital helps higher education institutions function better. The bulk of research in the literature have identified positive connections between structural capital and HEIs, however a small number have found negligible or negative relationships (Fivi et al., 2018).

2.5. PERFORMANCE OF HIGHER EDUCATION INSTITUTIONS AND RELATIONAL CAPITAL

The relationships that a firm has with its suppliers, customers, partners, and other stakeholders are strengthened by relational capital, the third important component of intellectual capital. In order to achieve their objectives, businesses and their stakeholders create capital through the development, maintenance, and investment of relationships (Edvinsson & Sullivan, 1996). Organizational relational capital is the term used to describe the integration and connections both inside and outside the organization (Shehzad et al., 2014). Canibano et al. (2002), defines the idea of relational capital as "all resources tied to the firm's external relationships, such as customers, suppliers, or R&D partners." Examples

of this group include image, customer satisfaction and loyalty, ties with suppliers, commercial power, ability to negotiate with financial institutions, environmental actions, and so forth."

Relational capital in the context of universities is defined by Leitner, (2004) as the exchanges and partnerships between academic institutions and non-academic partners, including businesses, government agencies, municipal governments, non-profit groups, and the general public. The relationship between higher education and business has been deemed to be crucial for assessing how research and outside actors interact, as well as being the main measure of relational capital (Alvino et al., 2021).

A large body of previous research has shown how relational capital improves organizational effectiveness. In contrast, a study by Gaur and Gupta (2023), looked at the contribution that relational capital the third element of intellectual capital makes to enhancing institutional performance. The study's conclusions also provide empirical proof of the important connection between higher education institutions and relational capital.

Comparably, a study carried out by Ali et al. (2022), also showed that relational capital was a crucial part of intellectual capital and that it had a significant but less significant association with the performance of higher education institutions. The findings of this study demonstrated that relational capital had a favourable association between higher education institutions. Similarly, strong institutional external and internal relationships aid stakeholders for future prospects.

In summary, relational capital refers to all the resources connected to an organization's external partners, including the government, suppliers (teachers), clients (students), and partners in research and development. It also refers to the relationship between relational capital and the performance of higher education institutions (Paloma Sánchez, & Elena, 2006). According to Chatterji and Kiran (2017), universities should have tight relationships with government agencies in order to strengthen their relational capital. This is in keeping with the relationship between relational capital and higher education institutions.

2.6. RESEARCH FRAMEWORK

Conceptual Framework Based on a review of the literature and previous research, the conceptual framework (Fig. 1) that follows is suggested for the current study.

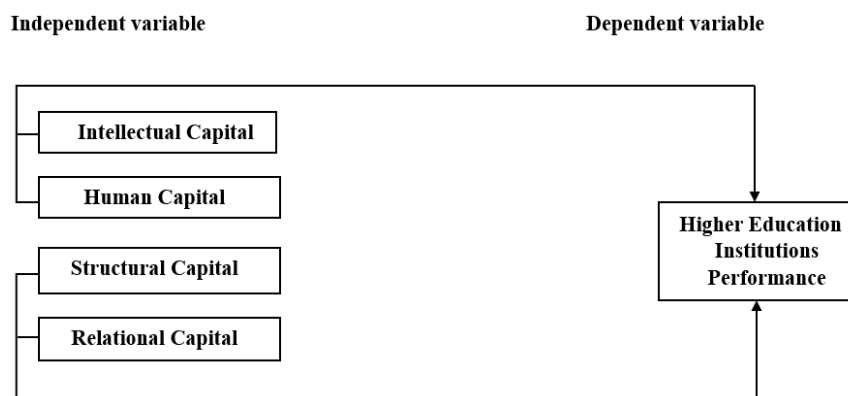


Fig. 1. Conceptual Framework

To strengthen the importance and influence of intellectual capital on the long-term success of higher education institutions, a conceptual framework grounded in prior research is created. The performance of these institutions is improved through the mediating effect of innovation.

2.7. HYPOTHESIS DEVELOPMENT

The following are the hypotheses derived from previous studies:

H1a: There is positive relationship between intellectual capital and Higher Education Institutions performance.

H1b: There is positive relationship between human capital and Higher Education Institutions performance.

H1c: There is positive relationship between structural capital and Higher Education Institutions performance.

H1d: There is positive relationship between relational capital and Higher Education Institutions performance.

3. METHODOLOGY

Three variables are integrated in this study: The variable of intellectual capital is independent, higher education institutions are a dependent variable, and the framework was developed based on earlier research. The difficulty that Pakistan's higher education institutions are facing serves as the basis for this study, which also draws from a review of the literature and earlier research. The current investigation should follow the positivist paradigm and the deductive technique in order to examine the hypothesis. The unit of analysis should be "universities" or other organizational levels, and the major data gathering method will be utilized. The target group for the study would therefore be the department heads, deans, and directors of Pakistani institutions. Since the target population is specific, stratified proportionate random sampling is implied by the probability sampling approach, which will be used for this investigation. The most recent version of smart PLS would be utilized for additional analysis. The data would be cross-sectional in nature and gathered through survey questionnaires.

4. DISCUSSION, IMPLICATIONS AND CONCLUSION

The current study highlights the serious problems that Pakistani higher education institutions are facing and suggests possible solutions, such as increased performance through innovation and intellectual capital. Universities are the hubs of knowledge creation, and because most of their resources are intangible, they can use intellectual capital another intangible resource to boost the effectiveness and efficiency of their operations. The literature study featured a number of studies on the effects of intellectual capital on higher education institutions, and these studies demonstrate how intellectual capital can provide HEIs with a competitive advantage in their day-to-day operations.

In a similar spirit, the present study emphasizes how innovation's mediating function contributes to the enhancement of institutional performance. Gaining a competitive edge

and enhancing performance can be achieved by using innovation speed, which refers to the pace at which new technologies and instructional strategies are embraced. On the other hand, innovation quality describes an organization's ability to implement cutting-edge teaching techniques that differentiate it from competitors. The results of the new study will help university administration since they provide vital information on the role that intellectual capital and innovation play in improving academic achievement. This study will also look at how well intellectual capital and its three constituent's human, structural, and relational capital help organizations obtain a competitive edge. Furthermore, innovation can serve as a mediating variable in the form of speed and quality, propelling universities to the forefront of their respective fields and providing them with a competitive edge over their competitors.

The key conclusion drawn from the literature is that intellectual capital, which has three basic dimensions: relational, structural, and human capital, has a considerable impact on the performance of higher education institutions. Each dimension significantly affected performance, but research shows that intellectual capital is the main tool used by institutions to improve performance over time. Structural capital and relational capital rank second and third, respectively, in terms of contributing to improved performance; overall, research shows that human capital is the main tool used by institutions to improve performance. As per the findings of the literature review, innovation functions as a mediator and enhances the performance of postsecondary educational establishments. It also enhances the performance of institutions that are in the middle of intellectual capital and higher education establishments. As a result, the main indicators of higher education institutions' long-term performance are mediator innovation and intellectual capital.

Author Contributions:

Qalander Buksh Ali was crucial in the creation of the project's initial concept, the technique, and the first drafting of the document. Md. Lazim Bin Mohd Zin and Saiful Azizi bin Ismail responsibility were to gather and analyze the data. Qalander Buksh Ali was involved in visualization creation, text revision, and editing. All authors read and approve the final manuscript.

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