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## The Mediating Role of Innovation on The Relationship Between Intellectual Capital and Private Universities Performance of Pakistan

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### Abstract

Universities are the hub of knowledge creation which totally based on their intellectual resources, currently the condition of Pakistan private sector universities are facing huge trouble. Universities are lacking from all their intangibles resource which can help them in successive performance, these resources normally based on the intellectual capital which is usually considered as an intangible capital of universities. Pakistan higher education is ranked at 150<sup>th</sup> spot out of 189 countries and also far behind in research productivity as compared to the neighbour countries. Therefore, current study will focus intellectual capital as a key determinant in the successive performance of private universities performance in Pakistan with mediating role of innovation in terms of speed and quality. The current study highlighted the important flaws in higher education institutions of Pakistan and provides possible solutions in the form of intellectual capital and innovation that can enhance the performance of HEI's. Positivist paradigm and deductive approach has been used in current study, primary data collection shall be conducted through questionnaire and the target population would be considered full time faculty members of private universities operating in Pakistan.

**Keywords:** Intellectual Capital, Private Universities Performance, Innovation, Higher Education Institutions

### Introduction

The growth and development of the industry depends on the input of higher education. It provides the opportunity to the individuals to participate in the development process through their educational skills (Barnett, 1992). Unfortunately, Pakistan's education system is beset by inadequacies, particularly in higher education, which has resulted in several difficulties. Meanwhile, the Pakistani government has been underinvesting in education from the

country's creation, which has created multiple barriers to the country's progress and expansion (Akbar & Khan, 2020). Whereas, in the modern and advanced society higher education is the foremost source to provide the in-depth knowledge in various domains of life in broader perspective which aim to educate, train, research and serve society therefore, with the advancement of global world opportunities and demands are increasing for higher education, and this can only be possible by building high quality standards for HEI's because every citizen has a basic right to get education (Ashraf, 2019).

But, with the increasing demand for higher education there are various challenges who are directly or indirectly affecting the performance of HEI's. Quality of education is the major challenge for higher education institutions of Pakistan, it includes all the function that are practice in academia such as teaching, students, structure, and learning resources (Ullah et al., 2011). Quality of education depends on various components for instance learning environment, favourable teaching standards, infrastructure, research skills, monitoring system and effective feedback (Nisar, 2019).

Most importantly, quality of higher education has become a benchmark for the success of any country, countries having proper understanding might know the importance and try to take appropriate ways to enrich the quality of education to improve their higher education institutions performance (Muhammad et al., 2011). But unfortunately, Pakistan is facing numerous challenges in quality of higher education (Halai, 2013). The important reason behind poor quality of education is inappropriate and outdated methods of teaching and political involvement in teachers hiring (Murtaza, 2021).

On the other hand due to poor quality of education higher education institutions of Pakistan are also facing issues in world universities rankings, ranking is an old known phenomenon for the general public that helps them to select the best universities for higher education but most of the underdeveloped countries like Pakistan adopted it lately (Tanveer, 2020). Whereas in Pakistan higher education commission was established in 2000 and introduced ranking system as a tool for performance evaluation of universities for the first time in Pakistan, as a result these rankings provide interpretable information, competition among other institutions, and overall scenario of institutions to the public (HEC, 2016). But unfortunately, the current position of higher education institutions specially private higher education institutions are worst, the statistics from the (HEC, 2016) rankings and (Economic survey of Pakistan, 2019) survey report, clearly indicates that out of 85 private universities only 2 universities stands in top rankings internationally and similar in case of Asian rankings only 3 universities were manage to secure their place in top 500. The growth of higher education shows the ability of advancement in higher education institutions, but unfortunately the conditions of Pakistan higher education is falling gradually. The availability of resources are the key elements to improve the conditions of higher education institutions, the resources can play vital role in increasing the performance and reduce the drawbacks in capturing global economy (Nisar, 2019). The current study will contribute to fill the gaps that are creating hurdles in the way of private higher education institutions performance and provide appropriate solutions that will helps the institutions in resolving their problems in effective manner.

## **Literature Review**

### **University Performance**

The impression of performance in HEI's is evaluated on the bases of global achievements in academic excellence, whereas according to the definition of (Rabbi, 2015) higher institutions

performance are the multi-dimensional concept these concepts are based on subjective performance and objective performance. Subjective performance is based on quality of education, academic effectiveness, research activities and publication and staff and teachers' satisfaction etc and objective performance is based on all the financial measures. Similarly higher education institutions performance was described by (Awan, 2015) as in terms of creation of knowledge, knowledge utilisation and knowledge application where the output will be graduates with high employability, research out and productivity, and else product and services.

Higher education institutions are always required to increase their performance efficiently to become a platform in fulfilment of socio-economic demands of society whereas, according to (Wang, 2010), described that the higher education institutions performance could be measured from education and research aspects, which are in line with the university roles and functions. In similar line higher education institutions performance can be judge through publications, graduations rate, average duration of studies to measure the performance (Barbosa et al., 2016). Higher education performance is the combination of various performance indicators through which performance of higher education can be measured (Thakkar, 2016). Previous studies had used various performance indicators to measure performance as subjective in nature and can be assess through efficiencies and effectiveness of university education (Albekov et al., 2017). Moreover, higher education institutions are knowledge creation institutes and work as an input, processing and output approach, where teachers and professors are the inputs and system is the process and out puts are the performance of students and higher education institutions (Chinta et al., 2016).

The higher education institutions performance is a complex task which required the full attention and participation of every staff and students to enhance their performance (Zlate et al., 2015). Currently, Pakistan's higher education institutions are facing multidimensional problems. These problems include lack of resources, poor infrastructure, lack in qualified staff, inconsistency in the polices, managerial inefficiency, inefficient educational system, outdated educational material resources, inefficiency in teaching, poor research and lack in research opportunities, therefore these problems are directly creating hindrance in the way of academic effectiveness, that is why currently there is a huge flaws between higher education institutions and their academic effectiveness (Nisar, 2019).

These academic effectiveness problems are due to inappropriate governance system, the management is not providing their efforts in improving education system this will cause low performance in higher education institution of Pakistan (Muhammad et al., 2011). therefore an academic level, there must be a proper balance between research and teaching, as research is critical for faculty development and academic effectiveness (Salman et al., 2018). In Pakistan, and in most of underdeveloped countries, university-industry collaboration has grown slowly, many industrialised economies have previously encountered a situation where it took a long time for companies to recognise that collaborating with universities as a means of acquiring new scientific competencies and fresh ideas might be extremely beneficial to industrial research and development (Malik et al., 2021). The collaboration of universities and industries in Pakistan has not been adequately recognized particularly by the private sector, as a result the concept of university-industry linkage is rarely used in context of Pakistan (Bashir et al., 2010). Pakistan's industrial university linking status is still depressing all the important contributors are moving in opposite directions. The major stumbling block is universities' lack of concern in producing collaborations, as well as industry' lack of real initiatives to collaborate with universities (Raza, 2021).

Universities are the knowledge intensive organizations and mostly used intangible resources to enhancing their performance, resource base view (RBV) and knowledge base view (KBV) theory provide the platform to the knowledge intensive organization to solve their problem by using appropriate intangible resource (Barney, 1991). The most important intangible resource in enhancing performance is intellectual capital resource, it is the combination of human, structural and relational capital that can help the institutions in enhanced performance (Curado, 2007). Intellectual capital component was prominently used by various scholars and practitioners because of the rapid rise of knowledge-based economies. It is viewed as a more crucial aspect than traditional tangible resources in determining enhanced institutional performance. Therefore Universities can work efficiently and have the freedom to pursue resources and to obtain a competitive advantage and increase performance, universities must invest in intangible resources (Wang et al., 2021).

However, the theoretical perspective of intellectual capital had elaborated by various scholars and provided the evidence that intellectual capital and its components helps the institutions in enhanced performance for instance based on the previous theoretical consideration related to intellectual capital according to (Mumtaz et al., 2014) stated that intellectual capital as an intangible knowledge resource provides competitive advantage in enhancing performance. Similarly according to (Chatterji et al., 2017) also stated that intellectual capital in higher education institutions is a prominent factor that will be beneficial for the institutional growth and performance.

### **Intellectual Capital and University Performance**

Intellectual capital is a behavior that necessitates mental exercise. It is knowledge-based activities which is most important in enhancing organizational performance. The concept of intellectual capital defined by (Curado, 2007) as in term of tangible and intangible assets where tangible assets are not firm specific and can be easily replicated and on the other hand intangible assets are firm-specific, have a limited lifespan, and are difficult to duplicate. The concept further described by (Marr, 2003) in terms of intangible assets and explained it as manufacturing economies become knowledge economies as a result of intellectual capital.

Whereas according to (Stewart, 1997) described the concept in terms of various forms of knowledge, capacities, tangibles and organizational level employee relationships which can be classified as human capital, structural capital, and relational capital. The importance of the intellectual capital in education sector is vital specially in universities because they are knowledge creating platforms and mostly based on intellectual ability (Shehzad et al., 2014). Universities process the ability to work effectively and are free from any type of pressure resources when its intellectual capital are utilized properly to enhance the performance and that helps them in attaining competitive advantage (Saengchai et al., 2019).

The relationship between IC and university performance had been discussed in past studies for instance in the study of (Bratianu, 2015) describe the importance of intellectual capital in knowledge economy to overcome the issue and challenges of universities. In another study conducted by (Anggraini, 2018) also investigates the relationship of intellectual capital and university performance the study prominent that the intellectual capital with its components plays a significant role in enhancing performance. Whereas intellectual capital is the crucial element in attaining effective competitive advantage.

In a study of (Sharafi & Abbaspour, 2013) investigated that intellectual is a major contributor in enhancing university performance. Furthermore, intellectual capital and

performance in HEI's was explored according to (Barbosa et al., 2016) he investigated that the perceived performance of higher education organizations in relation to intellectual capital had an empirical relationship that helps them in enhancing their performance and provide competitive advantage. In spite of the fact that intellectual capital is becoming increasingly important at research institutes and universities, its importance in improving performance is rarely discussed in educational literature (Chatterji et al., 2017). But due to scarce of studies available on the relationship between intellectual capital and HEI' performance, the results were mixed and inconsistent. According to several studies, the relationship between intellectual capital and higher education institutions showed a significant relationship (Alipour, 2012; Bisogno et al., 2018; Lu et al., 2014; Ozkan et al., 2017; Saeed et al., 2013; Wasim-ul-Rehman et al., 2013) and the results from these studies revealed that intellectual capital can provide help in enhancing performance.

### **Human capital and University Performance**

Human capital is associated with employee's knowledge, competencies, skill, capability and innovation; and various resource elements attitude and intellectual agility, tacit knowledge, talents of people, (Khalique et al., 2013). Nowadays, knowledge is the essence of an institution and its ability to create value, which is dependent on its employees' learning, knowledge, and skills. The information that the university's faculty/employees (in this case, professors, researchers, PhD students, and administrative staff) would take with them if they left the institution is referred to as human capital (Mumtaz et al., 2014). Previous studies that had been highlighted the relationship between human capital and higher education institutions performance, human capital has been found a fundamental element of intellectual capital which deals in all the efforts based on employees. According to the study of (Fivi et al., 2018) human capital had a significant relationship between university performance, a proper utilization of human efforts can ultimately enhance the performance thus the findings revealed that relationship between HC and university performance had a significant impact. Similarly another study was conducted by (Pulungan et al., 2017) also indicates that human capital is most prominent element in enhancing higher education institutions performance, the results of his study revealed that human capital had a significant influence on universities performance. Meanwhile a study conducted by (Awan, 2015) also stated that human capital had a high impact on higher education institutions performance and similarly results of this study also revealed the positive significant relationship between human capital and higher education performance. In the line of relationship of human capital and universities performance (Sharafi & Abbaspour, 2013) also given the same interpretation that human capital was major performance contributor and had a significant relationship in achieving enhanced higher education performance. Human capital includes all the essential elements that helps the institutions in enhancing performance, it is also the source of innovation and renewal of strategies (Mumtaz et al., 2014). In conclusion based on past research human capital had a positive relation between higher education institution and is consider the most important contributor in escalating higher education performance.

### **Structural Capital and University Performance**

Structural capital is defined as all the non-human knowledge repositories, such as databases, organizational charts, process manuals, strategies, procedures, and policies (Bontis, 2000). It encompasses an organization's accumulated intellectual resources, such as organizational

routines, internal processes, capabilities, and technology components, as well as intellectual properties and to put it another way, structural capital is the backbone of an organization's intellectual capital (Secundo et al., 2016). The institutions do not remain its own human capital with it, while structural capital all the time remained with institutions and it can be shared and modified (Khalique et al., 2011). Institutions structural capital has been considered one of the major contributors that help the organization in enhancing performance. Structural capital is derived from human capital and consists of a combination of knowledge and intangible assets derived from the organization's procedures. It includes components such as efficiency, procedural innovation, and availability to information for codification into knowledge (Edvinsson & Sullivan, 1996). However, according to (Ramezan, 2011) stated that the term "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". In relation to this the structural capital in universities context was emphasis by (Todericiu & Stanit, 2016) according to him structural capital is knowledge integrated into the structure, processes and institutional culture/ professional and comprises relationships inside and beyond the university.

In the past research various studies had interpret structural capital relationship in enhancing institutional performance for instance a study conducted by according to the study of (Pulungan et al., 2017) stated that a strong structural capital of an institution can help organizations in enhancing performance the results of his study revealed that the structural capital had a positive significant relationship between higher education institutions. In the same line a study was conducted by (Fivi et al., 2018) explored the role of structural capital in higher education institutions performance, and the results from the study explained that there was a significant relationship between SC and HEIs performance. A similar type of study conducted by (Matos et al., 2020) interpret that structural capital was the major contributor in enhancing the educational institutions performance. The structure capital of an institutions plays a vital role because without an organized structure organization cannot expand and perform therefore according to the study of (Shehzad et al., 2014) also provided evidence that an organizational structural capital is most important in enhancing its performance, the results of his study also revealed the same that structural capital relationship had a positive significant relationship with the performance of higher education institutions. According to the study of (Kousar et al., 2019) also empirically tested that the relationship of structural capital with university performance had a significant positive relationship.

Based on past studies it is conclude that the structural capital helps the higher education institutions in enhancing their performance although there were few studies that shows negative and insignificant relationships between structural capital and higher education institutions but most of the studies in literature showed positive relationship between structural capital and HEI's (Fivi et al., 2018).

### **Relational capital and University Performance**

Relational capital refers to third important dimension of intellectual capital that benefits the organization's relationships with its customers, suppliers, partners, and other stakeholders. It is the capital created through the establishment, maintenance, development, and investment of relationships between businesses and their stakeholders in order to achieve their objectives (Edvinsson & Sullivan, 1996). The integration and links within and outside the organization is usually known as organizational relational capital (Shehzad et al., 2014). Relational capital concept according to (Canibano, 2002) is defined in terms of "all resources

... tied to the firm's external relationships, such as customers, suppliers, or R&D partners." Image, customer loyalty, customer happiness, relationships with suppliers, commercial power, negotiating capacity with financial institutions, environmental actions, and so on are examples of this group."

In the context of universities, according to (Leitner, 2004) relational capital refers to the activities and partnerships between universities and non-academic partners, such as businesses, non-profit organisations, governmental agencies, local governments, and society in general. Higher education linkage with industry had seen very critical in evaluating the interaction between research and external actors, as well as the primary indicator of the level of relational capital (Feng et al., 2012).

Various studies from the past that had been shown that relational capital had a positive impact on organizational performance, a study conducted by (Pulungan et al., 2017) investigated that relational capital as third component intellectual capital was equally important in enhancing institutional performance, and the results from the study also gave empirical evidence that the relationship between relational capital and higher education institutions had a significant relationship. Similarly a study was conducted in Colombia by (Cricelli et al., 2018) also revealed that relational capital was an important component of intellectual capital which had significant but less influential relationship between higher education institutions performance. Similarly, according to (Mumtaz et al., 2014) investigated that relational capital helps the institutions as a competitive advantage in enhancing their performance, institutional external and internal strong relationships helps stake holders for future opportunities and the results revealed of this study that relational capital had a positive relationship between higher education institutions.

In conclusion to relational capital relationship with higher education institutions performance, all the assets associated to the organization's outer associates, such as clients (students), suppliers (teachers), research and development partners, the government, and so on, are referred to as relational capital (Sánchez & Paloma, 2006). In line with relationship of relational capital between higher education institutions (Chatterji et al., 2017) suggested that universities need to close relationship with government intuitions to enhance their relational capital.

#### **Following are the Hypothesis Developed on the Basis of Past Research**

H1a: There is positive relationship between intellectual capital and private universities performance of Pakistan

H1b: There is positive relationship between human capital and private universities performance of Pakistan

H1c: There is positive relationship between structural capital and private universities performance of Pakistan.

H1d: There is positive relationship between relational capital and private universities of Pakistan.

#### **Innovation as Mediator between Intellectual Capital and University Performance**

The central functions of HEIs, notably research and teaching, where innovation is most visible and represent knowledge dissemination and knowledge production respectively (Elrehail et al., 2018). The importance of innovation is most powerful source in the successive performance of institutions and helps them in gaining competitive advantage, therefore the relationship of innovation with institutions performance is a key prominent determinant



(Hwang et al., 2020). Innovation is as an ability of higher education institutions that develop new ideas, for instance modern teaching methodologies and academic programs, research projects which is usually know as innovative product and process (Saeed et al., 2020). Prior research on the determinants of innovation in higher education institutions has mostly focused on these two primary characteristics of innovation. Although these two dimensions of innovation have been linked to higher education institutions' improved organisational success (Rehman & Iqbal, 2020).

Therefore, to stay in dynamic and complicated educational environment, HEIs must consider on innovation while launching new academic programs, teaching methods, and research projects (Bhatti et al., 2021). The importance of higher education institutions in developing knowledge-based economies through innovation is mostly determined by the knowledge quality and speed with which it is developed and shared. As a result, when developing an innovation plan, HEIs must also consider two crucial qualities of innovation: speed and quality (Iqbal, 2021).

Higher education institutions are knowledge intensive institutions and typically involved in intangible resources such as intellectual capital to enhance its performance (Shehzad et al., 2014). The importance of intellectual capital with performance had widely discussed in previous studies and had evident that intellectual capital had a strong impact on performance and also consider as a prominent factor in attaining competitive advantage (Kousar et al., 2019).

Whereas the mediating role of innovation between intellectual capital and institutions performance effects the institutions performance, whereas innovation depends on intangible resources such as employees skills, experience, and knowledge that embedded in and used by its employee (Wang et al., 2018). Arguably, the employees can effectively work with each other for rapidly developing new ideas, thereby speeding up the innovation process. In this sense, human capital accelerates innovation speed. Therefore, the link of human capital between innovation and its dimensions innovation speed and quality exists between human capital and performance of organization (Carbonell & Escudero, 2010).

Furthermore, the skilled and efficient employees communicate and interact in effective manner and helps the organization to transfer significant knowledge in a better way for the purpose of enhanced services and research and development. This type of efficient human capital facilitates organization to provide better and innovative inputs as a results of advanced innovation quality (Lahiri, 2010).

Structure capital promotes innovation by establishing a shared infrastructure for searching, retrieving, storing, transferring, analysing, and disseminating information within an organisation (Kianto et al., 2017). Structural capital will be more effective in maximizing the use of available resources to enhance innovation (speed and improve innovation quality), which will help institutions perform better. Therefore, both innovation speed and quality mediate the relationship between structural capital and organization performance (Tseng & Wu, 2007).

Additionally for the enhanced and satisfactory performance, organization should not only depend on its internal sources but also captured its external resources because it is an essential parameter to determine that innovation is a major source of organizational performance. Therefore, relational capital of an organization provides the platform to interact within and outside the organization (Chatterji et al., 2017). Moreover, such efforts can help with the development of new products, services, and work processes, as well as their quality, resulting in improved organizational performance. As a result, there

are pathways connecting relational capital to innovation, as well as organizational performance (Wang et al., 2021)

However, there are various studies that had been explored the direct relationship between intellectual capital and higher education institutions for instance (Awan, 2015; Chatterji et al., 2017; Mumtaz et al., 2014; Sharafi & Abbaspour, 2013; Shehzad et al., 2014) investigated the direct relation between intellectual capital and higher education institutions. Whereas the mediating role of innovation between intellectual capital and higher education institutions are under explored, however studies on mediating effect of innovation that had found from the previous literature showed that innovation significantly mediates intellectual capital and organizational performance, but these studies were from other sectors (Carbonell & Escudero, 2010).

### Following are the Hypothesis Developed on the basis of Past Research

Ha: Innovation mediates the relationship between intellectual capital and private universities performance of Pakistan

Hb: Innovation mediates the relationship between human capital and private universities performance

H3c: Innovation mediates the relationship between Structural capital and private universities performance

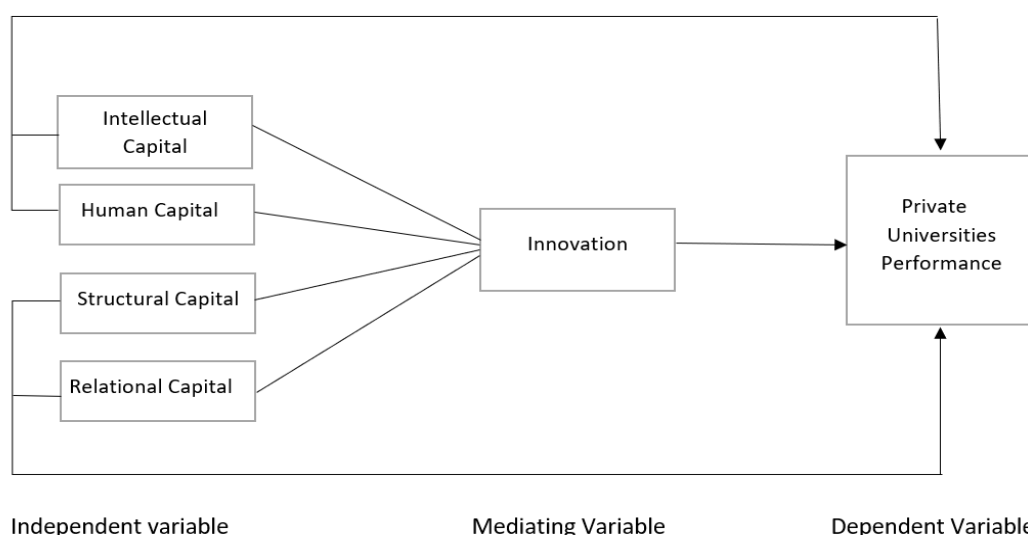
H2d: Innovation mediates the relationship between relational capital and private universities performance

### Conceptual Framework

Following conceptual framework is proposed for the current study based on literature review and past studies.

Figure 1

Conceptual Framework



A conceptual framework is derived from the past studies that justifies the importance and influence of intellectual capital in successive performance of higher education institutions, where innovation as a mediating variable also helps the institutions in enhancing their performance.

### **Methodology**

The current study conceptualizes the framework based on past studies and integrate three variables namely intellectual capital as (independent variable), innovation as (mediating variable) and private universities performance as (dependent variable). Based on the past research and literature review the framework of current study is designed based on the issue facing higher education institutions of Pakistan. The current study should follow the positivist paradigm and deductive approach to test the proposed hypothesis and answer the research questions. Primary data collection procedure will be used, and the unit of analysis should be at individual level organizations such as “universities”. Therefore, the target population for the current study would be full time faculty members of private universities operating in Pakistan. The data collection would be done through survey questionnaire, the nature of the data would be cross-sectional which will further analyzed through the latest version of smart PLS.

### **Discussion, Implications and Conclusion**

In discussion the current study highlights the important issue that are facing by higher education institutions operating in Pakistan and provide possible solutions in the form of intellectual capital and innovation to overcome the problem with enhanced performance. Universities are the hub of knowledge creation and most of its resources are intangibles therefore to improve the efficiency and effectiveness of institutions intellectual capital as intangibles resources can help in enhancing higher education institutions performance. There were various studies based on intellectual capital influence on higher education institutions had discussed in literature review, these studies provide the evidence that intellectual capital can provide competitive advantage in the successive performance of HEI's.

Similarly, the current study also points out the mediating role of innovation also helps the institutions in enhancing their performance. The use of innovation speed which is the rate of adoption of new teaching methodologies and new technology can effectively provide competitive advantage in enhancing performance. Similarly, innovation quality is the ability to implement new educational system which differentiate institutions from their competitors. The implication of current study will provide the important information and help the universities management about the importance of intellectual capital and innovation in enhancing universities performance. This study will also implicate that how effective intellectual capital and its three dimensions human capital, structural capital and relational capital helps the institutions in attaining competitive advantage. Furthermore, innovation as mediating variable in the form of speed and quality can leads the universities in the successive performance globally and provide competitive advantage to its competitors.

In conclusion to the current study the major finding from the literature explains that intellectual capital and its major three dimensions human capital, structural capital and relational capital provides a significant impact on higher education institutions performance. Each dimensions had a major impact in the performance, where the findings from the literature highlights that human capital is ranked as first contributor that helps the institutions in enhancing their performance similarly findings also explain structural capital ranked second and relational capital ranked third in the contribution of enhanced performance, where overall findings tell that intellectual capital is the major contributor in successive performance of institutions. In line with the findings from the literature review it also concluded that innovation as mediator also helps the higher education institutions in enhancing higher education institutions performance. It also escalates the performance of institutions in

between intellectual capital and higher education institutions. Therefore, it is concluded that intellectual capital and mediator innovation are the key indicators in the successive performance of higher education institutions.

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