The Nexus of Intellectual Capital with Performance in Higher Education Sector through Mediation of Sense making

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Abstract

This empirical study endeavors to contribute to the development of intellectual capital (IC) measurement model by using it to evaluate the intellectual capital development effort of public/private universities. The study adopts a multi-dimensional operationalization of IC. The model developed for this study also included sense making as a mediating variable. Data was collected from twenty (20) public/private universities faculty members, non-faculty members, students and top management. In addition to descriptive analysis, structural equation modelling was used to analyze the results. The results of the study indicate that intellectual capital has a positive impact on universities performance while weak mediating role of sense making was observed. Implications for business managers and practitioners and the limitations of the research are also discussed in the concluding sections.

Keywords: Intellectual capital, sense making,

Introduction

The 20th century herald the transformation of the global economy from which shifted its reliance on tangible economic drivers to knowledge driven intangible resource. This paradigm shift not only affected academics but also end users, regulators, investors, enterprises, and government (Sanchez & Elena, 2006, Dumay, 2009). Intellectual capital, within the context of knowledge driven economy is regarded as a key driver of value creation and economic wealth (Silvestri & Veltri, 2011; Martin et al, 2011; Ramirez & Gordillo, 2014) Thus, in knowledge driven world, for sustained competitive advantage of organizations is hinged upon the recognition of importance of intellectual capital and the adoption of its fundamentals, both of which are crucial in all sectors of the economy but especially so in universities (Tan et al. 2007; Sonnier et al. 2007).

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Universities or higher education institutes (HEIs) provide an ideal context for the application of ideas associated with the intellectual capital theory (Ramirez & Gordillo, 2014) because HEIs serve as change catalysts for the revival of the creative process and thought on the problems and issues of national interest (Higher Education Commission of Pakistan, MTDF, 2010-15).The challenge faced by mostHEIsis the effective management of their IC and the development of performance management systems to evaluate the performance of theirmost essential asset, their human resource (Secundo et al, 2015).HEIs play a significant rolein the development of countries, although most of them are faced with resource constraints (Altbach, 2008). There are now forceful voices emerging that a seeking to change the prevailing circumstances of HEIs. This growing pressure on HEIs to change has started to bare some fruit as there are reports of reputable HEIs moving toward systems that enable the measurement, management and reporting of IC (Ramirez, 2013).
Various studies are reporting that there is an emerging trend among HEIs to focus on their IC creation and development, due to the positive outcomes associated with such efforts (Leitner, 2004; Sanchez et al, 2009; Bratianue, 2009; Veltri et al, 2012; Wu et al, 2012; Ramirez & Gordillo, 2014, Secundo et al, 2015). For example, The European Association of Research Managers and Administrators launched an initiative of IC reporting HEIs (Leitner, 2005). In RICARDIS (reporting IC to augment research, development and innovation in SME,s) to make universities accountable to stakeholders for transparency and governance and resource management strategies (European commission, 2006). In 2002, the Austrian public universities that published separately mandatory IC report every year since 30thApril, 2007into Human Capital, Structural Capital and Relational Capital including output and input and impacts. (Austrian University Organization and Studies Act, 2002) in Poland, (Austrian University Organization and Studies Act, 2002) Presented IC report of Poznan university of Economics on the methodology of Danish Trade and Industry guidelines (2000). IC is presented in the form of resources activities and results.

In Korea, a nonprofit research organization of electronics and telecommunication Research Institute (ETRI) in 2001 developed an effective management tool and the establishment of knowledge management system. This organization publishes intellectual Capital report since 2004 (ETRI, 2005).The observatory of European universities (OEU)designed IC reports for universities and research centers which they called as ICU report for the improvement of transparency and homogenous publication of IC indicators (Sanchez et al, 2006). This proposed ICU report is based on the principle of logical movement from

internal strategy and management towards system of indicators. It comprises of three fundamental sections of institution vision, system of metrics and intangible resources and activities (OEU, 2006). Similarly in Britain, Research Excellence Framework (REF), the Performance Based Research Funding (PBRF) exercise in New Zealand and the Excellence in Research for Australia (ERA) are some of the initiatives undertaken by these countries to improve research performance in universities (Edger & Geare, 2013).

Universities in Pakistan

Universities in Pakistan are regulated by Higher Education Commission of Pakistan (HEC onwards). As per the latest HEC statistics there are 179 universities/degree awarding institutions (DAI), out of which 75 are privately operated while the remainder are public sector entities During 2004-2014 the total enrollment in Pakistan higher education sector increased from 0.4 million to 1.4 million while the universities increased from 110 to 163 during this period. According to HEC's estimates the higher education sector in Pakistan annually produces 445,000 universities graduates, out of which 10, 000 are computer science graduates (Higher Education annual report, 2013-15). The federal government through HEC spent 41.95 billion as a recurring grant distributed among public sector universities during 2002 to 2015 beside billions distributed for research and development but only seven Pakistani universities have made it on to the list of top 300 institutions as published by Times Higher Education's (THE) Asia University Rankings 2017 (the Nation newspaper, 18-03-2017). Although inclusion on this list is not a definitive measure of a university's performance, but as an indicator this statics is telling of the prevailing situation of the HEIs in Pakistan. This concern is shared hi policy makers, faculties, students and their parents, and the general public. This situation necessitates that public these HEIs conduct a critically analysis of their systems and procedures for the measurement and management of the utilization of their resources.

HEC annually compiles a ranking of the universities that fall under it purview with the objective to promote a culture of competitiveness among the universities. The criteria devised for this ranking takes into account that includes a review of the quality assurance procedures adopted by the HEIs, the quality of teaching, research, finance facilities, and social integration/community development (hec.gov.pk/ranking). This ranking provides a valuable resource for their various stakeholders. In order to improve their ranking, universities are required to promote a research culture and the efficient utilization of

resources. In this paper we will argue that HEIs need to go beyond the above started measures and institute IC management strategies for identification, evaluation, and measurement of their intangible assets.

The research on IC management and its evaluation is in its nascent stages. Very little of the body of literature on IC covers its dynamics' in the context of HEIs. There also a lack of quality exploratory studies that have analyzed the functioning of higher education sector in Pakistan. These facts make the pursuance of a study, such as ours, even more pertinent for understanding the importance of IC management and evaluation in the context of HEIs. In this regard our study will add to the literature of IC management and evaluation, and also its is our hope that our study will serve as a useful resource for the management of the more than 179 HEIs recognized by HEC. From the onset we would like to emphasize that the challenges faced by the HEIs are complex and differ from HEI to HEI, and the adoption of IC management policy is not a cure all but a step in the right direction to improve the functioning of these institutions which play a major role in shaping the economic future of any country.

Dimensions of Intellectual Capital

The extent literature on IC has established that IC has three main dimension: human, structural and relational capital (Bontis, 1998; Edvinsson and Malone, 1997; Roos and Roos, 1997; Stewart, 1997; Nahapiet and Ghoshal, 1998).This configuration of IC dimension has recently attracted criticism for its lack of covering most of the aspects of IC (Kianto et al., 2014; Hussinki et al, 2017). As a result various IC models and frameworks to measure IC measurement and reporting came into limelight (Dumay, Guthrie & Puntillo, 2015) but the extant IC literature demands continuous research on IC to explore latest measurement methods and frameworks to substantiate that why existing IC models empirically fail to deliver (Ramirez, 2010; Sillanpaa et al. 2010; Sereneko & Bontis, 2013, Yin, 2014). The prevailing IC frameworks are not able to comprehend the value creation of intellectual capital (Dumay &Cuganesan, 2011; Ayranci and Colakoglu, 2013) as the three dimensions of IC separately are insufficient to understand IC (Secundo et al, 2015), The organization performance is positively co related with the interaction of intellectual capital dimensions rather than physical assets (Alemu, 2017) therefore, it is a challenging task to identify, empirically test and recognize the IC models and frameworks (Dumay, Guthrie & Puntillo, 2015).

Human Capital

Human capital is regarded as a fundamental intellectual capital component and its foremost element in the process of value creation. Keeping in view its importance, it is designated as a brain inside the organization (Edvinsson, 2013) and a critical resource for a firm's financial performance (Reed et al, 2009). The term human capital was used by Smith (1776) that acquired the valuable abilities of the residents of country as part of capital but couldn't attract attraction among the researchers till 1960s.

According to Schultz (1961) on job the training, health facilities, services, study programs and formal education can enhance human capability which in turn yield positive rate of return. Later on, through human capital theory, Becker (1962) employs economic logic to investigate on the job training, health and education as human capital components to produce economic return.

With the emergence of human capital theory in economic literature, it has attracted interest in the field of management study (Snell and Dean, 1972) and accounting research (Flamholtz, 1974). Human capital is a key productivity determinant at the level of individual, organizational and national economy (Chen, 2012). The traditional sources of competitive success have become less important. Human capital is a key organizational differentiating determinant (Pfeffer, 1994). Though human capital is a key intellectual capital determinant and a significant resource, it can be viewed from the concept of resource-based view and knowledge-based view. According to resource-based view, sustained competitive advantage comes from the firm special resources that it controls (Chen, 2012), these resources are human capital resources, organizational capital resources and physical capital resources (Barney, 1991). Human capital resources, according to this definition comprise experience, education, relationships, intelligence, judgment and insights of firm workers and managers (Chen, 2012). Knowledge based theory is based on the work of Edith Penrose (1963) on internal resources of the firm where she discussed that business could aspire more productive activity until they had more knowledge of these resources. The realization and application of knowledge to resources is usually assisted by intellectual capital formalized as knowledge based theory

Structural Capital

The second important intellectual capital element is structural capital. In the extant literature, as compared to human capital, structural capital has recived relatively little attention (Ordonez de Pablos, 2004). Structural capital is regarded as a backbone of the organization (Mention and Bontis, 2013). It is the knowledge embodied in the structure of the company which supports employees' intellectual work (Solitander, 2011). Edvinsson and Malone (1997), through Skandia navigator, a market value scheme, suggested two component approaches to intellectual capital. They regarded human capital and structural capital as two important intellectual capital components. The structural capital was further divided into organizational capital and customer capital. Similarly, Sullivan (1999) identified three intellectual capital components i.e. human capital, intellectual assets and structural assets.

Structural capital is a the knowledge that resides in the organization when workforce leaves for home (Meritum, 2002; Roos et al. 1997). Structural capital is idiosyncratic and can included a firms data bases, systems, procedures, routines and processes, corporate culture, innovation and creativity (Mention and Bontis, 2013).Structural Capital as a knowledge is referred to as work procedures, organizational routines, data base, information system, organizational culture and software (Bontis and Sereneko, 2009; Edvinsson and Sullivan, 1996). Structural capital is regarded as the empowerment, embodiment and supportive human capital infrastructure (Mitchell, 2010). Structural capital has been defined by noted researchers as infrastructure (Brooking, 1999), internal structure (sveiby, 1997) and structural assets (Sullivan, 1999). The fourth component of structural capital was introduced by Brooking (1996) as intellectual property. In the present study structural capital is operationalized as comprises of actions and processes of an organization's efficiency, relevant information system, creativity idea, initiatives that sustain innovation, organization culture and supportive environment. In the context of universities, the structural capital comprises of the governance principles and modes, the organizational routines and procedures, culture systems, databases and intellectual property; (Leitner, 2004; Sánchez et al., 2009).

Relational Capital

Relational capital is a third dimension of intellectual capital. As the name suggests, relational capital of a company relies heavily on its external relationships (Solitander, 2011). These relationshipsshapean organization image in its market, this image can be asset or liability (sveiby, 1997) and the value of this image can be converted into intellectual property (Sveiby, 2001). Relational capital consists of an organization's relationship with its investors, customers, network partners, other stakeholders and suppliers (Marr et al. 2004; Swart, 2006). Relationship with competitors was added by Carson et al (2004) with a reason that numerous new ideas generate as a result of interaction with competitors that benefit both firm and the industry as a whole.

Relational capital comprises external resources like name of the company, its brands, distribution channels, supplier relations, customer relations, financial relations, alliances and partnerships (Boedker et al. 2005).

Relational capital are unique and rare external resources that are a function of tacit phenomena and socially complexity, (Srivastave et al. 1998) and are based on intangible factors such as reputation and trust (Chen, 2012).Proactive working relationships with external stakeholders are difficult to imitate (Srivastave et al., 2001). As a result, external relationship from the resource-based view is a valuable source of competitive advantage (Chen, 2012).

Spiritual Capital

Spirituality has been defined as a multifaceted construct that which represents the efforts of individuals to find a connection to something meaningful that goes beyond their normal lives (George et al. 2004; Petchsawan & Duchon 2012). Numerous authors have suggested that spirituality does exists and is expressed at the workplace (Giacalone and Jurkiewicz 2003; George et al. 2004) and have suggested that individuals who are spiritual tend to be more engaged in their work, in which they find a sense of purpose, this allows them to perform better at their assigned tasks. Long and Mills (2010) and Petchsawan & Duchon (2012) also report that spirituality exists both at individual and organizational level.

According to Long and Mills (2010) workplace spirituality seems to have a positive effect on organizational performance. Their views are seconded by Howard (2012) who argues that workplace spirituality can entail significant benefits for organizations. Numerous study have investigated the effect path of spirituality on organizational

performance. The results from these study point towards a positive effect of spirituality in reducing work related stress, enhancing problem solving ability, creativity (Tischler et. al, 2002)positive effect on job satisfaction (Harung et al. 1996) reward related satisfaction, job involvement and organization identification (Kolodinsky et al. 2008) positive impact on commitment, honesty and trust (Krishnakumar and Neck, 2002) and work performance (Duchon and Plowman, 2005; Petchsawan and Duchon, 2012)

Adam (2008) reported a positive correlation between motivation and prayers. Using meta-analysis technique Karakas (2009) concluded that workplace spirituality enhances organizational performance. Reporting on how spirituality affects organizational performance Karakas (2009) reported that spirituality impacts organizational performance by enhancing employee's quality of life and wellbeing; by providing a meaning to work and sense of purpose, and lastly spirituality prompts sense of community and inter connectedness. Petchsawan & Duchon, (2012) report that world leading organizations such as World Bank, Hewlett – Packard, DuPont, Ford Motor Company, AT&T and Apple Computer have designed programs to bring spirituality to the workplace.

The word spirituality includes a wide range of values and concepts such as sacredness, transcendence, meaning in life, altruism, living to the deepen connectedness to the universe that provides wisdom and energy that transcends the material aspect of life (Osman et al, 2013). In the resent past spiritual capital has been included as a component of Intellectual capital (Ismail, 2005). The literature defines spiritual capital as the power possessed by individuals or organization through their use of and manipulation of religious beliefs and spiritual knowledge (Liu, 2008). Similarly Berger and Hefinar (2003) are of the view that spiritual capital is derived from the spirit, knowledge and influence derived from religion. Khalique et al, (2015) proves that spiritual capital has significant and positive relationship with organization performance in the SMEs sector of Pakistan.

Based on the above review we also hypothesize that the various aspects of intellectual capital positively contribute to the organizational performance.

H1= Intellectual Capital (human, structural, relational &spiritual) has a positive impact on the performance of universities in Pakistan

Sense making

Sense making is a process in the organization that integrates the three intellectual capital components (Carrington, 2009). Sense making is the procedure of assigning meaning to a context, in order to understand it, through the use of knowledge stored in values, beliefs and experience and the application of this knowledge to prevailing situations (Weick, 1995). Thomas, Clarke and Gioia (1993) describe sense makingas an iterative process of seeking of information, taking action, and ascribing meaning.Weick (1995), on the other hand,regards sense making as a process of assigning meaning to organizational actions as a framework to assist people to explain, understand, extrapolate, predict and attribute events. He further explains that whenever a puzzling event or incomprehensible event occurred in the organization, the employee subconsciously interprets it and assigns meaning to make sense of it. According to Carrington (2009) this interpretation and explanation is a process done on the basis of employee background knowledge and experience context within the event occurred. This notion is maintained by Parry (2003) who contends that our assumptions, beliefs, interactions and stories bring orders to assist us to construct sense of our own reality. It is therefore regarded as the stock of human capital will play significant role in the process of Sense making (Carrington, 2009).

The study of Sense making as a multidimensional process was advanced by (Wieck, 1995) with the identification of seven disparate characteristics of Sense making. The process of creation of identity is the first characteristic of Sense making, the second characteristic is retrospective process through either an abstract construct or concrete action, third is the organization and individual enact the environment to confront or perceive action leading to change. Fourth characteristic is the social element on the basis of interaction between individuals while the fifth characteristic is that it is an ongoing process that never stops or ends. Sense making works as a filter to make sense about the environment is the sixth characteristic while plausibility rather than accuracy of actions and beliefs are the main drivers.

H2=Sense making mediates the relation between university's intellectual capabilities and its performance.

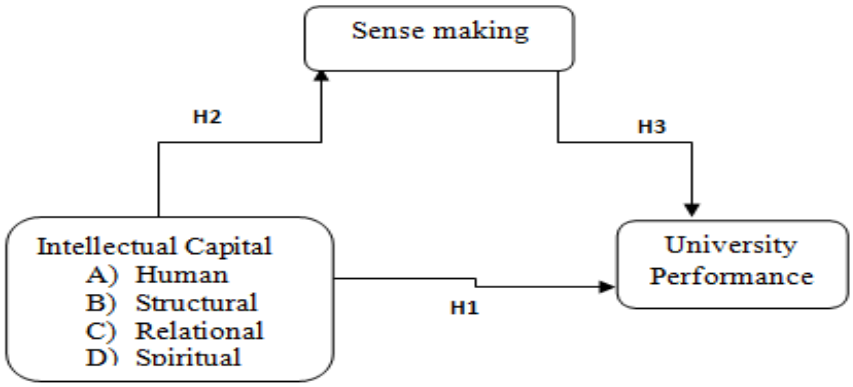
University Performance

There is immense pressure on public sector organizations to enhance the services quality, efficiency and effectiveness in the utilization of resources in the new public management reform. Since then Universities as a representation of public organization have experienced great changes. The concepts of managerialism and entrepreneurship have

recently been applied to university management. In recent years, the recognition of university as a corporate actor has gained considerable importance (Deboer et al, 2007). The government desire of public institutions to be self-sufficiency and accountable to stake holders with respect to performance and service delivery have forced the university management to take more control on the efficient utilization and management of its resources. Therefore, the efficient utilization and proper management of the university resources rely most on the performance management of the university.

Performance management is a process of quantifying the efficiency and effectiveness of actions (Neely et al, 1995) that help the managers to keep the record of organizational activities and effective management control mechanism (Wang, 2010). In a recent past, considerable interest has been noted in the performance measurement of higher education sector (Broadbent, 2007; Ruben, 1999). Such as balance score card and dashboard but there is a limited number of performance management frameworks developed for the public sector (Wang, 2010).Most of the performance management frameworks are usually originated from the private sector where profit is the main yardstick however, due to risks involvement they are unable to grab the complexities of Universities affairs/services. The universities goals are usually ambiguous like the contribution towards society, knowledge transformation, social impact and world class research and education etc. the identification of critical performance areas related to the ambiguous goals of universities are a highly difficult task that needs to be measured (Wang, 2010).

Research Model



Methodology

Sample & Questionnaire

This study is deductive in approach. The survey questionnaire method was used to collect the primary data from the employees working in different universities of the twin cities of Rawalpindi and Islamabad, using self-administered questionnaire. A thorough literature review was made to find empirically validated measurement scales. To confirm psychometric robustness and operational validity of the scales, the survey was pretested with the samples through statistical analysis. For pilot testing and to assess the scale content validity of scale, a panel of experts in the subject area was consulted and modified the scale according to their suggestions for future development. Accordingly, the feedback was incorporated in the final version of survey. A total of 98 items were finalized before submission for data. A total of 512 questionnaires were sent through email, personal visit and reference to the teaching faculty members, and non-teaching staff of 20 universities (public/private) of Rawalpindi and Islamabad, Pakistan. The filled questionnaire was received after reminders. 361 filled questionnaires with a response rate of 71% were received. After scrutiny, 6 questionnaires were rejected. The data was collected from the participants at one point in time.

Measures

The scales utilized for data collection were adapted from previous research studies. Thehuman capital (HC) were adapted from Mention & Bontis, (2013) Ramirez and Gordillo, (2014), Structural Capital & Relational Capital from Ramirez and Gordillo, 2014 Spiritual Capital from (Zohar & Marshall, 2004; Ismail, 2005; Gillett, 2002) and University Performance from(Wang, X, 2010).To control common method bias, Harman's one factors test (Podsakaff et al, 2003) was conducted for risk assessment of biasness. All the items of the construct were included in the principal component analysis with the largest factor of variance of 30 percent which shows that common method bias is not a major concern in this study.

To test the measurement models confirmatory factor analysis (CFA) was used. 350 cases were processed through LISREL 8.5 showing that all the items loadings were statistically significant. The construct validity were noted more than 0.70, the values below this level were removed. The Cronbach alphas remained as .85. While the reliability tests ranges between 0.59 to 8.00 (Evrard*et al.,* 2003). These result portrays that questionnaire is highly reliable for data collection.

Demographic details

Age. 45% of the respondents belong to the age group of 30-35. While the age group of below 30 years comprises of 25%, followed by above 35 years with a percentage of 20%.

Gender. 77% of the respondents were male while 23% respondents were female.

Education. Majority of the respondents were having Master qualification with a percentage of 86%.

Experience. The majority of the respondents were having experience of above 19 Years with a percentage of 42% followed by 36% of below 5 years.

Demographic Variables		Frequency	% Total Sample	Mean/ Mode	S.D
Age	Below 30	85	25 %	2.03	0.699
	30-35	193	45 %		
	Above 35	72	20 %		
Gender	Male	270	77%	1.12	0.299
	Female	80	23%		
Education	Masters	301	86%	1.12	0.312
	MPhil	46	13%		
	PhD	3	1%		
Experience	Upto 5 years	126	36 %	2.06	0.945
	5-10 Years	77	22%		
	Above 10 Years	147	42%		

Hypotheses Testing

This study intends to assess the importance of intellectual capital on the performance of higher education sector/Universities of Islamabad and Rawalpindi Pakistan. The intellectual capital comprises of four dimensions (Human, Structural, Relational and Spiritual Capital) were undertaken through a series of regression analysis to test the study hypothesis by using SPSS version 21. The results portray that intellectual capital have positive impact of the work performance of higher education institutions of Pakistan. The results conclude that R square value remained as .51, confirming that 52% change in universities performance is due to intellectual capital of human, structural, relational and spiritual type.

Mediation Results

The relationship between intellectual capital and university performance was mediated by sense making. The standardized regression coefficient between intellectual capital and sense making was moderate statistically

significant as was the standardized regression coefficient between sense making and university performance by using bootstrapping procedures. Thus Minimum mediation has been observed.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792[a]	.612	.516	.7612

a. Predictors: (Constant), INTELLECTUAL

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	ι		
(Constant)	1.221	.173		5.412	.000
INTELLECTUAL	.781	.055	.612	18.236	.000

a. Dependent Variable: INCBP

Discussion

This study shed a light on useful deliberation of intellectual capital literature. The extension of spiritual capital as a fourth dimension is a vital step towards the extension of intellectual capital dimension and its implementation in the context of Pakistan higher education sector. As knowledge is a main input and output of higher education sector, its importance cannot be ignored to enhance the performance of this sector (Secundo et al, 2016).Secondly, beside its extension, in the context of education sector reforms, the recognition of intellectual capital with in the sphere of performance is highly beneficial for the ongoing and futuristic reforms and to bring competitive environment for the universities in Pakistan. The importance of human capital with in the other dimensions are quite high that elucidate that proper attention may be given for its recognition As Secundo et al (2016) proved that human capital is a main element of intellectual capital that enhance the performance of university knowledge transfer. While Vidotto et al, (2017) while devising measurement scale of human capital validates that human capital is a main ingredient of intellectual capital that is crucial for organization performance. Beside human capital, structural capital has also proved to have a considerable impact in the measurement of intellectual capital. While, relational capital has a least impact in respect of other dimensions of intellectual capital. The results of the Spiritual

capital in the higher education sector are in consistence with the results of Khalique et al (2013) in the context of Pakistani environment. These results provided an insight to the management of the Higher Education sector decision makers to enhance their performance. Similarly, with in the ambit of knowledge management, the recognition and importance of human capital disclosure emerged as a main ingredient that boosts up the performance of the organizations. If proper attention along with specialized focus in synchronicity with other dimensions of intellectual capital is targeted that may have a long lasting impact on its performance.

Conclusion

The results of this study extend the previous research that human capital accumulation relates highly on the usage of human capital applied. Out of 27 universities operating in public and private sector in Islamabad and Rawalpindi, The data from 20 (public/private) universities through survey questionnaire method was obtained. The results portrays that intellectual capital has a positive role in the performance of Universities, similarly, moderate mediation of sense making has been found in the relationship of intellectual capital dimensions with the performance of these universities. Spiritual capital as a fourth dimension has been introduced in this relationship that substantiate that spiritually do have a role as a dimension of intellectual capital in the performance of universities.

Management Implications

This study highlight the multidimensionality and managerial aspect and diversified nature of intellectual capital and its ignorance in the performance aspect in the higher education sector. The authors made an effort to recognize the importance of intellectual capital with the integration of few dimensions of intellectual capital in line with the third stage of intellectual capital research. The findings of this study add to the literature of intellectual capital research by finding a gap that investment in hidden assets is crucial for the success of an organization especially in work experience, manpower knowledge, skills and abilities in the performance aspect of an organization. The universities administration is suggested to invest more and more in human capital to get desired performance results.

Limitations of the Study

Following are the limitations of this study,The data from self-reported questionnaires are challenging and dependent on single point. The data

obtained from the questionnaires are related to only universities operating in Rawalpindi, Islamabad; it cannot be generalizable to the whole of the country. The single respondent biasness was not detected in this study However, the future studies might gathered more objective assessment of the intellectual capital performance relationship. Though, the spiritual dimension of intellectual capital do has an impact on the performance aspect, the future studies may try some other soft hidden aspect like emotionality as a dimension of intellectual capital and retry/compare the results accordingly.

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