

IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGIES ON ORGANIZATIONAL PERFORMANCE MEDIATED BY ORGANIZATIONAL COMMITMENT

Irfan Abbas *¹, Arfan Ali²

National Business School, The University of Faisalabad, Punjab, Pakistan

^{*1}phdm-fa20-016@tuf.edu.pk; ²asst.prof.nbs.516@tuf.edu.pk / arfan_ali64@yahoo.com

Corresponding Author: *1

Received: 08 July, 2023 Revised: 23 August, 2023 Accepted: 05 September, 2023 Published: 30 September, 2023

ABSTRACT

This study looks at the impact of data and correspondence innovation that affects research organizational performance through via mediating role of organizational commitment having a supportive role by knowledge based view theory . Data correspondence innovation gives specific strategies to assist the employees with getting their ideal objectives in time and to prompts organizational performance. To get research results quantitative technique is applied. Information is gathered from Pakistan higher education institutes from 540 employees of various academic levels. Information that is gathered from respondents investigated by using data measuring instruments smart PLS SEM primary condition demonstrating (SEM). Data is analyzed by using statistical tools Smart PLS structural equation modeling (SEM). Our research studies show a positive influence of information communication technology on organizational performance mediated by organizational commitment. This research studies provides guidelines to managers and all level employees that how they can increase their organizational performance level in Higher education institutions (HEIs) by using ICT and organizational commitment. The research study will help to the backbone of country that are considered as educational institutes, that are the key elements to produce technical and non-technical manpower of any country and helps to produce all kinds of employees that work in different organizations

Keywords: Information and communication technology, Organizational performance, Organizational commitment.

INTRODUCTION

Higher education organizations (HEIs) support a country's by expanding the degree of financial turn of events and it upgrades the general public by developing through data of information and communication technology (ICT), By the utilization of successful (ICT) HEIs increment employees 'responsibilities that further develop execution (Naqshbandi and Jasimuddin, 2018; Sahibzada, Jianfeng, Latif, and Sahibzada, 2020). Experts and researchers have of late started to focus closer on the education area (Rehman and Iqbal 2020) In any case, this area of examination is more imperative and significant in the ongoing circumstance, there stay observable gaps in the

research writing that need consideration regarding be filled. There is a growing need in the present circumstances for more focus on cost of administration as well as a requirement for better yields in organizations. Considering that ICT plays a vital role in the organizations, the utilization of ICT to get an organizational benefits has drawn in gigantic interest inside organization in a rapidly globalizing climate. Scarcely any researchers recommend that ICT includes a range of electrical items, both computerized and simple. These things might incorporate radio, TV, fixed and cell phones, PCs, electronic message and sound video web based, and the Internet, however no

electronic innovations are excluded. This study assists with finding effect of ICT in new firms, that how data and correspondence innovation are fundamental for development and improvement of an organization and is useful to accomplish its ideal objectives. The utilization of new computerized advancements helps the assembling and creation industry to be more skillful in openly trading and it is helpful to get desired goals . Conversely, manufacturers set out enormous open doors for development and change to deal with the modern creation processes (Alzoubi, Vij, Vij, and Hanaysha, 2021; Hanaysha et al., 2021; Advanced education organizations (HEIs) are continually investigated for the nature of their item. HEIs are under a great deal of tension right now to bring worth and significance particularly in the information the executives and it is just conceivable by using best utilization of ICT. This must be achieved by putting a more notable attention on employeess and staff participation to offer better support (Sahibzada et al., 2020d).

The 21st century will keep on showing tremendous changes in the field of ICT (Hride et al., 2021). expanding progress in present day Considering innovation use, ICT applications and correspondence sciences, and the increasing interest in data frameworks that prompted an enormous utilization of computerized transformation in business organization capabilities (Alshurideh et al., 2019; Ahmad et al., 2021; Al Kurdi et al., 2021; Hamouche, 2021). No doubt there are many possible advantages and purposes of ICT in this cutting edge business age which frequently happens through intra firm geographic portability (Choudhury, 2019), а restricted exploration has analyzed the impact of ICT on organizational performance. Keeping committed employees in the different labor force is a significant issue for the present organizations as they stand up to expanded worldwide seriousness and the requirement for considerably a greater amount of them. There are various factors that influence an organization exhibition, yet this study shows that serious employees has a significant impact (Nelson and McCann, 2018). In the new employees committed period, the utilization ICT current devices and methods specialists have tried to delineate the immediate connection among responsibility and productivity inside a business and noncommercial venture and how can be advanced responsibility. Research concentrates on shows that cutting edge ICT devices assist employees with working all the more helpfully and effectively so it builds their degree of responsibility and almost certainly Dedicated employees is the way to organizational performance and most of organizations has fruitful outputs because of this, yet these variables are not investigated as a mediating or directing element (Cortada, 2019).

For example, Kianto et al. (2018) portrayed that disregarding the significance of committed employeess. Many emerging nations' public areas, similar to Pakistan's, have created positions in to resolve the issues of low organizational performance because of less dedicated employeess. To make matters more convoluted, chiefs of higher-gifted staff should keep unexpected guidelines in comparison to directors of lower-level employeess. It is truly challenging to select and hold profoundly gifted people as a result of the deficiency and fluctuating administration needs.

The advanced part of learning in advanced education organizations has made an undeniable requirement for rules that help new and proceeding with online educators that how best to show in the web-based climate (Martin, Budhrani, Kumar, and Ritzhaupt, 2019). Since last beyond three periods, different examination studies have been directed to show connection between ICT use and its effect on organizational performance in the organization ICT assists with starting corporate business to add to their assortment of information for expanded incomes and benefits (McGrath et al, 1994), further developed productivity by expanding the result (Zahra, 1993), for upgraded reasonableness (Kuratko et al, 2009), and for supporting inventiveness (Ferreira, J.J.M., et al, 2015). Many authors in their research studies concentrates on that have tended to the elements that upgrade the organizations yield level in least range of time and by utilizing lesser sum natural substance and other various assets that decide the presentation and result of organization and undeniable level firms yield is connected with utilization of ICT (Małkowska and Uhruska, 2022)

Research Questions:

"Main objectives of study are to analyze impact of Information and communication technology, and mediating role of organizational commitment on organizational performance more precisely.

- RQ1. Is ICT positively impacted on OP?
- RQ2. Does OC have an effect on OP?
- RQ3. In which sense does OC mediate the Relationship between ICT and OP?

Development of Hypotheses and Literature Review:

Knowledge based view theory

According to Penrose (1959), organizations are composed of diversely dispersed resources that come together to form a single business. Internal organizational resources determine how much and in what direction the company will grow. In order to increase competitiveness, Barney (2002) said that a firm's internal resources should be scarce and challenging for other companies to copy.

Further highlighting causal uncertainty and social complexity as strategic resources is the resource-based viewpoint. Causal uncertainty develops when unclear circumstances increase the possibility that alternative interpretations of the circumstances may provide unique and specialized understandings and knowledge (Grant, 1996). The degree to which resources are embedded in, and connections between various organizational members, is referred to as social complexity (Reus-Smit, 2004, p. 27). As a result, knowledge drives organizational output that depends critically on how understandings and information are ingrained in social connections. In light of this, a company's knowledge capacity aids in increasing efficiency, especially when organizational knowledge capacity unlocks tacit information stored in employee interactions (Darroch, 2005).

Impact of Information and communication technology on Organizational Performance:

Although many examinations have focused on and worked the connection between culture, construction, data and correspondence innovation, and organizational commitment, the impact of ICT on these connections remains generally neglected.

ICT role in most of research studies remained neglected in both the corporate organization and administrations area. The earliest far reaching use of PCs in business traces all the way back to the mid 1900s, when they were fundamentally and basically utilized as apparatuses for recording and handling book keeping information and exchanges. ICT has as of late turned into a critical part of business and education area generally over the most recent 24 years. Nonetheless, quite possibly of the main asset in the present education sector is the research innovation.

Entering the twenty first century organization are spending to an ever increasing extent, understanding the extraordinary benefit of ICT data correspondence innovation (ICT), and are putting vigorously in ICT (Chi and Sun, 2015) ICT has positive and emphatically affects the organizational performance i.e university brand execution (Chaudhary, Muhammad Amir; Chaudhary, Naveed Iqbal; Ali, Alina Zulfiqar (2020).

These outcomes are additionally lined up with ideas of King and Wong (2019), Alwi et al. (2019), and Hashim et al. (2020) they upheld that positive commitment of under study's fulfillment towards the brand of the university and education institutes .

Brand is attitude of individuals about any item so brand improvement is the main figure in universities and education institutes in this modern era. It implies in Pakistan education institutes ought to take on legitimate techniques for ICT for the progression of their tasks and

instructive exercises through web-based stages and to keep up with their image execution on the lookout (Arshad, 2020; Javaid et al., 2020). Use of ICT and CSR brings to organization by the utilization of ICT, through expanded business notoriety (Berthelot et al., 2012; Cho et al., 2012; Dobele et al., 2014; Rodriguez et al., 2013), employees inspiration in the business firms (Santos-Jaén et al., 2021), the endure of its items and administrations in the market at every one of the times either these are fortunate or unfortunate i.e in Coronavirus a large portion of the organizations that don't have the similarity of purpose of ICT couldn't make due on the lookout (Nyeadi et al., 2018; Schaltegger et al., 2012; Szekely and Strebel, 2013), and expanded market strength when contrasted with the contenders of the organizations (Valls Martínez et al., 2022 Valls Martínez and Martín Cer-vantes, 2021.

Hypothesis:1 Information and communication technology positive impact on organization performance

Impact of organizational Commitment on Organizational Performance:

Organizational commitment is the main element of an organization that cannot be neglected by organizations in order to produce good results of their organizations in the form of better performance of its employees. So it may be defined as a view of an organization's employees mental thoughts towards his/her attachment to the organization that he/she is working for. The aspect utilized in this study was to quantify organizational commitment utilizing the aspects from Hirschi and Spurk (2021) which could be portrayed as follows; full of feeling responsibility of employees to as profound connection of any employees to the organization, ID with the organization, and contribution in the organization. An individual's full of feeling responsibility increments and becomes more grounded in the event that his involvement with an organization was steady with assumptions and fulfilled his requirements.

In period needs versatile HR in their organization who can work for any reason and can embrace challengeable workplace to achieve organization objectives (Kharisma et al., 2019). It empowers employees's connection with the organization's targets and objectives and having the readiness to keep up with their participation inside the organization. Basically, organizational commitment includes employeess showing areas of strength for an and to buckle down for organization and to put forth best attempts for its prosperity (Kuswati, 2018). Employees execution in any organization fundamentally influences the productivity and improvement of an organization, as committed employeess are essential support points to movements of every kind inside the organization. Execution of employeess is a critical to calculate deciding organization efficiency and execution (Putra et al., 2019).

Every single employees in any organization should have serious areas of strength for a to his local organization and to accomplish the organization's main goal, vision, and objectives. Organizational commitment of all employeess in an organization is a pertinent idea for dissecting upgrades in employees execution that thus further develops the organization execution (Kawiana, 2018), employeess' responsibility is characterized as employees mental connection to their organization (Cesário and Chambel, 2017). Organizational commitment is drawn nearer according to a conduct viewpoint, seeing responsibility as a steady example of conduct. It is fundamental for organization to acquire and support further developed employees execution to accomplish organization essential targets i.e hierarchical mission, vision, and benefits, to acquire an upper hand, and achieve a reasonable development in the organization (Muardi et al., 2022). Employees of any organization have a hierarchical personality and show a serious hard working attitude, work reliability, and an uplifting perspective towards their organization.

These employees are known to show ways of behaving that add to the organization's objective accomplishment and show a drawn out obligation to the organization, affirming the connection between organizational commitment and execution (Data et al., 2021). Furthermore, organizational commitment might upgrade information sharing by working on people's view of their organization (Hariyanto et al., 2021). Employees execution influences upto greatest degree on the organization in all regards w.r.t benefit, advancement, improvement and maintainability on the lookout. As firms realize that functioning employees are key to movements of every kind that are occurring in an organization inside the organization.

Execution is a critical consider deciding organization efficiency and benefit (Putra et al., 2019). Thus, it is fundamental for organization to accomplish and keep up with employees's improvement in their organizations to accomplish strength and flourishing in their organization. Serious employees produce a productive presentation to satisfy essential targets of the organization, and to acquire an upper hand, and guarantee reasonable development (Muardi et al., 2022). To assess declining employees execution is significant that necessities to distinguish the regions in an organization that should be worked on, for improving organizational commitment. example, cultivating a positive work culture, focusing on. Influential responsibility mirrors employeess' powerful urge to contribute and make penances for the organization. Serious employeess exhibit a more significant level of responsibility, commitment, and are bound to convey more significant levels of execution (Cesário and Chambel, 2017).

Moreover, organizational commitment of employees in an organization is viewed as a basic indicator of hierarchical viability and execution and a solid driver of individual work accomplishment and superior execution, as per this review. Kawiana (2018) featured the significance of committed employees in an organization and its employeess, as well as among employeess and the organization, in establishing an expert work environment." Organizational commitment of employees in an organization is seen according to a conduct point of view, while responsibility is characterized as a reliable example of conduct. In this way, higher the employees responsibility for an organization can further develop employee's execution essentially (Kawiana, 2018). Thus, higher responsibility of employeess to one's obligations prompts expanded employees execution and better execution assessments (Gultom et al., 2018).Number of studies are finished to know the degree of responsibility of employeess for their organization and to know results on the organization have laid out a positive and critical connection between organizational commitment and execution. More elevated levels of organizational commitment of employees demonstrate a more prominent exertion by employees and their readiness to satisfy settled upon objectives of the organization that should be satisfied by the functioning employeess. Taurisa and Ratnawati (2012) likewise displayed in his exploration concentrates on that there is a connection between organizational commitment and employees execution.

As per De las Heras-Rosas et al. (2021) that organizational commitment of employees in an organization enormously affect organizational execution by giving chances to its individuals to get and handle additional difficult tasks, more prominent independence, adaptability to work, more prominent degrees of extraneous lopsidedness, and chances to get a higher advancement in the organization. Hierarchical responsibility, as per Jang et al., (2021), is a soul and inner will that should stay for faculty to have the option to make the organization far superior later on. All assertions and feelings about Organizational commitment above are hierarchical responsibilities of employeess that should be developed by the initiative of the organization to observe the guidelines that have been set for a superior accomplishment of organizational execution. As per K. Singh and Misra (2021), organizational execution shows the manner in which an organization exploits unmistakable and immaterial assets i.e gear's labor apparatus to accomplish objectives and the summit of hierarchical work cycles and exercises.

As indicated by Hasani and O'Reilly (2021), hierarchical execution is characterized as connected with organizational objectives and goals, which expresses that organizational presentation is the genuine outcome or result of an organization that is estimated against yield.

As indicated by W. Wang et al. (2020) states that employeess a high hierarchical in an organization responsibility and contribution with the parent organization will deliberately and enthusiastically give most extreme endeavors to the advancement of the organization. A similar idea was likewise communicated and made sense of by Herrera and De Las Heras-Rosas (2021), it was expressed that there is a positive connection organizational between commitment and the organizational exhibition wanted by the organization. As indicated by Hasan et al, as a matter of fact. (2021), employeess who are focused on the organization can possibly further develop their presentation exclusively, in gatherings, subgroups and in general execution of the organization. Subsequently, the impact of organizational commitment foundationally affects all parts substantial and elusive assets of the organization so it can possibly duplicate the accomplishments or execution of the organization. Research directed by S. Endang and S.Dyah (2022), where examination shows that the impact of pioneering administration and hierarchical learning on the a employees obligation to an organization, their dedication to their positions, their obligation to themselves, their obligation to their colleagues, their obligation to their clients, and so forth. The term organizational commitment will be utilized as an equivalent for employees responsibility in this paper as the journalists examinations it. It empowers employees connection with the organization's targets and objectives and having the readiness to keep up with their organization. participation inside the Basically, organizational commitment includes employees showing areas of strength for an and to buckle down for organization and to put forth best attempts for its prosperity (Kuswati, 2018).

Employees execution in any organization fundamentally influences the productivity and improvement of an organization, as committed employees are essential support points to movements of every kind inside the organization. Execution of employeess is a critical calculate deciding organization efficiency and execution (Putra et al., 2019). Serious employees of an organization are people that have a feeling of hierarchical character, work excitedly, show a feeling of unwaveringness, and has an uplifting outlook toward their organization execution (Soomro, 2019). Employees with higher degrees of organizational commitment is essential for an organization development and success. Such an organizational responsibility empowers employees to stay committed with the organization and improve the nature of administrations and results of the organization they convey, and eventually upgrade the hierarchical better presentation (Briggs et al., 2022; Mahalingam and Suresh, 2018).

Hypothesis: 1 Organizational commitment has positive impact on organization performance

Mediation of OC:

Organizational commitment is necessary for organizational performance and that is linked to organizational ICT that is key tool in modern organizations that makes it possible. Since due to advent of digital information and communication system, particularly those organizations that are operating cloud computing-based services in their firms, have shown numerous changes to a number of sectors of humans and in number of business sectors i.e economic, finance, management. This phenomenon of use of digitalization has remained in force in the all sectors of life and organizations for the past two centuries. Industrial growth as compared to organizations not using digitalization's proves to this phenomenon is the transformation of human resource practices. Accepting the digital information management systems in organizations has made possible organizations to effectively manage their strategic ideas and to implement these at right time and it leads towards the realization of stated mission and visions of the organizations (Berber, Đorđević & Milanović, 2018).

There are various aspects and angles of this theory but four important factors are logical motivation, stimulating inspiration of employees, ideal effect of employee relations, distinct deliberation. They all are in origin connected to each other (Tseng and Kang 2008). Organizational commitment is getting more and more importance in modern organizational settings where organizations are performing in global village. The concept of organizational commitment has deep roots since 30 years (Putterill & Rohrer, 1995).. There various aspects and outputs of organizational commitment that it curtails major issues of organization i.e absenteeism and turnover rate in an organization (Jernigan, Beggs & Kohut, 2002). Moreover, this maximum realization of organizational competence and efficiency may not be sufficiently achieved in the absence of sound organizational commitment of employees of any profitable or nonprofitable organizations, hence the employee's psychological affection to the organization. The concept of organizational commitment revealed through employee efforts and their desire and will for accomplishment is pushed instrumental in realizing organizational efficiency and performance (Gatignon & Xuereb, 1997; Khin & Ho, 2019)The most challenging task for an organization is the approximation of the level of commitment amongst their workers and to find out means to uplift the commitment level of the employees that in turn increase the firm out put level in the form of better performance of its employees (Liu, 2006). An employee with the zeal of his commitment contributes remarkably to the performance of the organization (Freund & Carmeli, 2003).

The task of the employee retention can be achieved through organizational commitment that enhance the performance organizational (Stallworth. 2004). Castellano et al. (2021), defined and explained the organizational commitment according to higher education organization as "Organizational Commitments the degree to which lecturer believe in and accept organizational goals and to do efforts to achieve and desire to remain with the organization".willremain or will not leave the organization). Ivens et al. (2016) state work and organizational commitment as another term for organizational According commitment. to him organization a commitment is an important behavioral dimension of the employees that can be used to assess the tendency of lecturer to remain as members of the organization.

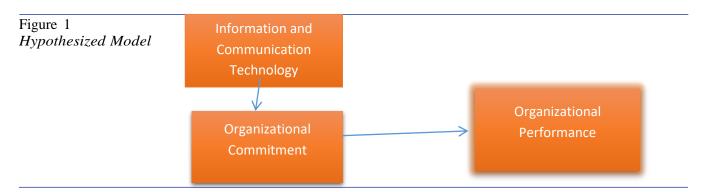
Organizational commitment is the identification and involvement of a person who is relatively strong in the organization. Organizational commitment is the desire and will of organizational members and employees to maintain membership in the organization and are willing to try for the achievement of organizational goals. According to Castellano et al. (2021), organizational commitment includes employees pride, employees loyalty, and employees willingness to join the Zhang organization. al. (2019)et explained organizational commitment as the alignment and loyalty of lecturer to the organization and organizational goals. Castellano et al. (2021) also defines organizational commitment as an attitude and behavior that reflects the likes or dislikes of lecturer towards the organization.

Moreover, digital information and communication system management systems and human capital i.e employee's management are of the latter, making it authoritative for organizations to show all various forms of support through resources and personnel towards enhancing human resources functions in this global networking era (Jalilian, Naghibizadeh Meybodi, & Mohseni, 2021).

Current organizations either profitable or non-profitable that exist are focusing attention to external and internal factors that affect the organizational performance and the internals elements that can affect an output organization either positive or negative in the organization can vary from top leaders in the organization, to existing organizational commitments. According to the statement that is stating that skills and characteristics of transformational leaders in any organization (Yahaya & Ebrahim, 2016), In the organizational research that requires mentoring sessions for employees knowledge enhancement or members to achieve organizational goals and targets (Susanto, 2021) there is also (Yahaya & Ebrahim, 2016) statement stating that transformational leaders are related to employee committees (Shim et al., 2015).

in the organization directly there is an influence from the results of research from (Atmojo, 2012),. The other research has also shown a positive relationship between organizational commitment and employee performance of any organization (Abdullah, 2021; Alqudah et al., 2022; Bhatti et al., 2022; Goetz and Wald, 2022; Sharma et al., 2021; Vuong et al., 2022). Organizational commitment of employees in any organization means the degree of relationship employees have with their organization, and it is frequently linked to a variety of characteristics in an organization, that includes the employee's belief in the organization's goals mission vision and values, employees attitude toward putting in effort for the firm benefits, and their desire and will to stay with the company and organization for longer time and to show committed attitude (Trofimov et al., 2017). Moreover, Mapuranga et al. (2021) stated that commitment of employees refers to an employee's desire and will to stay with a company and organization, readiness of employees to put in effort on its behalf, and the employees belief in and acknowledgement of the company's values and goals. In simple terms, organizational commitment of employees shows the attachment of employees have with the organization, and that can be shown by the will of employees to do extra for the betterment of organization working for late hours for organization, working beyond the job description of employee etc. According to the research work done by Sandra (2020), the working environment of any organization has a positive impact on the organizational commitment and workers activity in the organization. The work climate and use of organizational resources i.e tool techniques software's used by any organization are important and play important role and influences the activity positively through organizational commitment and job engagement. On the other hand research conducted by Rahmat. Dewi (2017) says that the work environment of any organization has a positive impact on organizational engagement and worker activity their performance and output level. The use of digital technology age of organizations has transformed the way of doing businesses in all fields of the business i.e attracting a suitable pool of people by advertising through digital way, helps the candidates in applying the job by using online processing. it helps to the organizations to shortlist the suitable candidates for the organization, helps to hire employees and train employees, and retain employees by creating a sense of job commitment and reviewing employee performance (Nishad, 2017). By doing so, it has been become possible to increased focus by organizations on all sectors of the organization; digitalization helps to do indepth analysis and overall business performance and commitment of employees of the firms (Di Romualdo, El-Khoury & Girimonte, 2018).

Hypothesis 3: Organizational commitment acts as a mediator between ICT and Organizational Performance.



Research Methodology:

According to Sahibzada et al. (2020) and Iqbal et al. (2019) that Higher Education Commission of Pakistan puts a robust emphasis on fostering a studies lifestyle in order that research activities take place in these institutes. In this research studies cross sectional studies method have been applied in this research, so a quantitative research methodology has been implemented by adopting a deductive method. Research works on the relationship between ICT and organizational performance finds that the association between and OP is a measurable marvel. It also examines aspects in such a way as explain this relationship by emerging to hypothetical models that are established on the reasoning that supports knowledge based view theory. Research uses a cross sectional strategy for data collection; in addition, a survey approach is implemented for data collection. Multi-source and multi-level research are used, and manifold analyses are considered in the research.

Thus, information and communication technology is an individual-level variable, and its unit of analysis is conducted at the individual level. Variables such as organizational commitment and green organizational performance are group-level variables and hence analyzed as group-level variables. Research works on the relationship between ICT and organizational performance finds that the association between organizational commitment and organizational performance is a measurable marvel. It examines aspects in such a way as to explain this relationship by emerging hypothetical models that are established on the reasoning that supports knowledge based theory.

Data Collection and Sampling Strategy:

This research has been conducted from higher education institutes i.e Pakistani universities to acquire data from knowledgeable workers. In this research a quantitative method has been applied. Questionnaire is floated in four important towns (Peshawar, Islamabad, Lahore, and Karachi), which encompass a sample from each of the Pakistan's four provinces. Questionnaire has been adapted from previous research article instruments. The distribution of a sample of 580 employees has been selected out of 540 questionnaires returned from respondents from public and private institutions has been used on convenience sampling technique. Five- point Likert scale is used to answer the respondents (1 =strongly disagree to 5 = stronglyagree). The nature of studies is longitudinal data is collected once in order to save time. The current study is empirical in nature based on probability sampling method for selecting the sample. Furthermore, the systematic random sampling method was used for actual representation of the targeted population of the study and cross sectional method has been applied. This research is limited to Pakistan higher education sector. Data has been collected from Pakistani universities. The study population frame has been drawn from universities listed in Pakistan's Higher Education Commission (HECP). Respondents for the study are selected on convenience and easily accessible for the scholar to collect datathe respondents (1 = strongly)disagree to 5 = strongly agree). The nature of studies is longitudinal data is collected once in order to save time. The current study is empirical in nature based on probability sampling method for selecting the sample. Furthermore, the systematic random sampling method was used for actual representation of the targeted population of the study and cross sectional method has been applied. This research is limited to Pakistan higher education sector. Data has been collected from Pakistani universities. The study population frame has been drawn from universities listed in Pakistan's Higher Education Commission (HECP). Respondents for the study are selected on convenience and easily accessible for the scholar to collect data.

DATA ANALYSIS TECHNIQUE:

For sampling (Krejcie and Morgan 1970 Sampling) model technique has been used. According to (Kemp et al., 2018), first, descriptive analysis techniques are used to characterize the data at hand. There are various numerical, graphical, and tabular formats used in descriptive statistics. In step with Thompson (2009), those statistics might also help researchers identify sample functions that may have an effect on the study's findings. That information is typically used to find any flaws or conflicts inside the data, other than describing the sample at hand.

That is done by using examining the frequencies for every variable. Every variable's range of values, in addition to its most and minimum values, are tested by means of the researcher. Primarily based on the source/questionnaire, values outdoor the favored range are examined and adjusted. Second, Smart PLS 4.0 will examine the research (Ali et al., 2018; Ringle, 2005). To examine quantitative data, partial least square structural equation modeling (PLS-SEM) has been used. PLS-SEM is a cutting-edge knowledge processing method that has been successfully employed in business and social science studies to handle sample size and unusual evidence (Hair et al., 2014). This strategy is more appropriate to test current ideas and incorporate intricate structural models (Fernandes, 2012; Ramayah et al., 2017). Covariance-based (CB-SEM) and PLS-SEM are the two techniques employed in the SEM method (Hair et al., 2014). Because PLS-SEM is excellent for examining theoretical levels and intricate interactions between the latent components, the authors choose it over CB-SEM (Hair et al., 2014; Henseler et al., 2009). This strategy has been widely employed in theory testing and validation, and it is suitable for determining whether multidimensional connections exist (Fornell & Larcker, 1981).

Measures:

There are fifteen questions dedicated to the study of "organizational commitment," suggesting a thorough assessment of employee loyalty and satisfaction. The fifteen items related to "ICT" indicate an exploration of various aspects of this subject. At last, there are six items that comprise the evaluation of "Organizational performance," reflecting a strong focus on the efficiency and success of the organization in question with regards to these factors. &larcker 1981).

Table 1

Name of Variable	Name of items
Information and communication technology	20
Organizational commitment	15
Organizational performance	6

Information and communication technology with the help twenty items adapted from of Peter R Albion (2006) that are responded by respondents in research studies measures how it effects the organizational performance six items adapted from (Jinkyo Shin, Md Alamgir Mollah , and Jaehyeok Choi 2023), ,organizational commitment by fifteen items adapted from (Porter et al ; 1974) (Mowday, steers and Porter 1979) mediates organizational performance and ICT.

Table 2 Composite Reliability and validity(Average Variance Extracted):

Indicators	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Information and communication technology	0.799	0.813	0.667
Organizational commitment	0.761	0.736	0.690
Organizational Performance	0.876	0.897	0.670

The table above shows Cronbach's Alpha, Composite Reliability and validity (Average Variance Extracted). The Cronbach's Alpha value for the "Information and communication technology" variable is 0.799, suggesting that the items used to assess this construct consistently measure the same underlying concept with reliability. The construct reliability was found to be strong with a Composite Reliability of 0.813. Additionally, a significant amount of item-level variance was observed in the "Information and communication technology" construct These findings demonstrate the (AVE = 0.667).reliability and validity of the variable, highlighting its significance "Organizational for your study. Commitment" variables, respectively, indicate that these measures demonstrate internal consistency and validity. The Composite dependability values of 0.704 and 0.736 suggest a moderate level of construct dependability. The AVEs for both variables remain above 0.5, suggesting that the two constructs effectively account for the observed variation in the items. All of the indicators mentioned are within the reliable range, indicating a satisfactory level of reliability. Based on our analysis, it is evident that the average retrieved variance falls within the range of 0.5 to 0.7. Additionally, the data quality is exceptionally high, as there is a strong degree of convergent validity observed among the variables.

"Organizational performance" variables, respectively, indicate that these measures demonstrate internal consistency and validity. The Composite dependability values of 0.876 and 0.897 suggest a moderate level of construct dependability. The AVEs for both variables remain above 0.67, suggesting that the two constructs effectively account for the observed variation in the items. All of the indicators mentioned are within the reliable range, indicating a satisfactory level of reliability.

mediates organizationalBased on our analysis, it is evident that the average
retrieved variance falls within the range of 0.5 to 0.7.ty and validityAdditionally, the data quality is exceptionally high, as there
is a strong degree of convergent validity observed among
the variables.

Table 3 R square and adjusted R Square

	R Square	R Square Adjusted
Organizational commitment	0.748	0.733
Organizational performance	0.674	0.651

When selecting a model for a PLS structural equation, it is essential to take into account the coefficient of determination (R2) for each antecedent variable in the latent set. During the selecting process, the importance of this indicator cannot be overstated. According to published research (Urbach & Ahlemann, 2010) and (Chin, 1998b)., the coefficient of determination (R2) quantifies the percentage of total latent variable variance that can be attributed to the explained component. In addition, research has demonstrated that values close to 0.670 are regarded as having a significant amount of influence, values close to 0.333 are regarded as having an average level of influence, and values close to 0.190 or below are regarded as having a very low level of influence (Urbach & Ahlemann, 2010).

According to the findings, there may be a statistically Table 4 presents the findings of a study conducted using the boot strap method. It is evident that there is a clear link between the components and moderation, as moderation has a significant impact on organizational The performance results indicate a significant difference, as the p-value is less than 0.05. This suggests that we can reject the null hypothesis. This is evident from the fact that the value is less than 0.05, indicating the rejection of the null hypothesis The null hypothesis was not rejected (p = 0.00 > 0.05) when testing the impact of information and communication technology on organizational performance and mediating effect of organizational commitment.

This suggests a potential connection between the two variables. Additionally, we observed a strong relationship between information and communication technology and organizational commitment,. In addition, the moderating effect that organizational dedication plays in this relationship plays a crucial role.

So in order to find impact of organizational commitment of employees on organizational performance it is necessary to find their relation. Organizational commitment means level of devotion and affiliation of an employee to his/her organization that in turn increases the level of output of employees for their organization in the form of maximization of profit and decreasing the per unit cost .It is significant to know what factors have an impact on organizational performance so that these be considered during organizational factors may performance measurement. So this table shows a significant impact of organizational commitment on the organizational performance that is dire need of current modern era organizations. So it is significant to how organizational commitment impacts organizational performance.

TABLE 4 Path Coefficients:

Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	P Values
Moderating Effect -> organizational Performance	0.267	0.291	0.056	0.000
Information and communication technology -> organizational Performance	0.135	0.130	0.044	0.000
Information and communication technology -> Organizational commitment	0.060	0.062	0.053	0.000

Table 4 presents the findings of a study conducted using the boot strap method. It is evident that there is a clear link between the components and moderation, as moderation has a significant impact on organizational. The performance results indicate a significant difference, as the p-value is less than 0.05. This suggests that we can reject the null hypothesis. This is evident from the fact that the value is less than 0.05, indicating the rejection of the null hypothesis The null hypothesis was not rejected (p = 0.00 > 0.05) when testing the impact of Information and communication technology on organizational performance.

Theoretical Implications:

With the help of this research studies organizations will be able to enhance their organizational performance by using information and communication technology that in turn increase the level of employee commitment and satisfaction by providing an ease at their work place so it inturn increase overall organizational performance.

Among the theoretical advances, more profound comprehension of the different variables that might affect and the impacts organizational performance. The study also looked ICT effect that is moderated by organizational commitment, and productivity in the direct relationship between ICT and OP. Organizational performance is affected by many factors among these one is organizational commitment. Organizational commitment is the characteristic of an employee that how he is committed to his organizational work (Fu et al., 2022). It also emphasizes the significance of these factors, which have indirect association between ICT and OP that have positive relation so increasing one other also increases. Employees of any organization are an important and effective assets that can effect positively or negatively on any organization so all companies that have this asset it must be managed properly using all sorts of methods i.e training, bonuses, good wage rates and using of ICT to produce better image and retain the employees for longer period of time and by doing this companies can achieve their goals, targets mission and vision Baldrige (2019). It is prominent in most of the industries; the industry that is with the quickest growth and development is the information and communication technology (ICT) sector. In many countries, ICT organizations in the business sector are one of the most important sectors in the business scope. There are number of ongoing hurdles on this industry (ICT). Consequently, it constantly works to strengthen and increase its capabilities and plans to increase its performance. (Mustafa & Badarin, 2016). To survive and maintain existence in a rapidly evolving and growing environment, Jordanian ICT enterprises must incredulous major difficulties (Al-Weshah, Al-Manasrah, and Al Qatawneh, 2018). Furthermore, this study also tested the previous theories related to know ICT, OC such as the ICT impact on OP assumption, which was tested by (Donate & de Pablo, 2015). The knowledge based view theory of Penrose (1959), Additionally, the analysis may assist businesses in thinking about the significance and potential contribution of commitment of employees in organizational performance. The present study explored organizational commitment as a mediator between Information and communication technology, in higher education sector in Pakistan that will help to overcome problems like employees turnover rate, knowledge sharing process among employees and its importance and how it impacts organizational performance that is positive relation. In fact, the present study may just be the pioneer in the exploration of such interrelations, and show a positive impact particularly among developing countries like Pakistan. Castellano et al. (2021), defined and explained the organizational commitment according to higher education organization as "Organizational Commitments the degree to which lecturer believe in and accept organizational goals and to do efforts to achieve and desire to remain with the organization".

As such, this study has sparked new interest among on organizational performance so relevant scholars to further investigate ICT and its impact on organizational performance by using different research methods and sampling size in developing countries i.e Asian countries. In addition, this study is of value to managers as it provides. It is necessary for organizations to gain and sustain improved employee performance in order to achieve organization basic objectives i.e organizational mission, vision, and profits, to gain a competitive advantage, and attain a sustainable growth in the organization (Muardi et al., 2022). Understanding to managers of the value of ICT in the context of employee commitment. ICT is important to organizations in their achievement of innovation performance, as it facilitates them in gaining competitive advantage. Based on the study outcomes, the respondents did try to promote ICT, but with inaccurate knowledge adaptation. This research study has been implemented in higher education sector in Pakistan so this study can also be implemented in different other sectors to check the same variables by using different research methodologies like different sample size, different population, different data analysis techniques etc.

DISCUSSION AND CONCLUSIONS:

According to above mentioned results it is proved that information and communication technology has a positive effect on organizational performance. It is also proved from the results that organizational commitment has a positive impact on organizational performance and it act as a strong mediator between organizational performance and information and communication technology . Previous studies have demonstrated the effects of ICTs on performance (Chege et al., 2020) and now this paper highlights the reasons what is impact of ICT on organizational performance that positive . Furthermore it is proved that organizations like higher education institutes can increase their organizational performance by using a combined effect of information and communication technology and organizational commitment of their employees. Thus, the greater the implementation of ICTs, the greater the innovative activity of organizations. These results coincide with those found in previous studies (Karakara & Osabuohien, 2020; Valdez-Juárez et al., 2018; Yunis et al., 2017). In essence, digital information management systems play a critical role in enhancing the efficiency and performance of the HR department by allowing HR professionals to become strategic Partners in achieving organizational goals (Al-Harazneh & Sila, 2021).

The same thing was also expressed by Herrera & De Las Heras-Rosas (2021), it was stated that there is a positive relationship between organizational commitment and the results desired by the organization. In fact, according to Hasan et al. (2021), employees who are committed to the organization have the potential to improve performance individually, in groups, and the organization. This research studies also proves that organizational commitment has positive impact and it increases the organizational performance.

REFERENCES:

- Ali, N., & Gulzar, R. (2022). The Why Knowledge Infrastructure Capability Matters for Faculty Knowledge Management Engagement in Higher Education of Pakistan? *Journal of Workplace Behavior*, 3(1), 52-65. https://www.charismajwb.com/index.php/jwb/article/view/114
- Akhtar, C. S., Aamir, A., Khurshid, M. A., Abro, M. M. Q., & Hussain, J. (2020). Total rewards and retention: Case study of higher education institutions in Pakistan. *Procedia-Social Behavioral Sciences*, 210, 251-259.
- Ali, F., Rasoolimanesh, S. M., Sarstedt, M., Ringle, C. M., & Ryu, K. (2018). An assessment of the use of partial least squares structural equation modeling (PLS-SEM) in hospitality research. *International Journal of Contemporary Hospitality Management*, 30(1), 514-538. <u>https://doi.org/10.1108/IJCHM-10-2016-0568</u>
- Ali, N., & Gulzar, R. (2022). The Why Knowledge Infrastructure Capability Matters for Faculty Knowledge Management Engagement in Higher Education of Pakistan? *Journal of Workplace Behavior*, 3(1), 52-65. <u>https://www.charismajwb.com/index.php/jwb/article/view/114</u>
- Bieńkowska, A., & Ignacek-Kuźnicka, B. (2019). Influence of knowledge workers work motivation on their job performance–results of empirical research. *Central European Business Review*, 8(5), 54. <u>https://doi.org/10.18267/j.cebr.224</u>
- Borsi, M. T., Mendoza, O. M. V., & Comim, F. (2022). Measuring the provincial supply of higher education institutions in China. *China Economic Review*, 71(5), 101724. https://doi.org/10.1016/j.chieco.2021.101724
- Bran, C. A., Malone, T., Lewis, D., & Burton, J. (2019). The knowledge worker of the future. Proceedings of the 24th ACM SIGPLAN conference companion on Object oriented programming systems languages and applications,
- Brown, R. (2018). *Knowledge, education, and cultural change: papers in the sociology of education* (Vol. 3). Routledge.

- Brown, S. D., Hallam, P. R., & Tang, H. (2018). Impacts Development of Higher Education Faculty and Students. Curriculum Teaching, 33(1), 55-77.
- Butt, M. A., Nawaz, F., Hussain, S., Sousa, M. J., Wang, M., Sumbal, M. S., & Shujahat, M. (2019). Individual knowledge management engagement, performance in knowledge-based organizations: the implications for knowledge processes and knowledge-based systems. Computational and Mathematical Organization Theory, 25(3), 336-356. https://doi.org/10.1007/s10588-018-9270-z
- Cortada, J. (2019). Rise of the knowledge worker (2nd Edition ed.). Routledge. https://doi.org/10.4324/9780080573014
- Denson, F. C. (2018). Knowledge worker motivation University of Pretoria].
- Donate, M. J., & de Pablo, J. D. S. (2020). The role of management practices and innovation. Journal of business research. 68(2), 360-370. https://doi.org/10.1016/j.jbusres.2014.06.022
- Drucker, P. F. (2018). Implementing the Effective Management of Knowledge: Knowledge-Worker Knowledge Management Year Book 2000-2001 (pp. 267-283). Routledge.
- Ebert, P., & Freibichler, W. (2017). Nudge management: applying behavioural science to increase knowledge worker productivity. Journal of organization Design, 6(1), 1-6. https://doi.org/10.1186/s41469-017-0014-1
- [Record #488 is using a reference type undefined in this output style.]
- Feiz, D., Dehghani Soltani, M., & Farsizadeh, H. (2019). The effect of knowledge sharing on the psychological empowerment in higher education mediated by organizational memory. Studies in *Higher Education*, *44*(1), 3-19.
- Fernandes, V. (2018). (Re) discovering the PLS approach in management science. Management Jounal, 15(1). https://search.ebscohost.com/
- Figurska, I. (2020). Knowledge Workers Engagement in Management & Ergonomics, 9(2), 43-59. http://frcatel.fri.uniza.sk/hrme/files/2015/2015_2 04.pdf
- [Record #65 is using a reference type undefined in this output style.]
- Habib, M. N., Khalil, U., Khan, Z., & Zahid, M. (2021). Sustainability in higher education: what is happening in Pakistan? International Journal of Sustainability in Higher Education, 22(3), 681-

706. https://doi.org/10.1108/IJSHE-06-2020-0207

- of Chinese Education Reform on Trust Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. European business review, 26(2), 106-121. https://doi.org/10.1108/EBR-10-2013-0128
- knowledge-worker productivity, and innovation Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2019). The use of partial least squares path modeling in international marketing. In New challenges to marketing. Emerald international Group Publishing Limited.
 - Iqbal, A., Latif, F., Marimon, F., Sahibzada, U. F., & Hussain, S. (2018). From knowledge management to organizational performance: Modelling the mediating role of innovation and intellectual capital in higher education. Journal of Enterprise Information Management, 32(1),36-59. https://doi.org/10.1108/JEIM-04-2018-0083
- knowledge-oriented leadership in knowledge Iqbal, A., Latif, F., Marimon, F., Sahibzada, U. F., & Hussain, S. (2019). From knowledge management to organizational performance: Modelling the mediating role of innovation and intellectual capital in higher education. Journal of Enterprise Information Management, 32(1), 36-59.
- Productivity: The Biggest Challenge. In The Iqbal, Z., & Malik, M. (2019). Entrepreneurial orientation and engagement of Pakistani small and medium enterprises in sustainable development practices: Mediating role of knowledge management. Business Strategy & Development, 2(3), 192-203. https://doi.org/10.1002/bsd2.53
 - Karaboga, T., Erdal, N., Karaboga, H. A., & Tatoglu, E. (2022). Creativity as a mediator between personal accomplishment and task performance: A multigroup analysis based on gender during the COVID-19 pandemic. Current Psychology, 1-13. https://doi.org/10.1007/s12144-021-02510-z
 - Kemp, S. E., Ng, M., Hollowood, T., & Hort, J. (2018). Introduction to descriptive analysis (Vol. 1).
 - Kianto, A., Shujahat, M., Hussain, S., Nawaz, F., & Ali, M. (2018). The impact of knowledge management on knowledge worker productivity. Baltic Journal of Management. 14(2). 178-197. https://doi.org/10.1108/BJM-12-2017-0404
- Work in Theory and Practice. Human Resources Nagshbandi, M. M., & Jasimuddin, S. M. (2018). Knowledge-oriented leadership and open innovation: Role of knowledge management France-based multinationals. capability in International Business Review, 27(3), 701-713. https://doi.org/10.1016/j.ibusrev.2017.12.001
 - Nelson, K., & McCann, J. E. (2010). Designing for knowledge worker retention & organization performance. Journal of Management and Marketing Research, 3, 1.

- [Record #423 is using a reference type undefined in this Sahibzada, U. F., Jianfeng, C., Latif, K. F., & Sahibzada, output style.]
- Raihan, A., & Tuspekova, A. (2022). Nexus between economic growth, energy use, agricultural productivity, and carbon dioxide emissions: new evidence from Nepal. Energy Nexus, 7, 100113. https://doi.org/10.1016/j.nexus.2022.100113
- Ramayah, T., Cheah, J., Chuah, F., Ting, H., & Memon, M. A. (2017). Partial least squares structural equation modeling (PLS-SEM) using smartPLS 3.0 (2nd ed.). Pearson.
- Ramjeawon, P. V., & Rowley, J. (2018). Knowledge management in higher education institutions in Mauritius. International Journal of Educational Management, 33(7), 1319-1332. https://doi.org/10.1108/IJEM-05-2017-0129
- Razzaq, S., Shujahat, M., Hussain, S., Nawaz, F., Wang, M., Ali, M., & Tehseen, S. (2018). Knowledge management, organizational commitment and knowledge-worker performance: The neglected sector. Business Process Management Journal. 25(5), 923-947. https://doi.org/10.1108/BPMJ-03-2018-0079
- Rehman, U. U., & Iqbal, A. (2020). Nexus of knowledgeoriented leadership, knowledge management, innovation and organizational performance in higher education. Business Process Management 1731-1758. Journal. 26(6), https://doi.org/10.1108/BPMJ-07-2019-0274
- Reinhardt, W., Schmidt, B., Sloep, P., & Drachsler, H. (2018). Knowledge worker roles and actionsresults of two empirical studies. Knowledge and process management, 18(3), https://doi.org/10.1002/kpm.378
- Ringle, C. M. (2005). SmartPLS 2.0 (M3). CiNii Journals http://www.smartpls.de
- Sahibzada, U. F., Cai, J., Latif, K. F., & Sahibzada, H. F. (2020a). Knowledge management processes, knowledge worker satisfaction, organizational performance: Symmetric and asymmetrical analysis. Aslib Journal of Information Management, 72(1), 112-129.
- Sahibzada, U. F., Jianfeng, C., Latif, K. F., & Sahibzada, H. F. (2020). Fueling knowledge management processes in Chinese higher education institutes (HEIs): the neglected mediating role of knowledge worker satisfaction. Journal of Enterprise Information Management, 33(6), 1395-1417. https://doi.org/10.1108/JEIM-07-2019-0197

- H. F. (2020d). Fueling knowledge management processes in Chinese higher education institutes (HEIs): the neglected mediating role of knowledge worker satisfaction. Journal of Enterprise Information Management, 33(6), 1395-1417.
- Sahibzada, U. F., Jianfeng, C., Latif, K. F., Shah, S. A., & Sahibzada, H. F. (2020). Refuelling knowledge management processes towards organisational of performance: mediating role creative organisational learning. Knowledge Management Research & Practice. 12(3), 1-13. https://doi.org/10.1080/14778238.2020.1787802
- Sahibzada, U. F., Latif, K. F., & Xu, Y. (2021). Symmetric asymmetric modeling of knowledge and management enablers to knowledge management processes and knowledge worker productivity in higher education institutes. Journal of Enterprise 729-756. Information Management. 35(3). https://doi.org/10.1108/JEIM-08-2020-0346
- role of knowledge management in the public Sahibzada, U. F., Latif, K. F., & Xu, Y. (2021f). Symmetric and asymmetric modeling of knowledge management enablers to knowledge management processes and knowledge worker productivity in higher education institutes. Journal of Enterprise Information Management. https://doi.org/https://doi.org/10.1108/JEIM-08-2020-0346
 - Sahibzada, U. F., Latif, K. F., Xu, Y., & Khalid, R. (2020e). Catalyzing Knowledge Management Processes Towards Knowledge Worker Satisfaction: Fuzzy-Set Qualitative Comparative Analysis. Journal of Knowledge Management, 24(10), 2373-2400.
 - 150-174. Sahibzada, U. F., Xu, Y., Afshan, G., & Khalid, R. (2021). Knowledge-oriented leadership towards organizational performance: symmetrical and asymmetrical approach. **Business** Process Management Journal, 27(6), 1720-1746. https://doi.org/10.1108/BPMJ-03-2021-0125
 - and Sahibzada, U. F., Xu, Y., Afshan, G., & Khalid, R. (2021g). Knowledge-oriented leadership towards organizational performance: symmetrical and asymmetrical approach. Business Process Management Journal. https://doi.org/https://doi.org/10.1108/BPMJ-03-2021-0125
 - Shah, S. T. H., Shah, S. M. A., & El-Gohary, H. (2022). Nurturing Innovative Work Behaviour through Workplace Learning among Knowledge Workers of Small and Medium Businesses. Journal of the Knowledge Economy, 1-24. https://doi.org/10.1007/s13132-022-01019-5

- Shamim, S., Cang, S., & Yu, H. (2019). Impact of knowledge oriented leadership on knowledge management behaviour through employee work attitudes. *The International Journal of Human Resource Management*, 30(16), 2387-2417. https://doi.org/10.1080/09585192.2017.1323772
- Shehzad, M. U., Zhang, J., Dost, M., Ahmad, M. S., & Alam, S. (2022). Knowledge management enablers and knowledge management processes: a direct and configurational approach to stimulate green innovation. *European Journal of Innovation Management*(ahead-of-print). <u>https://doi.org/10.1108/EJIM-02-2022-0076</u>
- Shujahat, M., Ali, B., Nawaz, F., Durst, S., & Kianto, A. (2018). Translating the impact of knowledge management into knowledge-based innovation: The neglected and mediating role of knowledgeworker satisfaction. *Human Factors Ergonomics in Manufacturing Service Industries*, 28(4), 200-212.
- Syed, A., Gul, N., Khan, H. H., Danish, M., Ul Haq, S., Sarwar, B., Azhar, U., & Ahmed, W. (2021). The impact of knowledge management processes on knowledge sharing attitude: The role of subjective norms. *The Journal of Asian Finance, Economics* and Business, 8(1), 1017-1030.

https://doi.org/10.13106/jafeb.2021.vol8.no1.101

- management behaviour through employee work attitudes. *The International Journal of Human* Thompson, C. B. (2009). Descriptive data analysis. *Air Medical Journal*, 28(2), 56-59.
- ResourceManagement, 30(16), 2387-2417.
https://doi.org/10.1080/09585192.2017.1323772
l, M. U., Zhang, J., Dost, M., Ahmad, M. S., &
Alam, S. (2022). Knowledge management
enablers and knowledge management processes:Wang, Y., Yang, L., Wu, J., Song, Z., & Shi, L. (2022).
Mining Campus Big Data: Prediction of Career
Choice Using Interpretable Machine Learning
Method.ResourceMang, Y., Yang, L., Wu, J., Song, Z., & Shi, L. (2022).
Mining Campus Big Data: Prediction of Career
Choice Using Interpretable Machine Learning
Method.Mathematics, 10(8), 1289.
https://doi.org/10.3390/math10081289
- a direct and configurational approach to stimulate
green innovation. European Journal of
Innovation Management(ahead-of-print).
https://doi.org/10.1108/EJIM-02-2022-0076Zahid, G., Hooley, T., & Neary, S. (2019). Careers work in
higher education in Pakistan: current practice and
options for the future. British Journal of Guidance
Counselling, 1-11.
 - Zelles, R. (2015). Better profitability through higher employee engagement in the knowledge worker age. *Journal of HRM*, *18*(2), 62-72.
 - Zia, N. U. (2020). Knowledge-oriented leadership, knowledge management behaviour and innovation performance in project-based SMEs. The moderating role of goal orientations. *Journal of Knowledge Management*, 24(8), 1819-1839. https://doi.org/10.1108/JKM-02-2020-0127