Relationship Between the Innovative Organizational Culture and Firm Performance "Mediating Role of Degree of Implementation of Enterprise Resource Planning (ERP) and Benefits of Enterprise Resource Planning"

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CERTIFICATE

This is to certify that this thesis entitled: **"Relationship between the innovative Organizational Culture and Firm Performance "Mediating Role of Degree of Implementation of Enterprise Resource Planning (ERP) and Benefits of Enterprise Resource Planning"**submitted by Ms. Yumna Ashraf is accepted in its present form by the Department of Business Studies, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree of **Master of PhilosophyinBusiness Economics**.

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DECLARATION

I Yumna Ashraf hereby state that my M.Phil. thesis titled Relationship between the Innovative Organizational Culture and Firm Performance “Mediating Role of Degree of Implementation of Enterprise Resource Planning (ERP) and Benefits of Enterprise Resource Planning” is my own work and has not been submitted previously by me for taking any degree from this university Pakistan Institute of Development Economics or else anywhere in the country.

At any time if my statement is found to be incorrect after my Graduation the university has the right to withdraw my M.Phil. degree

Yumna Ashraf

DEDICATION

This thesis is dedicated to my parents, siblings and teachers who supported me through my highs and lows, for always believing in me whilst encouraging me to pursue my dreams at my own free will. I dedicate this work to my loved ones who helped me either morally or provided the late-night coffee or just helped me get through the day by reminding me how much I meant to them.

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"Trust in Allah with all your heart and lean not on your own understanding; in all your ways acknowledged him, and he will make your path straight."

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a new perspective.

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YUMNA ASHRAF

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Abstract

Due to the spacious competition, and proliferation of globalization, it is very difficult for firms to strive, stay, and generate satisfactory returns to shareholders. The huge progression in the advancement of technology, enforces a firm to become nimbler and innovatively retort towards the continuous change to meet customers' expectations, and also conquer the competitive edge in the market in at least possible resources. Therefore, globally all firms emanate in the market with the same goals, and objectives to improve firm performance; that is financial and operational performance. To triumph the goals, several available information technology tools, and techniques are used to make the process more efficient to overcome the firm's challenges. Therefore, this study is focused on the technological innovation, to implement the higher degree of implementation of enterprise resource planning to access on the huge data sets and become digitalized firms due to the presence of electronic platforms and higher IT penetration in the business. ERP's provides the extensive approachability of data, and upgraded information. It enables firms to competently interpret the vigorous dynamic environment to make efficient decisions. Therefore, this study proposes a model to examine the processes through which Innovative Organizational Culture (IOC) effects the Firm Performance (FP), and it also dig downs the outcomes of IOC, and understand the paths that explain this process. However, IOC is one of the drivers for better firm performance. It encourages the innovations and technology, and a higher degree of implementation of enterprise resource planning (DIERP). Efficaciously implemented the ERP system, leads to the higher benefits of enterprise resource planning (BERP). The research model is erected on the Resource-Based View (RBV). Purposive sampling technique is used to select sample. Primary data is collected from 234 higher to medium level managers from manufacturing and services firms using ERP's package in their operations. The study uses Partial Least Squares Structural Equation (SMART PLS 3) to test the hypothesis. Results reveals that a higher DIERP mediates the relationship between the IOC and the BERP. Similarly, the BERP mediates the relationship between the DIERP, and FP. The current study provides the insights to the managers to emphasize on the mechanism to encourage, and foster the IOC, for higher DIERP, and to sustain proper management system towards acquiesces of change to enhance FP.

Keywords: ***Innovative Organizational Culture, Degree of Implementation of Enterprise Resource Planning, Benefits of Enterprise Resource Planning, Resource-Based View, Firm Performance.***

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LIST OF ABBREVIATIONS

ERP	Enterprise Resource Planning
IOC	Innovative Organizational Culture
DIERP	Degree of Implementation of Enterprise Resource Planning
BERP	Benefits of Enterprise Resource Planning
FP	Firm Performance
ROI	Return on Investment
ROA	Return on Assets
ROS	Return on Sales
RBV	Resource Based View

1 CHAPTER 01

INTRODUCTION

1.1 Background of the study:

Due to the advent of globalization, and extensive competition success of every nation's economy depends upon the firm's performance. In the current era, firm performance is very crucial for the effective management of a firm. It is very challenging for managers to attain. Due to rapid changes in the business environment, it is a need for a firm to timely respond towards change for their survival. Thus, in today's world, there is a huge progression in the technological environment, which enforces firms to adopt more innovative ways. Therefore, firms are more inclined towards the higher implementation of enterprise resource planning to easily respond towards dynamic micro, and macro environments. However, Successful firms quickly, and efficiently react towards advancement in the market place for improving performance. According to Aydinera & Tatoglu, (2018) examined different tools, and techniques are the metaphors used by firms to overcome the firm's challenges. Therefore, successful firms hurriedly respond to a vigorous environment by implementing updated technological tools such as enterprise resource planning in their operations.

Consequently, Innovative Organizational Culture (IOC) fosters and encourages innovation in the firm. Therefore, IOC firms support and encourage the higher implementation of enterprise resource planning. Thus, firms have access to huge data sets, and firms are more digitalized in nature. Harrison & Freeman, (1999) explains that when firms perform effectively, due to higher implementation of enterprise resource planning, which is positively linked with the higher benefits of the enterprise resource planning to enhance firm performance. Whenever, firm provides unique, reliable, and convenient services, which leads to a higher level of stakeholder satisfaction such as

employee satisfaction, customer satisfaction, and supplier satisfaction. Thus, firms continually update and innovate their processes to upsurge their services to meet customers' expectations, enhance their market shares, and boost firm performance.

1.2 Justification of the study:

This study is focused on innovative organizational culture (IOC) and processes i.e. Degree of implementation of enterprise resource planning (DIERP), and benefits of enterprise resource planning (BERP) effects firm performance (FP).

Innovative organizational culture (IOC) is a tendency by which the firm is willing to adopt the new processes to get superior firm performance. When the firm has an innovative culture, it encourages new ideas, solutions, and technologies, to get a competitive edge in the market. It also stimulates innovative behavior to get an innovative solution. Therefore, it encourages and supports the higher degree of implementation of enterprise resource planning (DIERP). Moreover, ERP is the latest technological tool, it implemented to integrate the business activities with the management process. According to Kazemi et al., (2014) explains that in recent years, due to higher degree of globalization and competitiveness the firm requires to automate their process, to cope up the demand of micro and macro environment, and enforced firms to invest significant resources on a higher degree of implementation of enterprise resource for their survival.

The course of recent years, companies around the globe have implemented ERP's, it is considered to be a crucial factor to get a competitive edge in the market. According to Shatat & Udin, (2013) identified that higher degree of implementation of enterprise resource planning (DIERP) provide several considerable benefits such as operational, managerial, strategical, IT infrastructure and organizational benefits in a way to provide improved customer service, built external linkages, enhanced business innovation, improved communication process, effective management, and

boost employee engagement, enhance coordination, increase employee morale, and decrease operational cost and expenses. Therefore, firms need qualitative information on time among several units of the firm. All information is accessible, which leads to the improvement in information sharing, business planning, and decision-making process. Thus, firms should deliver the proper training session to their employees, for improving compatibility and perceived ease of ERP's package to supremely enhance firm performance.

The current study measures the firm performance by the two ways one is the operational performance and other financial firm performance. Operational performance is comprised of several stakeholder's satisfactions such as employee satisfaction, customer satisfaction, and supplier satisfaction. While the financial performance is measured by following ways that consist of Return on Assets (ROA), Return on Sales (ROS), and Return on Investments (ROI). Thus, the firm performance is improved, due to the foster of innovative organizational culture (IOC), a higher degree of implementation of enterprise resource planning (DIERP), which generates higher benefits of enterprise resource planning (BERP).

1.3 Problem Statement:

According to Gunasekaran & Love, (1999) explain that due to the advancement of technology, the world becomes the global village. As the competition increases progressively. Firms should take the step to differentiate their products and services. Here, the Debate exists about the contribution of information technology such as enterprise resource planning to improve firm performance. In a highly competitive global business environment firms seek to improve, and sustain their competitiveness through a higher degree of implementation of enterprise resource planning. Thus, IOC provides a flexible work environment. Therefore, those firms that have higher IOC are more inclined towards the higher degree implementation of enterprise resource planning (DIERP).

According to Trott & Hoecht, (2004) investigated that when firms successfully implement the ERP's package, gets the higher sophisticated benefits of enterprise resource planning such as improve customer service, shorten cycle times, reduce cost, meet changing expectations by providing accurate, timely, and integrated information to improve decision making for enhancement of firm performance. Hence, firms should adopt the innovative organizational culture, encourage as well as foster it. Henceforth, Firms should also provide proper training sessions to their employees; to enhance their compatibility with the ERP's. Thus, there is an enhancement of employee satisfaction relates to higher customer satisfaction. Moreover, knowledge workers effectively target the market, produce customized products and services. Therefore, firms efficiently and effectively respond to the micro and macro dynamic environment.

1.4 Significance of the Study:

According to Gursoy & Swanger, (2007) explains that it's very difficult to compete and stay in this globalized era, and generate satisfactory returns towards shareholders. However, managers should quickly respond to continuous change and meet the customers' expectations to satisfy them. Due to this, firms get a competitive edge in the market. ERP is the latest technique, used by the firms to make efficiently run internal and external operations by getting on-time information, and rapidly respond to the dynamic environment. This study is focused on the innovative organizational culture, and processes that lead to higher firm performance. Moreover, firms should understand the importance of innovative organizational culture (IOC) that helps to implement the ERP. It may also help to expand their realized benefits that are categorized into five dimensions such as operational, managerial, strategical, IT infrastructure, and organizational benefits to supremely enhance firm performance. This study presents some sensible applications in the implementation and expansion of ERP. This study also facilitates the decision for policymakers to

make a huge investment in technology. Furthermore, this study provides insight for firms to emphasize the mechanism to shape, encourage, and foster the innovative organizational culture (IOC). For the higher implementation of ERP's package and diffusion of the existing one. Innovative organizational culture and processes i.e. implementation of a degree of enterprise resource planning (DIERP) and benefits of enterprise resource planning (BERP) belong to the higher firm performance (FP) is under-explored; thus, this study also contributes in literature for further research.

1.5 Research Gap:

This study is depending upon The Innovative Organizational Culture and its processes play a crucial role to enhance firm performance. The mediating role of the Degree of Implementation of an Enterprise of Resource Planning and the Benefits of Enterprise Resource Planning is also examining to improve firm performance.

1.6 Research Inquiries:

- What is the relationship between Innovative Organizational Culture (IOC) and Firm Performance (FP)?
- What is the relationship between the Innovative Organizational Culture (IOC) and Degree Implementation of Enterprise Resource Planning (DIERP)?
- What is the relationship between the Degree Implementation of Enterprise Resource Planning (DIERP) and the Benefits of Enterprise Resource Planning (BERP)?
- What is the relationship between the Benefits of Enterprise Resource Planning (BERP) and Firm Performance (FP)?

1.7 Research objectives:

- To identify the processes through which Innovative Organizational Culture (IOC) effects the Firm Performance (FP).
- To dig down the outcomes of Innovative Organizational Culture (IOC), and understand the paths that explain this process.

1.8 Summary:

Due to the advancement of technology, the world becomes a global village. It's very challenging for firms to compete in this competitive era. This study is based on the theoretical background of Resource-Based View (RBV). It elucidates that Firms utilize all their resource to be competent in the market and improve their firm performance. In this current study, Innovative Organizational Culture (IOC), and its process that is the Degree of Implementation of Enterprise Resource Planning (DIERP), and Higher the Realized Benefits of Enterprise Resource Planning (BERP) are the important drivers to improve the firm performance. ERP is the latest technique, used by the firms to make efficiently run internal and external operations by getting on-time information, and rapidly respond to the dynamic environment. When firms invest huge capital to foster the Innovative Organizational Culture (IOC), its plays an important role towards the higher degree of implementation of enterprise resource planning (DIERP), and provide considerable benefits of enterprise resource planning (BERP) such as operational, managerial, strategical, IT infrastructure, and organizational benefits by improving customer service, built external linkages, business innovation, improved communication process, management, and employee engagement, enhance coordination, improved employee morale, and decrease the operational cost and expenses to improve firm performance.

2 CHAPTER 02

LITERATURE REVIEW

This chapter presents the literature review about the Relationship between the Innovative Organizational Culture and Firm Performance “Mediating role of Degree of Implementation of Enterprise Resource Planning (ERP) and Benefits of Enterprise Resource Planning (ERP)”. Several studies have provided the material on firm performance, and their contributions are discussed in this chapter. The literature review covers the theoretical aspects. The theoretical review provides information about the research topic. It also used to create a conceptual framework of the study.

2.1 Firm Performance (FP):

According to Siminica, (2008) explains that firm performance is a function of two variables efficiency and effectiveness, the firm is performant when its same time efficient and effective. According to Selvam & Gayathri, (2016) describes that Organizational effectiveness and firm performance both are a different concept, organizational effectiveness consists of three layers, while the firm performance is a subset of organizational effectiveness that cover operational and financial outcome). According to Verboncu & Zalman, (2005) defines that the Firm is performant when it is efficient, effective, and competitive. According to Porter, (1986) states that Firm performance is relying on the ability of the firm to generate value for their end-users. Taouab & Issor, (2019) identifies that Firm Performance itself a bag word because it covers several notions such as growth, profitability, productivity, efficiency, return, and competitiveness. According to Bartoli & Blatrix, (2015) describe that Firm performance can be achieved by following factors

such as directing, evaluating, productivity, efficacy, and quality. According to Al-Matari, (2014) clarifies that the performance of the firm is measured by the actions, efficacy, and effectiveness.

According to M. Selvam, (2016) firm performance is determined by operational performance and financial performance. According to Clarkson, (1995) operational performance is measured by several stakeholder's satisfactions such as employee satisfaction, customer satisfaction, and supplier satisfaction.

According to Harter et al., (2002) explains that firm performance is highly dependent on employee satisfaction. When firms invest huge capital on human resource practices, it leads to employee satisfaction and employee retention. According to Selvam & Gayathri et al., (2016) investigated that the firm can invest in the training and development to attract, and retain the knowledge workers, and reduced the turnover rates that positively belong to the superior firm performance. According to Chi & Gursoy, (2009) examined that when the firm provides a superior working environment to their employees. Hence, Employees become more satisfied due to a high level of motivation than a dissatisfied one. Therefore, highly enthusiastic employees are more efficient, and actively perform their task. According to Santos & Brito, (2012) identified that Employee satisfaction is directly linked with the employee retention that reduced the attracting and training cost of new employees, due to this employee provides high-quality services to enhance firm performance.

According to Bernhardt et al., (2000) investigated that highly satisfied employees provide high-quality services to their customers. Therefore, firms generate high sales and more financial returns that are positively associated with better firm performance. According to Hatem, (2014) indicated that highly performant firm invest huge capital on their knowledge workers, and research and development department to improve the morale of their employees. Employee satisfaction,

customer satisfaction, and better firm performance are highly correlated with each other. The "service profit chain" was developed on the behalf of three discipline i.e. employee capability, customer loyalty, and financial outcome these three disciplines directly belong to the superior firm performance (Hesket et al., 1997).

According to Johnson et al., (1996) examined that Customer satisfaction is one of the determinants that lead to purchase intention and customer loyalty. Customers are very important that play a key role to increase the performance of the firm because all firms want to meet customer expectations. Therefore, firms work on their weaknesses to avoid it, fulfill the needs, wants, and expectations of the customers, to improve the existing quality of the products and services, and enhance the value creation to improve firm performance (Santos & Brito, 2012).

Highly satisfied customer leads to repurchase intention that directly linked with customer loyalty, it positively belongs to superior firm performance (Barney & Clark, 2007). Customer satisfaction is the prerequisite of word of mouth, if a customer is dissatisfied creates negative word of mouth that leads to a decrease in the firm performance (Spinelli & Canavos, 2000). According to Reichheld & Sasser, (1990) examined that more financial outcome is generated by the existing customers then the new one. Furthermore, loyal customers come having big transactions than others. Higher the attracting cost of new customers that linked with the abridged financial outcome (Gursoy et al, 2007).

According to Geo, (2019) investigated that Supplier satisfaction also plays a vital role in smoothing the supply chain management (SCM) of the firm. It relates to a reduction in the distributive cost and enhances the financial return. Hence it improves firm performance.

According to Shin & Collier et al., (2000) describes that supplier satisfaction relates to the collaborative environment of the firms to enhance the supplier performance. Therefore, the supplier happily performed their services. Due to a higher reduction in the cost and enhance delivery reliability, to improves the performance of the firm.

In the modern era, firms are more concentrated on the just in time delivery (JIT) and eliminate unnecessary activities from the distribution to reduce the cost. Furthermore, the operational performance of a firm is measured by the OPEX phenomena. According to Steven & Koenders, (2016) identify that it is the state in which firm achieved fast and reliable delivery, minimum lead time achieved, high utilization of the resources, and reduced distribution cost of products and services are obtained to improve firm performance.

Firm performance is measured on financial-based. Hence, Financial performance is measured by the following ways i.e. Return on Assets (ROA), Return on Sale (ROS), and Return on Investment (ROI) (Al-Matari & Al siwidi et al, 2014; Selvam & Gayathri et al, 2016; Basso & Kayo Kimura, 2014; Basso & Kayo Kimura, 2014).

According to Şamiloğlu & Öztop, (2017) explains that when the Return on Assets (ROA) is high, it indicates that firms efficiently and effectively using their assets to create more income. The higher the Return on Assets (ROA), it depicts the effective use of the assets in firms (Haniffa & Huduib, 2006). When higher return on the sale (ROS) leads to the generation of more profit, which directly belongs to the higher firm performance (LAZĂR, 2017).

Return on the investment (ROI) it’s an indicator of firm performance. According to Brousselle & Benmarhnia, (2016). ROI is defined as the benefits get by the firm against its cost. Return on Investment is a ratio in which how much benefit is earned by a firm from a particular project

against its cost. ROI is used to measure the firm's efficiency against invested capital for a particular purpose (Kabajeh & Nuaimat et al., 2012). ROI is utilized to measure the firm's capability to generate the expected returns against the invested resources. When the ROI is higher it means the gain is relatively higher than its cost and vice versa. Higher gain leads to a reduction in the cost (Zamfir & Manea., 2016).

Firm performance is measured by the different factors such as economic condition i.e. inflation rate, per capita income, corporate governance directly associated with the firm performance. Ownership structure and risk management are also the indicators, while the Inflation rate and firm performance have a reciprocal relationship with firm performance (Hannan, 2019). According to the previous literature Corporate social responsibility positively influence firm performance (Adetunji & Owolabi, 2016).

2.2 Innovative organizational culture (IOC):

Innovative organizational culture is such a culture in which innovative ideas are held, encouraged, and executed (Uzkurt & Kumar et al., 2013). Innovative organizational culture relates to infrastructure, which supports those behaviors which are involved in the innovative process and commitment towards the innovation adaptation (Vera & Crossan, 2009). Innovative organizational culture is considering to be a more creative, risk-taking, openness to new ideas, and having an entrepreneurial mindset (Oskarsson & Gudlaugsson, 2014). Innovative organizational culture is that culture which is striving for the innovation for this organization emphasis all the employees to participate in it, to share the responsibility. Therefore, the value of the knowledge capital will be more (Martínde Castro et al., 2013; Wang et al., 2012). Innovative organizational culture defined as the set of norms, values, and artifacts which bolsters the organizational innovativeness (Tian & Deng et al, 2018). Innovative organizational culture is furthermore defined as it

encourages openness, communication, and decentralized decision making (Oskarsson & Gudlaugsson, 2014).

According to Lock & Kirkpatrick, (1995) Innovative Organizational Culture is defined as the problem is defined innovatively and creative solutions are provided. Innovative organizational culture (IOC) is an intangible asset that is used to respond to the invention, taking a risk, forecast future market trends, and learning (Brettel & Cleven, 2011). According to Dobni, (2008) investigated that Innovative organizational culture enhances the power of creativity among the employees they take as an opportunity, not a risk, it higher the motivation and encouragement among employees. Innovative organizational culture supports encouraged and implement the creative solution (Martins & Terblanche, 2003).

IOC is one of the factors that play a crucial role in the long term success of a firm. Due to an increase in the competitive environment, there is a need for organizations to have an innovative organizational culture for survival and prosperity (Isaksen & Ekvall, 2010). It also Innovative boosted by the following ways such as Socialization process and other is the organizational elements such as strategy, policy, procedures, support, mechanism, behavior, management concept, and structure (Martins &Terblanche, 2003). These elements support the new ideas, increase the innovation process, and improve communication that positively associated with firm performance (Uzkurt & Kumar et al., 2013).

According to Valencia & Jimen, (2015) investigated that Innovative organizational culture (IOC) plays an important role in the leading edge in the market. Innovative organizational culture stimulates innovative behavior among the employees of the organization to provide creative solutions to get a competitive edge in the market to improve firm performance (Jamrog et al, 2006). Furthermore, it motivates the employees to think innovatively, it also encourages to smartly tackle

the problem and encourage innovative ways, and explorations to quickly respond to the dynamic environment to boost the firm performance (Miron et al, 2004). It also increases the feeling of empowerment. Therefore, employees participate in the decision-making process, due to this decentralized decision-making process increase (Uzkurt & Kumar et al., 2013).

In several studies, there are other different factors such as transformational leadership and firm size positively linked with the Innovation Organizational Culture because, it linked with the stimulation of the employee's capacity to enhance the innovative behavior to increase the firm performance (Chen et al., 2009). Innovative organizational culture (IOC) depicts the organization's competencies and positive image, due to this organization quickly respond towards the change and win the competitive advantage in the market that positively belongs to the firm performance (Alm & Jönsson, 2014).

Additionally, top managers define the problem, objective, explain and divide the work among the employees on behalf of their capability. Therefore, IOC encourages employees' creativity which is positively connected with firm performance (Jung & Cow et al., 2003). Moreover, IOC supports the new technologies and process, because these are improved version of the existing one, it brings the enhancement in the firm performance (Yuan & Woodman, 2010). There are different types of innovation typologies such as technological vs administrative, process vs product, and radical vs incremental.

This study is focused on technological innovation, which is about the adaptation of new technology and the diffusion of an existing one. This investigation is concentrated on the ERP implementation in the organization that positively associated with the innovative organizational culture and superior firm performance. It is a technological innovation for the higher implementation of ERP

to automate the process and reduced the fewer of employees for better firm performance (Ruivo & Oliveira et al., 2012).

2.3 Degree of Implementation of Enterprise Resource Planning (DIERP):

ERP is the latest tool of corporation and management system, used to identifying, capturing, storing the flow of internal and external data information. It is powerful coordination among the micro (among the department) and macro environment (vendors and contractors) of the firm (Acer et al., 2017). According to Beheshti & Beheshti, (2010) explains that ERP is an integrative system that improves the efficiency and effectiveness in the operation of an organization. ERP systems deliver real-time data access through the integration of the resources (Klaus et al., 2000). ERP implementation is referred to as the whole system of planning, arrangement, and testing (Liang et al., 2007). ERP is a whole management system based on the business modules and activities and these are linked with the accounting, supply chain, financial, human resource, and customer relationship management, whole information is accessible to the entire organization (Beheshti., 2010).

ERP implementation is the major project that requires a huge cost and commitment to a bigger change in the firm. For higher ERP implementation plays a crucial role to enhance the productivity of the firm by providing exact and timely information. Therefore, there is a reduction in the cycle of product development, lower handling cost, enhanced operation due to the effective coordination among the channels. Thus customer service will boost (Tenkorang & Helo, 2011). Effective implementation of the ERP increases the profitability of the firm by the enhancement of the customer base (Chofreh & Goni, 2019). The profitability of the firm increases it belongs to the reduction in the per-unit cost. It enhances productivity and firm performance (AlHirz & Sajeev, 2013). The main aim of the implementation of the ERP is to optimal usage of the resources to get

a competitive advantage in the firm that leads to an increase in firm performance (Awa & Ukoha et al., 2016).

Those organizations that are efficaciously implemented the ERP system, leads to provide a better solution to the problem. Therefore, Employees become more capable to fulfill the task and efficiently take decision, it positively related to firm performance (Ruivo et al., 2012). ERP system enhances the operational performance by replacing the old system to a new one. ERP system depends upon the modules, every function has different modules (Aremu & shahzad et al., 2020). Implementation of the ERP is very costly and complicated. Therefore, it's a need training session are provided by a firm to their employees, it incurs a huge cost (Helm & Hall et al., 2003).

When the firms successfully implement the ERP system, it brings several benefits that belong to an increase in firm performance.

2.4 Benefits of Enterprise Resource Planning (BERP):

Benefits of enterprise resource planning are defined as the value which is attained by the several ways: integration of information system, data, and processes among several firms, their existing environment and external stakeholders; it plays a vital role in the optimization of business processes by using best practices, and fitting the business needs; by a transformation of data into valuable and reliable facts. It also sustenance business analysis and decision making (Davenport et al. 2002). ERP enhances the stable, consistent, competitive, and responsive business process (Genoulaz & Millet., 2006). ERP implementation brings the following benefits i.e. reduction in the lifecycle time, fastest generation of financial information, and development of the latest firm's strategies (Davenport & Brooks, 2004). ERP system provides different benefits after the implementation process such as reducing the life cycle, decrease the operational cost, quickly generation of financial information, efficiently support the new strategies, rapidly respond to the

customers and suppliers (Yang & fen Su, 2009). ERP implementation brings the benefits that are the reduction in the reporting lags (Kanellou & Spathis, 2012).

Benefits originate from ERP implementation are based on getting supplementary reliable reports, account statements, and improve accounting tasks (Velcu, 2007; Colmenares, 2009). After the implementation of ERP the system provides several benefits for the firm such as improvement in coordination within the firm, and elimination of reports and data entry chores (Gattiker & Goodhue, 2004). Benefits of ERP bring effective firm performance in an information perspective due to the availability and quality of information (Olhager & Selldin, 2003).

Several studies classified the types of ERP benefits. There are twenty-eight benefits categorized into five dimensions refers to the operational, managerial, strategical, IT, and infrastructure and organizational benefits (Zeng & Lu et al.,2012; Yang & Su, 2009).

2.4.1 Operational benefits:

Operational benefits are associated with automating cross-sectional processes (Yang & fen Su, 2009). The latest technology is used to boost production and plummeting cost by automating repetitive operations. Firms invested in new technologies to improve the streamlined process and automate the operations i.e. get faster the processes, substituting labor, and increase the operational capacity. ERP system plays a critical role to automate the processes and get several benefits such as a reduction in the cost, cycle time, and improve the quality, production, and customer services (Shang & Seddon, 2000). These benefits are the short term benefits linked with effective inventory management, customer service quality, improve production, and enhance the quality of the product (Byrd & Davidson, 2003). After the implementation of ERP's firms is more inclined towards the standardized, rebuild, and streamline the internal task to improve operations to enhance the firm performance.

2.4.2 Managerial benefits:

According to Yang & fen Su, (2009) explains that managerial benefits are originated efficiently manage the human resource, production, inventory, and resources. It also associated with the monitoring and control of the financial performance of a firm. In the perspective of products, customers, business lines, and geographical area. Managerial benefits are related to efficient resource management, effective decision-making process, and progress of the performance in several operating divisions of the firm (Shang & Seddon, 2000).

2.4.3 Strategical benefits:

Strategical benefits are focus on the benefits that are originated from systems capability to support business growth (Yang & fen Su, 2009). Strategical benefits are related to the ERP system. It also provides help to get a competitive edge in the market by following ways such as cost, differentiation, innovation, business growth, alliance, and external linkages (Wade & Hulland, 2004). Post-implementation of ERP Strategic benefits is enjoyed by the firm. With the help of the ERP firm may be capable of getting a huge return on financial activities (Yang & fen Su, 2009).

According to Bradford & florin, (2003) investigates that ERP system firm easily copes up with External environment, the firm has greater information regarding the partners, improve the supplier performance, and improve purchase order system. Strategic benefits lead to the firm's capability to match with the IT system of the other firms, and quickly respond towards the change. Due to the ERP system strategic benefits are related to the business growth, empowerment of the employees, and supply chain performance to improve firm performance.

2.4.4 IT infrastructure benefits:

IT infrastructure benefits are linked with a reduction in the cost to maintain the legacy systems (Yang & fen Su, 2009).

It is depending upon the IT resources of the firm. ERP system with their integrated and standard applications deliver reliable infrastructure improve business flexibility for future changes, abridged IT costs and enhance the competency for quick and economic implementation of new applications (Shang & Seddon, 2000).

2.4.5 Organizational Benefits:

It relates to the facilitation of business learning, empowerment of staff, higher employee morale, and satisfaction (Yang & fen Su, 2009).

Peters &Waterman, (1982) observations forty-three successful US corporations, heavily rely on ERP systems to deliver a "common vision" for communications or facilitating a flattened organizational structure and empowering users.

ERP system supports organizational learning behavior (Garvin, 1993; Baets and Venugopal, 1998, Argyris, 1992; Andreu, 1996). This system also enhances employee learning, empowering workers, and building common visions (Shang & Seddon, 2000).

2.5 Relationship between Innovative Organizational Culture (IOC) and firm performance (FP):

Several studies show the connotation between the innovative organizational culture (IOC) and firm performance (FP). According to Valancia & Jiménez et al., (2015) explains there is a positive relationship between Innovative organizational culture (IOC) and firm performance (FP) because it facilities the creative, freedom, and risk-taking behavior, and also encouraged the decentralized decision making that leads to high intrinsic motivation among employees.

According to the Chen et al., (2015) investigates both constructs shows a direct and significant relationship between IOC and FP, because IOC encouraged technological innovation, efficiently

improve the research and development processes and economic prosperity. Furthermore, IOC also boosts the outcomes of the firm in two ways i.e. hard and economic outcomes such as profitability, production, growth and competitive advantage, and soft and non-economic outcomes such as customer satisfaction, employee turnover, and stakeholder relationship. Therefore, it leads to superior firm performance.

According to Hogen & Coote, (2014) identified that both constructs elucidates there is a positive and significant relationship between IOC and FP because IOC associated with the enhancement of creativity, innovativeness, and encouragement of the risk-taking that plays a crucial role for superior FP. According to Artz et al., (2010) spot light about direct and significant link between IOC & firm performance, because IOC firms enjoyed higher profitability and growth and competitiveness that leads to the superior firm performance.

According to Tseng et al., (2008) analyzed the direct link between IOC and firm performance those firms has a higher degree of IOC it leads to the spur in the innovation processes and timely response towards the change that improves the firm performance.

While the organization having a strong culture, and workload pressure is problematic for innovations, because these organizations not respond towards the rapidly dynamic environment either internal and external and can't compete in the globalized era, therefore it negatively belongs to the firm performance (Wang & Zatzick, 2019).

IOC's has more individualistic than collectivistic culture, individualistic is more risk-takers and foster innovation, and creative ideas are generated, not for the sake of the group. Therefore, it shows an inverse and insignificant impact on firm performance (Waarts &Van Everdingen, 2005).

According to Khan et al., (2018) shows the insignificant influence of innovative organizational culture (IOC) on firm performance (FP), because IOC is not all time bring the higher firm performance because the absence of the few elements such as transformational leadership in Chinese industry, which plays an important role for enhancing efficient internal capabilities such as collaboration and teamwork among colleagues towards the implementation of new technological innovation in the firms. Conducive learning is associated transformational leadership. It also empowers the internal environment of the firm by adjusting the innovation with the firm's goals.

The IOC has an insignificant relationship with FP because in Asian countries there is an individualistic culture in theworkplace, the practices and effectiveness of collective culture aare tending to be weaker. Therefore, it leads to the lack of teamworkspirit and there are more stroked about their innovative ideas that relate to the hindering of the efficiency of the true group-oriented innovative ideas in the firm and bring inverse impact on the firm performance (Steenkamp et al., 1999).

H1: Innovative Organizational Culture (IOC) is positively related with Firm Performance (FP)

$H1_0$: Innovative organizational culture (IOC) is not positively related with Firm Performance (FP)

2.6 Relationship between Degree of implementation of Enterprise Resource Planning (DIERP) and Firm Performance (FP):

Several studies show the association between the degree of implementation of ERP and firm performance. When the higher degree of implementation of ERP leads to higher firm performance, because its reduction in the number of firm employees in the ratio of revenue and depends on the more reliable automation processes (Poston & Grabski).

According to HassabElnaby et al., (2012) suggest that there is a positive association with the higher degree of implementation of ERP and firm performance. A higher degree of implementation of ERP provides reliable information and bolsters a firm to scrutinize development. However, it provides access to client and market information that permits a firm to examine and gauge external opportunities for development to enhance FP.

According to Ilsoon Shin, (2006) investigated that there is a direct link between the degree of implementation of ERP and firm performance. A higher degree of implementation of ERP facilities the internal firm's efficiency by improving the inter-firm relationship to maintain customer relationship management and knowledge management to improve firm performance (FP).

According to Hunton et al., (2002) analyzed that there is a positive link between the higher degree of implementation of ERP and firm performance (FP). A higher degree of implementation of ERP belongs to the higher return on assets (ROA), return on sales (ROS), return on investments (ROI) that improve firm performance (FP).

According to Haberli Jr & Oliveira, (2016) identified that there is a direct relationship between the higher degree of implementation of ERP implementation and firm performance (FP). It enhances

productivity, improves internal and external connection collaboration, and business analysis. Therefore, the firm becomes more efficient and firm performance is superior.

According to Aremu et al., (2000) investigated a higher Degree of Implementation of ERP is positively related to the higher firm performance. It enhances communication processes by accessing wide information, improve organizational effectiveness, productivity, improve decision-making process, and get a competitive edge in the market place.

According to Al-Dhaafri et al, (2016) DIERP shows an insignificant impact on the FP, the reason behind this result reflects that the entrepreneurial culture is absent, and it incurs higher cost to diminishes the firm performance.

According to Poston & Grabski, (2000) shows an inverse and insignificant association between the DIERP and FP, a higher degree of implementation of ERP incurs huge costs due to the higher cost of implementation difficulties and higher recruitment of ERP engineers and knowledge.

According to Wieder et al., (2006) illustrates the inverse and insignificant relationship between DIERP and FP, reason behind is the learning curve, those organizations having short and medium-term ERP package history is more successful, it enhances production in the short and medium-term. While those firms having a large history of the ERP's and failed to achieve overall firm performance. The learning curve shows that companies take huge time to recover the aftershocks of implementation of ERP's package because mostly the employees are not comfortable using the package in long term and become frustrated in the long-term training leads to reduced firm performance.

According to Rajan & Baral, (2015) shows the insignificant relationship between the DIERP and FP. The ERP package is much different from the other technological innovation due to the socio-

technical challenges due to the higher level of the complexity involved in the implementation process for both managers and end-users of the firm.

H2: Degree of implantation of enterprise resource planning (DIERP) is positively related with firm performance (FP).

$H2_0$: Degree of implantation of enterprise resource planning (DIERP) is not positively related with firm performance (FP).

2.7 Relationship between the benefits of Enterprise Resource Planning (BERP) and firm performance (FP):

Benefits of Enterprise resource planning (BERP) and firm performance (FP) are positively linked with each other. It improves horizontal integration (i.e. the components of the value chain) and vertical integration (i.e. the supporting functions). It also automates the business processes and permits process changes. Hence, it enhances the firm's operational performance by following ways i.e. cycle time reduction, customer service improvements, quality improvements, and throughput increases. (Davenport, 1998; Shang and Seddon, 2000; Wieder and Davis, 2003).

According to Yang & Su, (2009) determined that there is a positive association among benefits of enterprise resource planning (BERP) i.e. operational benefits and firm performance (FP), because it ameliorates daily operations. It also upgrades inventory control, improved cash management, and decrease operating costs. Additionally, it prompts growth in production, information, and customer service quality. Both are positively interconnected because managerial benefits enhanced customer service, improved management system, reduction in the cost, and also have enhanced information flow i.e. cycle time reduction. Moreover, it also revamps customer service by timely respond to the needs and wants of the customers that increase the firm performance. It also shows a direct relationship between benefits of enterprise resource planning (BERP) and firm

performance (FP) i.e. strategic benefit makes the efficient internal and external linkages to improves the firm's ability for efficient decision-making process.

According to Esteves, (2009) investigated that benefits of ERP and firm performance has significant relationship among both of them, because it enhances the progress in financial processes, and management, by making efficient management of firm's operations and optimal usage of resources. According to Shang & Seddon, (2002) indicate that Enterprise resource planning (BERP) improves the firm performance (FP), by enabling the firm to get more accurate and timely information.

According to Horvath, (2001) examined a positive association between the benefits of enterprise resource planning (BERP) and firm performance (FP), because it cuts down the inventory and administrative costs and improves the approachability to market demands. According to Suwardy et al., (2003) investigated that there is a positive relationship between the benefits of enterprise resource planning (ERP) and firm performance (FP). It also plays an important role to reduce the buffer inventory and lead times and improve the efficiency and flexibility of the firm.

According to Matolcsy et al., (2005) indicates that there is a significant relationship between the benefits of enterprise resource planning (BERP) and firm performance (FP). It improves the firm's efficiency in the operations by reducing the inventory turnover and fixed assets turn over. It also improves efficiencies in marketing, sales, and distribution as measured by accounts payable (AP) management. It also shows the positive association among benefits of enterprise resource planning (BERP) and firm performance (FP), because it leads to upgrade the inbound logistics by diminishing the cost of raw material, personnel costs in accounts payable, purchasing and inventory management.

According to Sari et al., (2012) explains that there is an explicit linked among both construct firms may enjoy IT infrastructure and organizational benefits including, improved customer satisfaction, enhanced vendor performance, enlarged flexibility, improved business innovations and adopt radical changes, efficient communication between employees management, enhance employee morale, reduced quality costs, improved resource utility, improved information accuracy, and decision-making capability.

According to Esteves, (2009), it shows a positive connection between both of them, because it enhances the progress in financial processes, and management, by making efficient management of firm's operations and optimal usage of resources. According to Shang & Seddon., (2002) indicates that BERP improves the FP by enabling the firm to get more accurate and timely information.

According to Rouhani & Mehri, (2018) shows that BERP and FP has an insignificant relationship between both of them, due to the lack of learning and training sessions

H3: Benefits of Enterprise Resource Planning is not positively related with firm performance.

$H3_0$: Benefits of Enterprise Resource Planning is not positively related with firm performance.

2.8 Relationship Between the Innovative Organizational Culture (IOC) and Degree of Implementation of Enterprise Resource Planning (DIERP):

Different studies show the positive link between the innovative organizational culture (IOC) and the degree of implementation of Enterprise resource planning (DIERP). According to Gyampah & Salam, (2003) shows a positive association between IOC and the degree of implementation of

ERP. Due to the higher level of IOC is linked with the higher level of degree of implementation of ERP, because IOC is more inclined towards the adaptability, and implementation of new technologies.

According to Hsu et al., (2008) explains that Innovative organizational culture is highly correlated with the degree of implementation of ERP, because IOC speeds up the degree of implementation of ERP processes, and ensure that the training session provided to the end-user. Therefore, the degree of implementation of ERP would be high.

According to Yusuf et al., (2004) investigated that IOC plays a crucial effort to adopt information technology (IT) and systems such as to enhance the degree of implementation of ERP to support business integration and help to make effective and efficient decision-making process.

According to Damanpour & Schneider, (2009) suggested that IOC consists of two innovative processes i.e. adaptation and implementation of ERP. Following factors in IOC are more active such as supportive management principles, and innovative techniques. Therefore, it shows a positive association between the IOC and the degree of implementation of ERP in the firm.

According to Ruivo et al., (2012) investigated that IOC and degree of implementation have a direct relationship between both of them. IOC enhances the learning opportunities and provide training sessions to learn the new technologies i.e. ERP. To cope up with the problems, enhance knowledge, and acquire new skills to accomplish the goals and make an effective decision-making process.

According to Rouyendegh et al., (2014) analyzed that IOC and degree of implementation of ERP show the positive connection between them because in IOC mangers set the objectives and pay proper heeds for the high implantation of ERP.

According to Chou et al., (2014) explains that most of the firms, don't get the expected goals after the implementation of ERP. Due to the improper use of the system. According to Gajic et al., (2014) explains that there is a reciprocal relationship between IOC and degree of implementation of ERP. In most cases, implementation of ERP does not achieve business process control, cut down its cost, increase its revenue. Therefor firm should create ease of use to implement it and get the benefit.

According to Gajic et al., (2014) it explains that there is a reciprocal relationship between IOC and degree of implementation of ERP. In most cases, IOC does not achieve business process control, cut down its cost, increase its revenue due to a higher degree of implementation of ERP. Therefore, a firm should create ease of use to implement it and get the benefit.

This study also examined that there is an insignificant relationship between the higher DIERP and FP most of the firms don't get the expected goals post-implementation of ERP. Due to the inappropriate use of the system. Firms should hire good consultants to get efficient opinions (Chou et al., 2014). This study also identified the negative relationship between both of them. IOC has an insignificant relationship between the DIERP because of the lack of the transformational leadership and non-availability of the top management support (Khan et al., 2018)

H4: Innovative Organizational Culture (IOC) is positively related to the Degree of Implementation of Enterprise Resource Planning (DIERP).

$H4_0$: Innovative Organizational Culture (IOC) is not positively related to the Degree of Implementation of Enterprise Resource Planning (DIERP).

2.9 Relationship between the Degree of implementation of Enterprise resource planning (DIERP) and benefits of Enterprise resource planning (BERP):

According to Gattiker & Goodhue, (2005) explores that the Higher degree of implementation of enterprise resource planning (DIERP) positively related with the benefits of enterprise resource planning (BERP), because it improves the flow of information across departments. Moreover, the integration and standardization of the business processes smoothen organizational jobs such as payroll and accounts payable. Additionally, higher implementation leads to higher benefits get the firms to enhance the capacity and reduced the cost of implementation and maintenance. Likewise, it also shifts the ineffective management to efficient business processes.

According to Seddon et al., (2003) investigates that a higher degree of implementation is positively associated with the benefits of enterprise resource planning (BERP) i.e. Operational Benefits achieved by firms by reducing cost, cycle time enhance the productivity and customer service. According to Sari et al., (2012) examine that there is a positive relationship between a higher degree of implementation of enterprise resource planning (DIERP) and benefits of enterprise resource planning (BERP) i.e. higher managerial benefits achieved by firm to get better resource management, planning, amended decision making and enhance performance.

According to Eckartz et al., (2010) analyses that degree of implementation is directly linked with higher strategic benefits attain by the firm has high business growth, alliance, innovation, cost, differentiation, and external linkages. According to Annamalai & Ramayah, (2011) reveals that degree of implementation of enterprise resource planning (DIERP) and benefits of enterprise resource planning(BERP) i.e. IT infrastructure benefits are positively associated both of them create and maintain business flexibility, diminishes IT cost and the marginal cost of business units' IT, and better capability for quick implementation of new applications, and organizational benefits

support the radical changes and innovations smoothing employee learning and morale, and empowering workers, and building common visions.

According to Law & Nagai, (2007) explains that when the degree of implementation of enterprise resource planning (DIERP) is high it is positively associated with benefits of enterprise resource planning (BERP), i.e. organizational benefits because it improves the sales, profitability, returns, expansion of market shares and customer satisfaction relative to the competitors and employee empowerment.

According to Gajic et al., (2014) investigated that Higher DIERP does not always lead to the higher BERP due to inefficient use of the technology and lack of the perceived ease of use about the particular package.

H5: Degree of Implementation of Enterprise Resource Planning (DIERP) is positively associated with the benefits of Enterprise resource planning (BERP).

$H5_0$: Degree of implementation of Enterprise resource planning (DIERP) is not positively associated with the benefits of Enterprise resource planning (BERP).

2.10 Relationship between Innovative Organizational Culture (IOC) and Benefits of Enterprise Resource Planning (BERP) is mediated by The Degree of Implementation of Enterprise Resource Planning (DIERP):

According to Bendak, (2020) examine that there is a positive relationship between innovative organizational culture and benefits of enterprise resource planning due to the higher degree of implementation of the enterprise resource planning because it leads to build and encourage the innovation and accept and the radical changes to enhance firm performance.

According to Martins & Terblanche, (2003) explains that Innovative organizational culture (IOC) facilities the innovation, creativity, and change that plays a crucial role to enhance benefits of enterprise resource i.e. accelerating new knowledge, idea generation, and effective communication that stimulates higher degree of implementation of the enterprise resource planning.

According to Matolcsy et al., (2005) indicates IOC and BERP are mediated DIERP because when the firm has the innovative culture it encourages the new ideas and technologies that leads to higher benefits i.e. boost the performance of the employees, make efficient business process improved decision-making processes, and cut down the expenses.

According to Stratman, (2007) analyzed that when the firm has high IOC it leads to higher BERP i.e. due to the higher DIERP, decrease operational uncertainty by having proper coordination, and efficient flow of information, have proper accessibility of the valid firm's data. Therefore, it empowers better operational planning and decision support.

A higher degree of implementation of enterprise resource planning (DIERP) not mediated the relationship between the IOC and BERP, due to the lack of ease of use of the ERP's package and improper use and extended training leads to the lower BERP (Gajic et al., 2014; Chou et al., 2014)

H6: Innovative organizational culture (IOC) and benefits of enterprise resource planning (BERP) is mediated by degree of implementation of enterprise resource planning (DIERP)

$H6_0$: Innovative organizational culture (IOC) and benefits of (BERP) are mediated by degree of implementation of enterprise resource planning (DIERP).

2.11 Relationship between Degree of Implementation of Enterprise Resource Planning (DIERP) and firm performance (FP) is mediated by the Benefits of Enterprise Resource Planning (BERP):

According to Stratman, (2007) investigates that higher DIERP is linked with higher FP mediated BERP, because it allows managers to enhance firm performance by aligning the structure and goals of firms to get the better control on expenses, expand the efficiency of supply chain and bring value to the customer by improved understanding the needs and wants of the customer. It also delivered better customer satisfaction through better speed, accuracy, and responsiveness to customer requests, and get a higher return on investments.

According to Menon, (2019) conducted a study in Canada and analyzed that when there is higher DIERP leads to higher FP, due to the higher benefits of ERP. Therefore, firms have fast and efficient business processes, standardized reporting due to higher access to data. It directly linked with the higher the return on assets (ROI), returns on sales (ROA), return on investments (ROI).

According to Beheshti & Beheshti, (2010) examined that higher DIERP enhanced the FP due to higher BERP. It plays an important role to improve the productivity in two ways. Operational efficiency concerning an end-user or customer satisfaction. It permits the firm to condense the transaction costs of the business and improve its productivity, profitability, and customer satisfaction.

According to Poston & Grabski, (2000) examine that higher DIERP boosts the FP, due to the presence of higher BERP. Consequently, it makes the higher coordination, diminishes the cost among subunits of the firm. Hence, it also improves decision making by providing accurate and timely enterprise-wide information.

According to Wieder et al., (2006) Investigated that higher DIERP leads to FP, due to the higher BERP, because there is a reduction in the number of employees as a percentage of revenue the year after ERP implementation. However, successful implementation firms have lower costs due to automation of the process. It's related to a reduction in number of employees. Therefore, firms having fewer employees supporting more revenue.

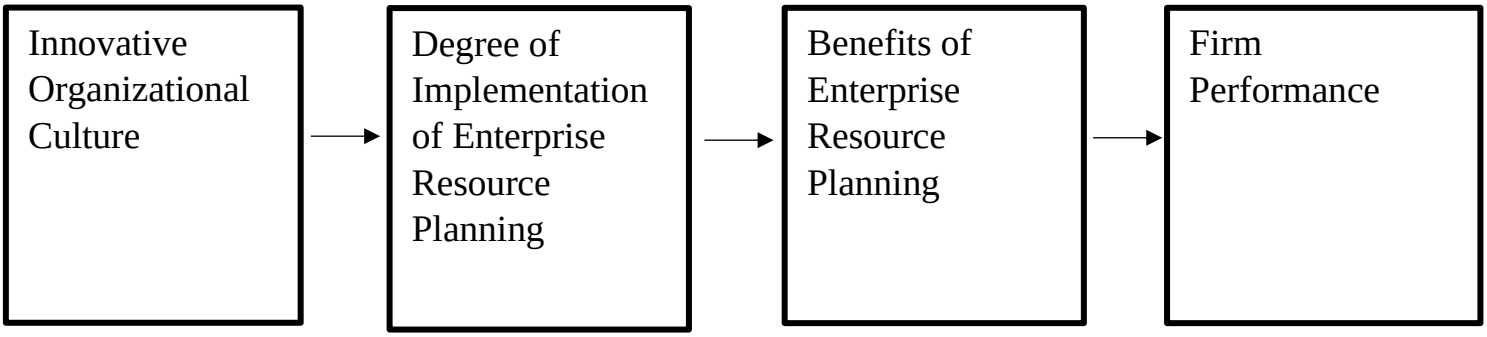
While Poston & Grabski., (2000) show that there is no mediation exists among the constructs higher degree of implementation of ERP incurs huge cost due to higher cost of implementation difficulties and higher recruitment of ERP engineers and knowledge.

H7: Degree of Implementation of Enterprise resource planning (DIERP) and Firm Performance(FP) is mediated by the Benefits of Enterprise Resource Planning (BERP).

$H7_0$: Degree of Implementation of ERP (DIERP) and Firm Performance(FP) is not mediated by the Benefits of Enterprise Resource Planning (BERP).

2.12 Theoretical framework:

Figure 1 Research Model



Firm performance is an endogenous construct for innovative organizational culture, and its processes i.e. Degree of Implementation of Enterprise Resource Planning (DIERP), and Benefits of Enterprise Resource Planning (BERP).

Hypothesis:

H1: Innovative Organizational Culture (IOC) is positively related to Firm Performance (FP).

H2: Degree of Implementation of Enterprise Resource Planning (DIERP) is positively related with Firm Performance (FP).

H3: Benefits of Enterprise Resource Planning (BERP) is positively related with Firm Performance (FP).

H4: Innovative Organizational Culture (IOC) is positively related to the Degree of Implementation of Enterprise Resource Planning (DIERP).

H5: Degree of Implementation of Enterprise Resource Planning (DIERP) is positively related to the Benefits of Enterprise Resource Planning (BERP).

H6: Degree of Implementation of (DIERP) mediates the relationship between Innovative Organizational Culture (IOC) and the Benefits of Enterprise Resource Planning (BERP).

H7: Benefits of Enterprise Resource Planning (BERP) mediates the relationship between Degree of Implementation of Enterprise Resource Planning (DIERP) and Firm performance (FP).

2.13 Underpinning Theory:

There is an extensive literature on firm performance. In this study, Firm performance is based on the Resource-Based View (RBV). According to Resource-based view, all the resources of the firm i.e. Assets, capabilities, knowledge, firm processes, firm's attributes, and information that is owned and controlled by the firm to made and implement the strategies to enhance the effectiveness and efficiency of the firm's performance (Lazăr, 2016). According to Hwang & Min, (2013) explains that for gaining a competitive edge in the market against the competitor's firms should create value by using their resources investing huge capital on adopting, implementing, encourage and foster the innovative organizational culture (IOC). It facilitates the higher degree of Implementation of enterprise resource planning, and diffuse the incompetent existing technology, to get the higher benefits of ERP's package all are positively linked to the higher firm performance.

2.14 Summary:

Firm performance is a bag word that comprised of several factors such as efficiency, productivity, profitability, competitiveness, and growth. In this study, firm performance is measured by the operational performance and financial performance. Operational performance is measured by employee satisfaction, customer satisfaction, and supplier satisfaction. While the financial performance is measured by the Return on Assets (ROA), Return on Sales (ROS), and Return on Investment (ROI).

In this current study, the relationship between the exogenous and endogenous constructs is discussed. Innovative organizational culture (IOC) and its process such as degree of implementation of enterprise resource planning (DIERP), and benefits of enterprise resource planning (BERP) to improve firm performance (FP). The degree of implementation of enterprise resource planning (DIERP) mediates the relationship between Innovative organizational culture (IOC) and the benefits of enterprise resource planning (BERP). Whereas, the benefits of enterprise resource planning (BERP) mediates the relationship between the degree of implementation of enterprise resource planning (DIERP) and firm performance (FP).

Innovative organizational culture relates to the infrastructure that supports those behaviors which are involved in the innovative process and commitment towards the innovation. (Vera & Crossan, 2009). IOC considers being a more creative, risk-taking, openness to new ideas, and having an entrepreneurial mindset (Oskarsson & Gudlaugsson, 2014). It plays a crucial role in the leading edge in the market to enhance firm performance. DIERP indicates at which extent the firm is using ERP's package in the firm. Higher DIERP acquired higher realized benefits gets the firm. These are divided into five dimensions i.e. operational, managerial, strategical, IT infrastructure, and organizational benefits.

According to Poston & Grabski, (2000) examine that higher DIERP boosts the FP, due to the presence of higher BERP. Consequently, it makes the higher coordination, diminishes the cost among subunits of the firm. Hence, it also improves decision making by providing accurate and timely enterprise extensive information.

3 CHAPTER 03

METHODOLOGY

This chapter presents the methodology techniques that are utilizing in this study. It also contains research design, sampling, data collection techniques, and data analysis methods, etc. It carries out quantitative research. To define and explain the "Relationship between Innovative organizational culture (IOC) and firm performance (FP) Mediating role of Degree of implementation of Enterprise resource planning (DIERP) and Benefits of Enterprise Resource Planning (BERP)". Moreover, the Instruments are deliberately picked to guarantee reliability and validity to provide accurate results of the findings of the examination.

3.1 Research Design:

It is an action plan by a researcher. According to Akhtar, (2016) elaborate, it is a conceptual blueprint, and outline contained by which the research is conducted. It also depends upon the data collection, measurement, and analysis. For designing research, it is necessary to answer the research question reasonably. The expressive survey design is used. According to Mugenda & Mugenda, (1999) this technique is helpful to collect data from the geographical area and from different subgroups of respondents that are required for this study.

3.2 Research Philosophy:

According to Rehman & Alharthi, (2016) examined that the current study is based on the positivism philosophy. It based on the quantitative data, which is used to answer research questions. A survey is based on the closed-ended questionnaires. Numeric data is generated through this method. Positivist methodology put forward the questions into the hypothesis, to explain the correlation phenomena among exogenous and endogenous constructs. Therefore, the

current study explains the Relationship Between Innovative Organizational Culture (IOC) and Firm Performance (FP) Mediating Role of Degree of Implementation of Enterprise Resource Planning (DIERP) and Benefits of Enterprise Resource Planning (BERP).

3.3 Research Paradigm:

The study is based on the "Epistemology" paradigm, deals with some net shells. The current study is subjective in nature. It deals with the knowledge i.e. what is known, and the urge of the researcher to be known. It also depends on facts and figures (Ferrier, 1850). The previous literature, and information are there, but the relationship is underexplored yet.

3.4 Research Approach:

The current study is deductive. It is a correlated study to examines the Relationship Between Innovative Organizational Culture (IOC) and Firm Performance (FP) Mediating Role of Degree of Implementation of Enterprise Resource Planning (DIERP) and Benefits of Enterprise Resource Planning (BERP).

3.5 Research Methodology:

The study depends on the quantitative research approach. Primary data is collected with the help of a close-ended questionnaire, to overcome the research biasness. Furthermore, it moves around the theory and tests the theory. Data is analyzed with the help of a non-parametric tool.

3.6 Time Horizon:

The data is cross-sectional. It's collected over an estimated period of two to three months (2-3M), to complete the current study within a specified period.

3.7 Questionnaire Designed:

Data is collected with the help of a questionnaire from the respondents. It's adapted from the prior study; it does not belong to the single study. Items are selected from different studies, to answer the research questions. Moreover, to analyses the Relationship Between Innovative Organizational Culture (IOC) and Firm Performance (FP) Mediating Role of Degree of Implementation of Enterprise Resource Planning (DIERP) and Benefits of Enterprise Resource Planning (BERP). Therefore, the questionnaire is divided into two parts: One is comprised of dummy variables such as (Nature of firm, Experience with ERP, Number of firm's employees, and Designation of employees). According to SMEDA[1] firm size is determined on the behalf of the number of firm's employees, and the brackets are formed. The first bracket consist of 1-50 number of employees in the firm comes under the umbrella of small firms, the second consist of 51-100 number of employees fall under the bracket of a medium-size firm, and third contains more than 100 number of employees of the firm comes under the umbrella of large size firms. Conspicuously, All the constructs are measured on the five-points Likert scale ranging from (Strongly Disagree=1 to Strongly Agree=5).

3.8 Sampling Design:

3.8.1 Unit of Analysis:

According to Sekaran & Bougie, (2016) investigated the unit of analysis is a combination of those sources, from where the data or information is collected. It can be an individual, firm, company,

[1] Small and Medium Enterprises Development Authority is an autonomous institution of the Government of Pakistan under Ministry of Industries and Production. SMEDA was established in October 1998 for encouraging and facilitating the development and growth of small and medium enterprises in the country.

and industry. Therefore, the Unit of analysis of the current study are the Medium to higher level managers from manufacturing and services firms using ERP's package in their operations.

3.8.2 Target Population:

According to Cox, (2008) investigated that the target population is the complete set of units. It defines those units for which the findings of the survey are meant to generalize. Therefore, it specifically defined the geographical and temporal characteristics of the target population. Thus, the target population of the current study are the higher to medium level managers from manufacturing and services firms using ERP's package in their operations from all over Pakistan. According to Abacus [2]the total population that is firms using ERP's package in their operations are six hundred (600) firms including manufacturing and services from all over Pakistan.

3.8.3 Sample:

Polit & Hungler, (1999) indicate that the Sample should represent the whole population. It is the subset of the population. For increasing the efficiency of the data and reducing the time of analysis. It is important to make the sample of the population. A sample is drawn from the target population, Data is collected from 234 Medium to higher level managers including manufacturing and services firms using ERP's package in their operations from six big cities of Pakistan such as Rawalpindi, Islamabad, Peshawar, Lahore, Karachi and Quetta.

[2] Abacus Consulting Technology (Pvt) Ltd (or "Abacus") is a leading professional services firm based out of Pakistan, providing management consulting, technology and outsourcing services to a wide range of clientele in the region. Abacus has affiliations and strategic alliances with leading global brands and service providers (including SAP, Mercer, Sybase (a SAP company), Fragomen, Oracle and ExelSys).Abacus has specialty in Strategy Consulting and Research, Enterprise Resource Planning (ERP) Solutions, Business Process Outsourcing , Human Capital Solutions, Human Resource Outsourcing, Public Sector Development, Financial Advisory Services, Customer Experience Management, Cloud Adoption and Excellence, Digital Transformation, Utilities Transformation, and Big Data Solutions
https://www.psx.com.pk/psx/resources-and-tools/listings/listed-companies

3.8.4 Sampling Technique:

The study is based on the purposive sampling technique to choose the respondents of the study. Its relatively less time taking. It's a type of non-probability sampling technique. Data is collected from the top and middle managers using Enterprise Resource Planning (ERP) from six big cities of Pakistan.

3.8.5 Sample size:

After estimating the population size 600, the sample size is two hundred and thirty-nine (239) which is calculated by using the Krejice & Morgan, (1970) sample size table. Therefore, two hundred and thirty-nine (239) respondents are selected as a sample, from both manufacturing and services firms using ERP in their operations. The sample size comprised of 112 manufacturing firms. Manufacturing companies are comprised of textile industry, petroleum industry, glass industry, steel industry, sugar industries, food and beverages, automobile industry, cotton industry, paint industry, plastic and leather industry. While 127 are the services firms comprised of Investment, banking and finance, Transportation, telecommunication and media, Information systems and technology, real estate, Health and social services, Consulting industry, Marketing industry, Telecommunication, Pharmaceutical industry, Educational industry, and Distribution industry from six big cities of Pakistan. Respondents are personally contacted on LinkedIn[3]. The Most famous professional application, and requested by professionals to give their kind responses to the study.

[3] https://pk.linkedin.com/

3.8.6 Data Collection strategy:

An online survey is conducted and questionnaires are distributed to the professionals from the well-known platform (LinkedIn)(employees) who belong to the hierarchy of top and middle management of the firm. An online survey is an appropriate technique to collect data from the respective population. It's cost and time effective. The primary data is collected from firms using the Enterprise Resource Planning (ERP) package from six big cities of Pakistan.

3.8.7 Data Collection Technique:

Quantitative data are usually gathered through the questionnaire. The questionnaire consists of questions, which are in a written and organized form. It is an inexpensive and most frequently used technique for data collection. The researcher distributed five hundred (500) online questionnaires but only returned two hundred and seventy-five (275), and thirty-six (36) were discarded due to incomplete response. 239 questionnaires were used for analysis, but removed 5 as an outlier. Therefore the 234 questionnaires are used for analysis.

3.9 Response:

Data is collected with the help of the adapted questionnaire, respondents are belonging to both manufacturing and services firm having the expertise of enterprise resource planning (ERP), from top and middle management of the concerned firms. The study is collected the following questionnaires from the both manufacturing and services firms. The response rate of services industries is as follow: Investment, banking and finance=20, Transportation, telecommunication and media= 10, Information systems and technology=50, Real Estate=5 Health and social services=10 Consulting industry= 10, Marketing industry=10, Pharmaceutical industry=9, Educational industry=2 and Distribution industry=5. While the 112 manufacturing industries comprised of textile industry=30, petroleum industry= 20, glass industry=5 steel industry=20,

sugar industries=5, food and beverages=6, Automobile industry=5, cotton industry= 10, paint industry= 5, plastic and leather industry=6.

3.10 Operationalization of variables:

Innovative organizational culture (IOC) it's an exogenous construct for a degree of implementation of enterprise resource planning (DIERP), (DIERP) is an endogenous construct for (IOC), and (IOC) is an exogenous construct (DIERP), while BERP is an endogenous variable for (DIERP), and exogenous construct for FP, notably FP is an endogenous construct for BERP.

3.10.1 Innovative organizational culture (IOC):

Innovative organizational culture (IOC) consists of six items adopted from the study "The relationship between benefits of ERP systems implementation and its impacts on firm performance of SCM" Uzkurt, C., Kumar, R., Kimzan, H. S., & Eminoğlu, G. (2013). Role of innovation in the relationship between organizational culture and firm performance. *European Journal of innovation management*.

3.10.2 Degree of implementation of enterprise resource planning (DIERP):

Degree of implementation of enterprise resource planning (DIERP) is measured by five questions, on five-point Likert scale and the questionnaire adapted to identify the degree of implementation of enterprise resource planning (ERP) package and picked three items from Pre-implementation attitudes and organizational readiness for implementing an Enterprise Resource Planning system hang, M. K., Cheung, W., Cheng, C. H., & Yeung, J. H. (2008). Understanding ERP system adoption from the user's perspective. *International Journal of production economics, 113*(2), 928-942, and reaming two are adapted from "Pre-implementation attitudes and organizational readiness for implementing an Enterprise Resource Planning system" Abdinnour-Helm, S., Lengnick-Hall, M. L., & Lengnick-Hall, C. A. (2003). Pre-implementation attitudes and organizational readiness

for implementing an enterprise resource planning system. *European journal of operational research*, *146*(2), 258-273.

3.10.3 Benefits of enterprise resource planning (BERP):

The benefits of enterprise resource planning are measured by ten adapted questions Dwivedi, Y. K., Papazafeiropoulo, A., & Esteves, J. (2009). A benefits realization road-map framework for ERP usage in small and medium-sized enterprises. *Journal of Enterprise Information Management*, Staehr, L. (2010). Understanding the role of managerial agency in achieving business benefits from ERP systems. *Information systems journal*, *20*(3), 213-238. Assessing the benefits of using an enterprise system in accounting information and management. Spathis, C., & Ananiadis, J. (2005). Assessing the benefits of using an enterprise system in accounting information and management. *Journal of Enterprise Information Management*. Enterprise resource planning (ERP) benefits survey of Indian manufacturing firms. An empirical analysis of SAP versus Oracle package Annamalai, C., & Ramayah, T. (2011). Enterprise resource planning (ERP) benefits survey of Indian manufacturing firms. *Business Process Management Journal*.

3.10.4 Firm performance (FP):

Firm performance is consisting of nine questions and it is adopted by Aydiner, A. S., Tatoglu, E., Bayraktar, E., Zaim, S., & Delen, D. (2019). Business analytics and firm performance: The mediating role of business process performance. *Journal of business research*, *96*, 228-237.

3.11 Method of analysis:

SEM (structural equation modeling) technique of SMART PLS (Version 3) used in this research. According to Hair et al., (2017) investigated that this technique is used to examine the structural relationships. The SEM technique is a combination of multiple regression analysis, and factor

analysis used to analyze the structural relationship between exogenous constructs and endogenous construct.

3.12 Data Analysis:

According to Ringle et al., (2015) explains that Smart PLS (Version 3) is used for correlation and regression analysis regarding exogenous and endogenous constructs. The current study is used PLS, to makes sure the certainty by directly assessing the potential construct. According to Wetzels et al., (2009) elaborated that Smart PLS is also determined a flexible residual covariance structure. According to Hair et al., (2017) examined that smart PLS robust prediction of hierarchical models, for this applied 1000 replicated nonparametric bootstraps and a path weighting ecosystem for an internal approximation to analyze the level of significance.

3.13 Summary:

The current study is based on the positivism philosophy; and “Epistemology” paradigm. The present study is quantitative, deductive, and subjective in nature. Primary data is collected with the help of a close-ended questionnaire, and it is adapted from several previous researches. It’s a correlated study. Purposive sampling technique is used to select the sample. The target population of the current are the manufacturing and services firms using ERP’s in their operations. The unit of analysis of the current study is the top and middle managers of the manufacturing and services firms of Pakistan using Enterprise resource planning (ERP) in their operations. A sample is drawn from the target population of manufacturing and services firms are using ERP packages in their operations not beyond it. Data is collected from the top and middle managers using ERP’s in their firms. The actual sample size estimated by the Morgan table. After estimating the population size is 600, the sample size is 234. Respondents are personally contacted on LinkedIn most famous social media professional application. Data is cross-sectional. It’s collected over an estimated period of two to three months (2-3M). All the constructs are measured on the five-points Likert scale ranging from (Strongly Disagree=1 to Strongly Agree=5). SEM (structural equation modeling) technique of SMART PLS (Version 3) used in this research to test the hypothesis.

4 Chapter 04

Results and Analysis

In this chapter, the study analyzes the Relationship Between Innovative Organizational Culture (IOC) and Firm Performance (FP) "Mediating Role of Degree of Implementation of Enterprise Resource Planning (DIIERP), and Benefits of Enterprise Resource Planning (BEERP) in Pakistan". The main purpose of this chapter to fulfill the objectives of the study. For this purpose, primary data is collected with the help of the questionnaire from the respondents. For that reason, multiple linear regression analysis is performed, and the results of the study are analyzed with the help of the statistical package (SPSS 18) and Smart PLS (version 3) to test the hypothesis. The chapter also covers the Demographic factors, Descriptive statistics, Reliability of scales, Correlation among constructs, Assumptions of Regression, Multiple linear regression, and Mediation analysis is discussed to conclude this extensive exercise.

4.1 Demographic Analysis:

Table 4.1: Results of Demographic Analysis

Constructs	Frequency	Percentage
Nature of firm		
Manufacturing	112	48%
Services	122	52%
Experience with ERP		
Less than 1 year	18	8%
1- 2 years	34	15%
2–3 years	33	14%

3-4 years	40	17%
4–5 years	17	7%
5–6 years	19	8%
More than 6 years	73	31%
No. of firm's employees		
1-50	41	17.5%
51-100	20	8.5%
More than 100	173	74%
Designation		
Top management	74	32%
Middle management	160	68%

Table 4.1 demonstrates the frequency distribution of the data. Data is collected from 239 firms of Pakistan using ERP's package in their operations, out of which 52% of respondents belong to the services firms, while the reaming 48% belong to the manufacturing firms. Table 4.1, also elucidates that 8% respondents are belonging to those firms having Less than 1 year of ERP's experience, 15% respondents come under the bracket of 1- 2 years of ERP's experience, 14% respondents are associated with those firm using ERP's since 2–3 years, 17% respondents come under the umbrella of 3-4 years of ERP's experience, 8% respondents are from those firm using ERP's in their operation since 5–6 years, while 31% respondents belong to the firms having more than 6 years of ERP's experience in their operations.

According to the SMEDA, following brackets of a firm's size is determined based on a number of firm's employees. For this, 17.5% respondents are lying in the bracket of 1-50 number of

employees of the firm that comes under the umbrella of small size firms; 8.5% falls under the bracket of 51-100 number of employees this slab comes in medium-size firms; while 74% respondents are lying in the slab of more than 100 employees of a firm that comes under the slab of large size firms. Finally, the study is collected data from the top and middle management, thus 32% of respondents are belonging from the top management of the firm using ERP's, while 68% of respondents are associated with middle management.

Firms using ERP's package in their operations to attain their goals, and get the competitive edge in the market. It indicates that services firms of Pakistan, have a Higher Degree of Implementation of ERP's package in their operations having more than 6 years of experience with ERP's, these services firms are large enterprises with more than 100 employees in their firms. Thus, middle management of these services firms is more inclined towards the usage of the ERP's package in their firm's operations.

4.2 Exploratory Factor Analysis (EFA):

Table 4.2: Exploratory Factor Analysis (EFA)

Components	Sum of squared % of the variance	Loadings Cumulative %
1	37.288	37.288
2	28.123	65.411
3	25.322	90.733
4	9.267	100.00

According to Hayton, (2004) investigated that EFA reduces the number of factors. This study doesn't have much number of factors, but the study checks the EFA test based on Eigen values which are by default taken as 1. Then the study runs the EFA based on a fixed factor and taken as

three factors out of 4. In this given table 4.2, the 1st factor explaining 37.28% of the variance, whereas the 2nd factor is explaining 28.12% of variance individually. Cumulatively first two factors explaining 65.41% of the variance. The third factor is explaining 25.32% variance individually, whereas cumulatively these three factors explaining 90.73% variance of the model. When the researcher adds the 4th factor, then individually it explains 9.267% variation and cumulatively 100% variation of the model.

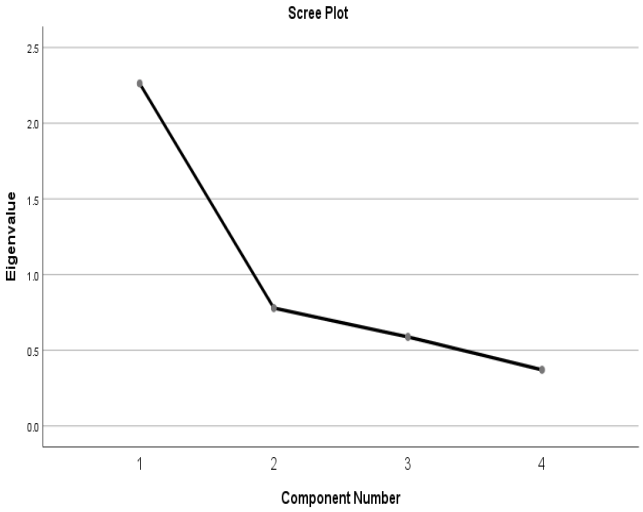
4.3 Sample size Adequacy:

Table 4.3: Results of Sample Size Adequacy

KMO and Bartlett test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.698
Sig	.000

According to this fourth assumption of multiple regression analysis, adequacy of the sample size is being checked with the help of KMO and Bartlett test. According to Kun et al., (2017) elaborates that when the value of KMO and Bartlett test is more than .05. Therefore, it shows that there is an adequate sample size. In this current study, the value of KMO and Bartlett test is .698, while the p-value is in an acceptable range, p=.000 it explains the adequacy of the sample size. The sample size of the study is 234.



Scree plot produces from the exploratory factor analysis (EFA) is drawn above; it shows three constructs are explaining more than 90.7 % of the variation of model. In the current study, this scree plot shows these three factors above .5 Eigenvalue.

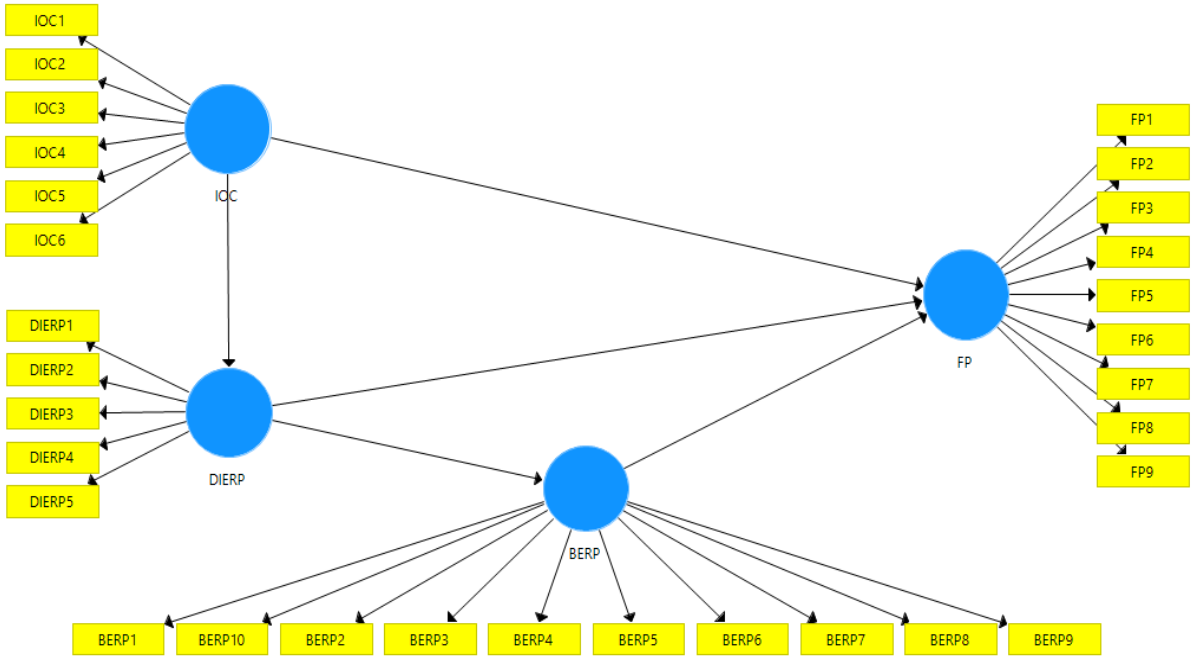
4.4 Confirmatory Factor Analysis (CFA):

Confirmatory factor analysis (CFA) it is a statistical technique. According to Harrington, (2009) investigated that it's a type of structural equation modeling (SEM) particularly deals with the measurement model in a way to test the hypothesis. It also detects the relationship between the observed measures (indicators) and the latent construct of a particular research model. According to Suhr, (2003) indicates that CFA relies on several statistical tests to determine the adequacy of model fit of the data.

To test the measurement model or the outer loadings. The study has used the SMART PLS approach. CFA also measure the reliability and validity of the particular construct. CFA comprised of several analyses such as convergent validity, and discriminant validity. The convergent validity

is consisting of further three categories i.e. factor loading (FL), composite reliability (CR), and average variance extracted (AVE).

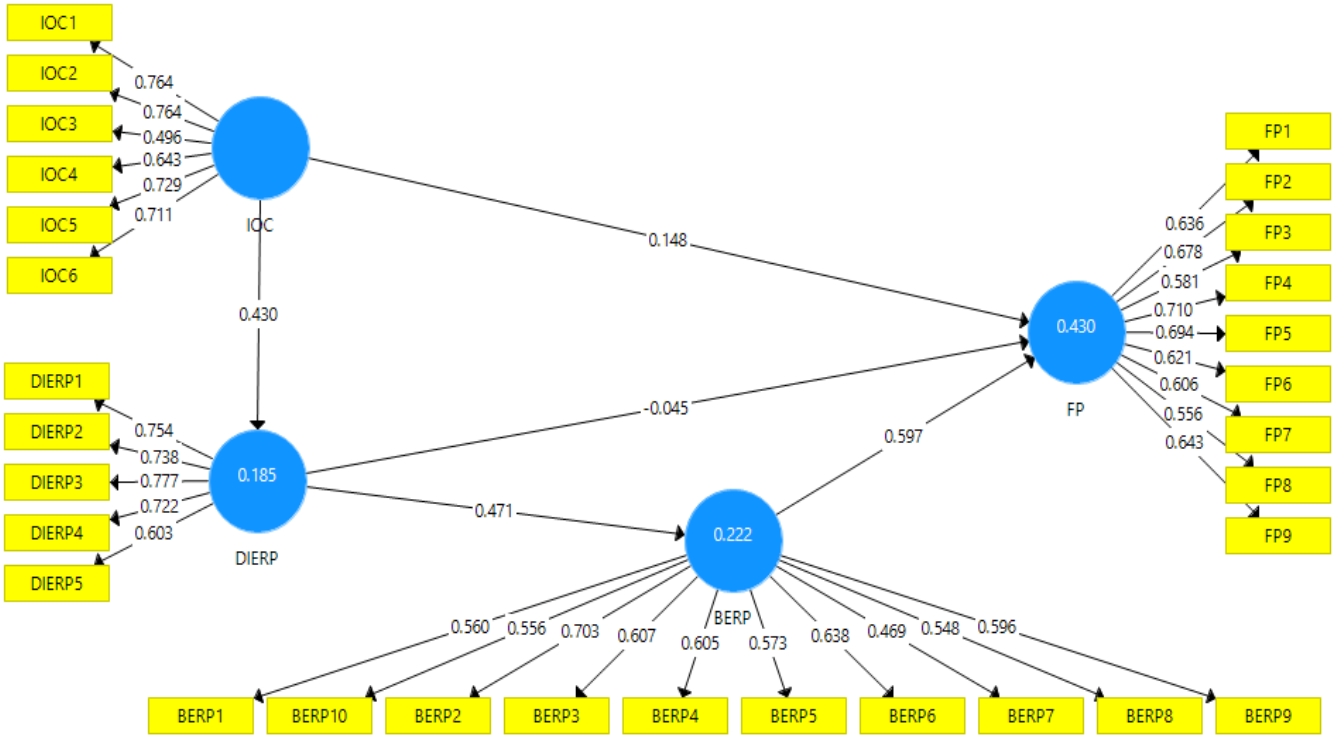
Figure 2 CFA



4.5 CFA 1ST LEVEL with factor loading:

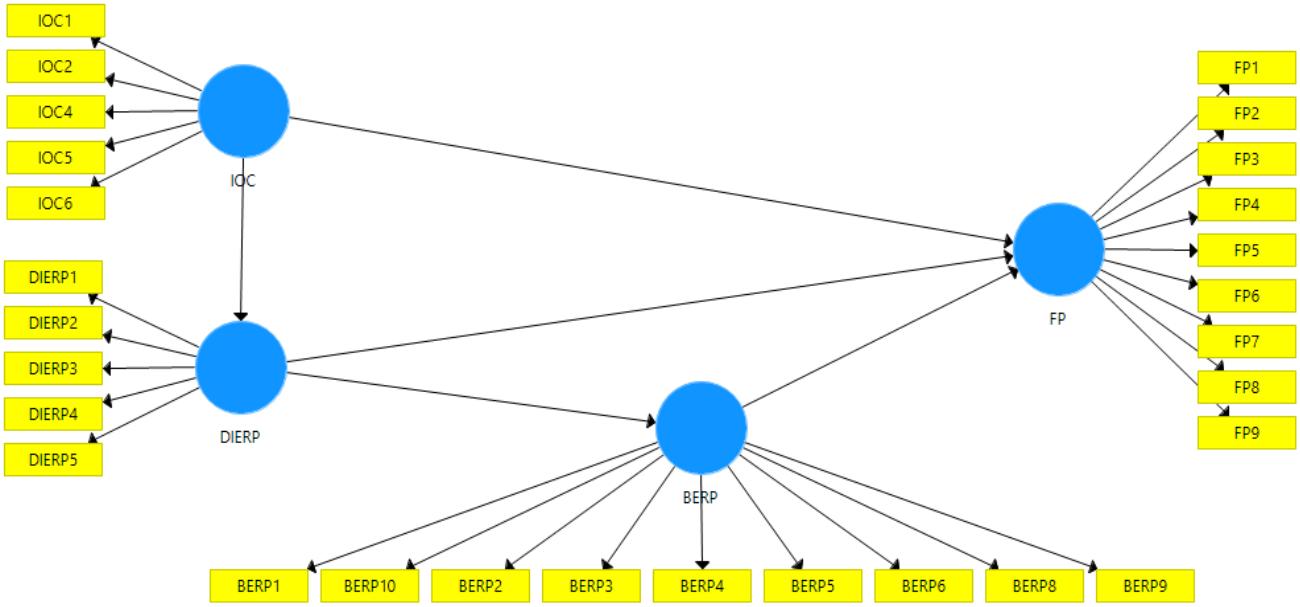
For calculating the factor loading of the research model the study has used the PLS Algorithm.

Figure 3 CFA



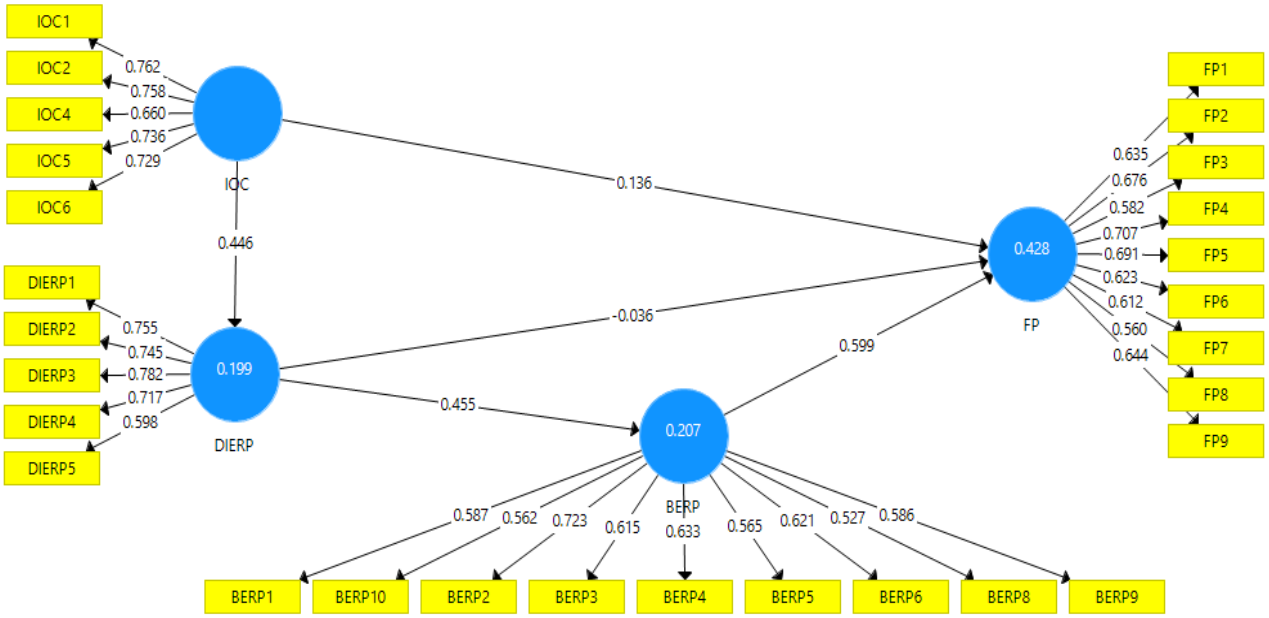
4.6 CFA 2nd LEVEL:

Figure 4 CFA



4.7 CFA 2ND LEVEL with factor loading:

Figure 5 CFA



In the above figure, all constructs are mentioned with their particular factor loading. Factor loading should be greater than 0.5. Therefore, Study has removed the following item IOC3 (0.496), and BERP7 (0.469) both contain less than 0.5 loadings after applying the PLS algorithm.

4.8 Reporting of CFA:

Table 4.4: Results of CFA

Convergent Validity

Constructs	Items	Corn Bach Alpha	Factor loading	Composite Reliability	Average Variance Extracted (AVE)
Innovative organizational culture (IOC)		0.782		0.837	0.365
	IOC1		0.762		
	IOC2		0.758		
	IOC4		0.660		
	IOC5		0.736		
	IOC6		0.729		
Degree of implementation of Enterprise resource planning (DIERP)		0.769		0.844	0.522
	DIERP1		0.755		
	DIERP2		0.745		
	DIERP3		0.782		

	DIERP4	0.717		
	DIERP5	0.598		
Benefits of ERP (BERP)	0.823		0.860	0.407
	BERP1	0.587		
	BERP2	0.723		
	BERP3	0.615		
	BERP4	0.633		
	BERP5	0.565		
	BERP6	0.621		
	BERP8	0.527		
	BERP9	0.586		
	BERP10	0.582		
Firm Performance (FP)	0.780		0.850	0.533
	FP1	0.635		
	FP2	0.676		
	FP3	0.582		
	FP4	0.707		
	FP5	0.691		
	FP6	0.623		
	FP7	0.612		

FP8	0.560
FP9	0.644

The above table 4.4 indicates that the Confirmatory Factory Analysis. In this table, the Cronbach's alpha shows the consistency among the items of constructs. The value of Cronbach's alpha should be greater than 0.6. Average Variance Extracted (AVE) used to measure errors in data, its value should be 0.5 or above, but if the value of Average Variance Extracted (AVE) is less than 0.5 and the value of the Reliability of data is greater than 0.6 than Average Variance Extracted (AVE) is valid and acceptable.

4.9 Discriminant validity:

Table 4.5: Results of Discriminant Validity

	BERP	**DIERP**	**FP**	**IOC**
(BERP)	0.604			
(DIERP)	0.445	0.722		
(FP)	0.643	0.298	0.638	
(IOC)	0.446	0.446	0.388	0.730

Discriminant validity is a sub type of construct validity. According to Hamid et al., (2017) investigated that discriminant validity explains that the one construct differs from other empirically. It also measures the degree of differences between the overlapping construct. This study is focused to assess discriminant validity using the Fornell-Lacker criterion. It shows that all items belong to different constructs, all are non-overlapping constructs. It compares the square

root of the average variance extracted (AVE) with the correlation of latent constructs. A latent construct should explain better the variance of its indicator rather than the variance of other latent constructs. Therefore, the square root of each construct's AVE (diagonal) should have a greater value than the correlations (off-diagonal) of all relative constructs.

4.10 Reliability Analysis:

Table 4.6: Results of Reliability Analysis

Construct	**Items**	**Cronbach's Alpha**
Innovative organizational culture (IOC)	6	0.789
Degree of implementation of Enterprise resource planning (DIERP)	5	0.769
Benefits of enterprise resource planning (BERP)	10	0.823
Firm performance (FP)	9	0.777

Reliability is demarcated as the measurement that is the free from the errors or mistakes. This test is applied in statistics to measure consistency among all the items of constructs of study (Sekaran et al., 2003). It also accesses the degree to which the items are homogenous. It elucidates that all the items of the exogenous, and endogenous constructs are parallel. It shows the value of the Cronbach alpha is greater than 0.6 (Hair et al., 2006) for further proceeding within the given

research. A result of reliability analysis shown in table number 4.6 it specifies the values of Cronbach's alpha of all values of constructs is in range (Hair et al., 2006).

4.11 Descriptive statistics:

Table 4.7: Results of Descriptive Statistics

Construct	Mean	Std. Deviation	Kurtosis	Skewness
Innovative organizational culture (IOC)	4.030	0.669	0.902	-0.551
Degree of implementation of Enterprise resource planning (DIERP)	4.303	0.658	-0.296	-0.511
Benefits of enterprise resource planning (BERP)	4.175	0.530	0.110	0.148
Firm Performance (FP)	3.761	0.643	-0.204	-0.023

In above table 4.7 shows descriptive statistics. It is used to describe a large amount of data in a compact and sensible form (Sekaran, 2003). Mean statistics determine the mean value of all the respondents of a particular construct. The mean or average is probably the most commonly used method of describing central tendency, whereas standard deviation is a more accurate estimate of dispersion because an outlier can greatly exaggerate the range (McDowall & Saunders, 2010). Skewness and kurtosis are the measures of the normality of the data (Sekaran, 2003). The value of

Skewness and kurtosis should be between +1 to -1 to prove the normality of the data (Geay, 1947; Cooper, & Schindler, 2008).

4.12 Correlation Analysis:

Table 4.8: Result of Correlation Analysis

Constructs	(IOC)	(DIERP)	(BERP)	(FP)
Innovative organizational culture (IOC)	1			
Degree of implementation of ERP (DIERP)	.430**	1		
Benefits of ERP (BERP)	.462**	.518**	1	
Firm performance (FP)	.374**	.260**	.562**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed).

According to Raghavendra, (2020) elaborates that correlation analysis determines the relationship among the constructs. It is one of the prerequisites of regression analysis. According to Taylor, (1990) examined that the range of correlation is -1 to +1. -1 shows a complete negative correlation, while +1 shows a complete positive correlation and 0 means there is a powerless correlation among

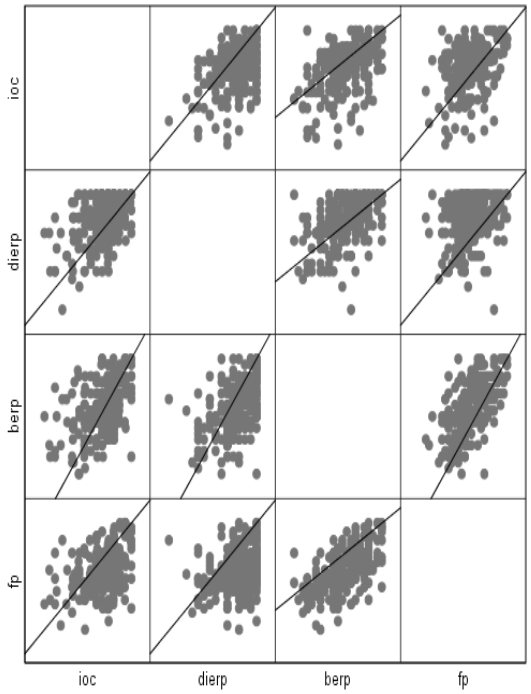
the constructs (Stigler, 1989). The correlation results of the study are shown in Table 4.8. The Pearson Correlation is used.

The results in table 4.8 point out that there is a positive, significant and moderate relationship between innovative organizational culture (IOC) and firm performance (FP) (r = .374**p=0.01), Degree of implementation of enterprise resource planning (DIERP) and firm performance (FP) are also positively, significant and weakly correlated with each other (r=.260**, p=0.01). There is a positive, significant, and strong relationship exist between the Benefits of Enterprise resource planning (BERP) and firm performance (FP) (r = .562**, p=0.01).

4.13 Six assumptions of Multiple Linear Regression Analysis (OLS):

Regression assumptions are proposed by the Berry, (1993) investigated that there are six assumptions of the regressions which are used to remove the ambiguous estimations and biasness, and provide the exact unbiased estimations.

4.13.1 OLS regression 1: linearity:



It explains the functional form of the model. In statistics, a regression model is linear, when all terms in the model are either the constant or a parameter multiplied by a predictor construct. Therefore, the study used the regression model equation.

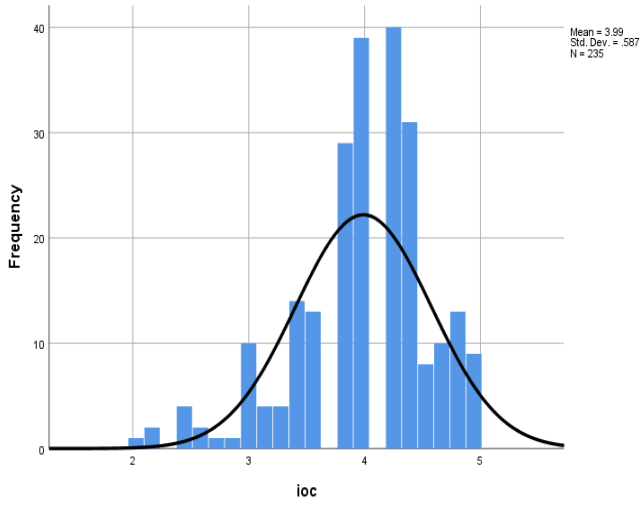
$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k + \epsilon$$

According to this assumption, all betas (βs) are the parameters for OLS estimations. Epsilon (ε) is the random error. These are the parameters of the exogenous constructs, not be in square and cubic form. The value of these parameters should be 1. As shown in the graph all data lie around the line, it shows a linear relationship among the constructs. The graphs show the linear relationship among all the constructs. Hence, the first assumption of the OLS is satisfied.

4.13.2 OLS Assumption 2 Normality:

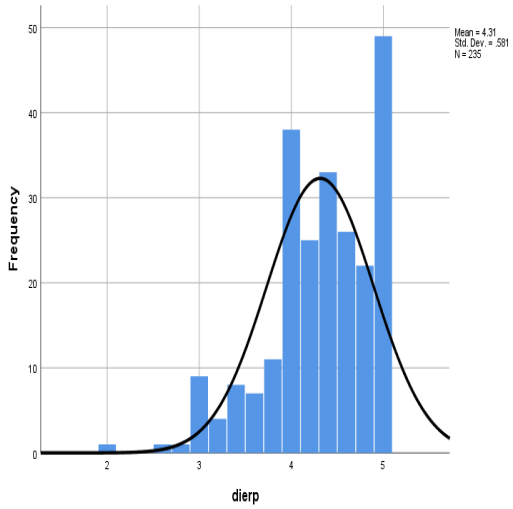
According to this assumption the data should be normally distributed. In the current study, it is checked with the help of histogram, all constructs show a normal graph. It's one of the easiest ways to identify the normality of the data.

4.13.2.1 For Innovative Organizational Culture (IOC):



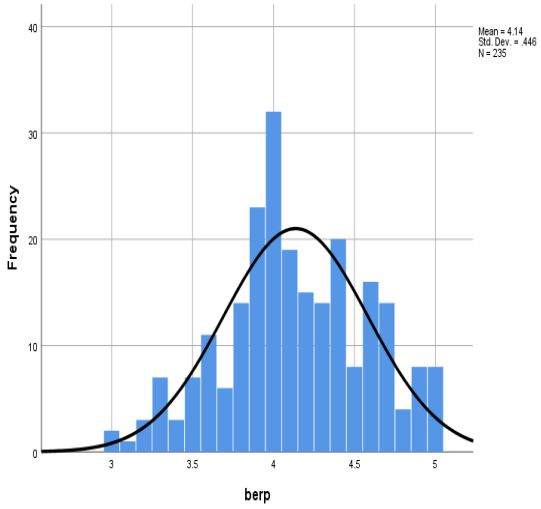
In the current study, the normality of the first exogenous construct is checked with the help of a histogram. The histogram of Innovative Organizational Culture (IOC) shows the normality of data. Therefore, the second assumption of OLS has been fulfilled here.

4.13.2.2 For Degree of Implementation of Enterprise Resource Planning (DIERP):



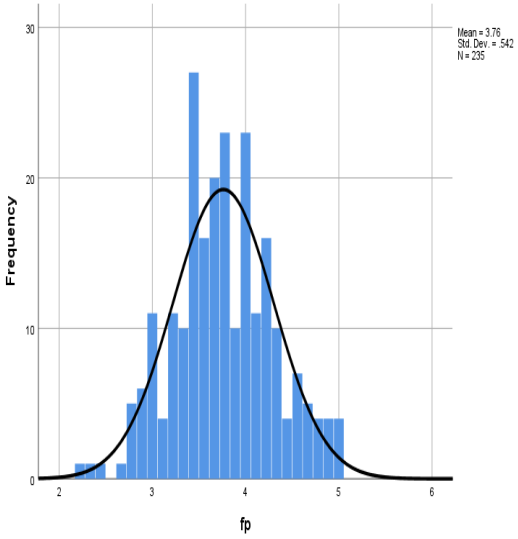
The normality of the second exogenous construct is also checked with the help of a histogram. Here the histogram of a Degree of Implementation of Enterprise Resource Planning (DIERP) shows the normality of data. Therefore, the second assumption of OLS is also satisfied here.

4.13.2.3 For Benefits of Enterprise Resource Planning (BERP):



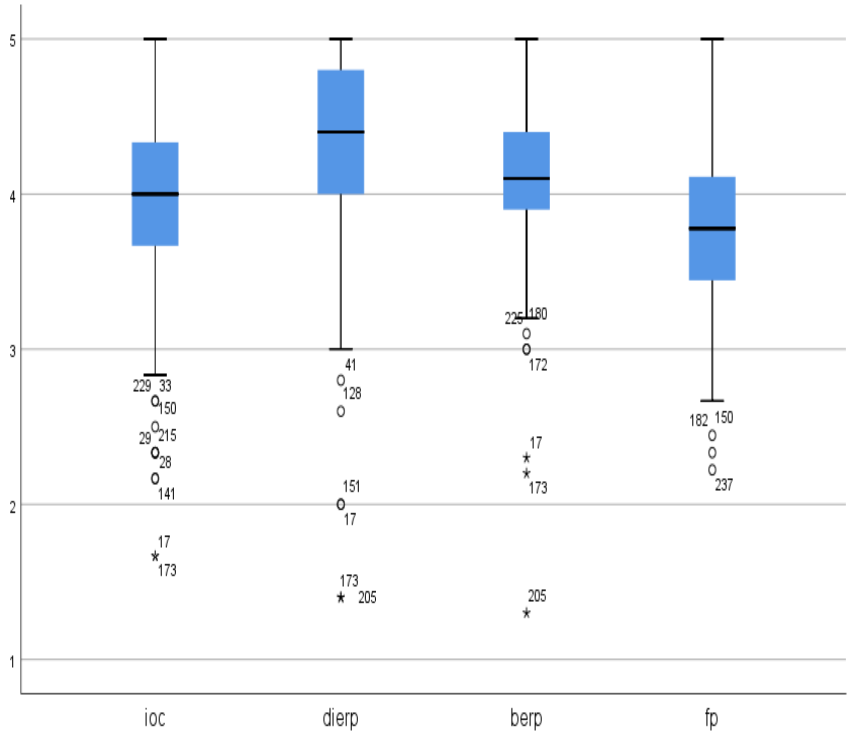
In this study, the third exogenous construct also shows the normality. It is checked with the help of a histogram. Here the histogram of the benefits of Enterprise resource planning (BERP) shows the normality of data. Therefore, the second assumption of multiple linear regression analysis is also satisfied here.

4.13.2.4 For Firm Performance (FP):

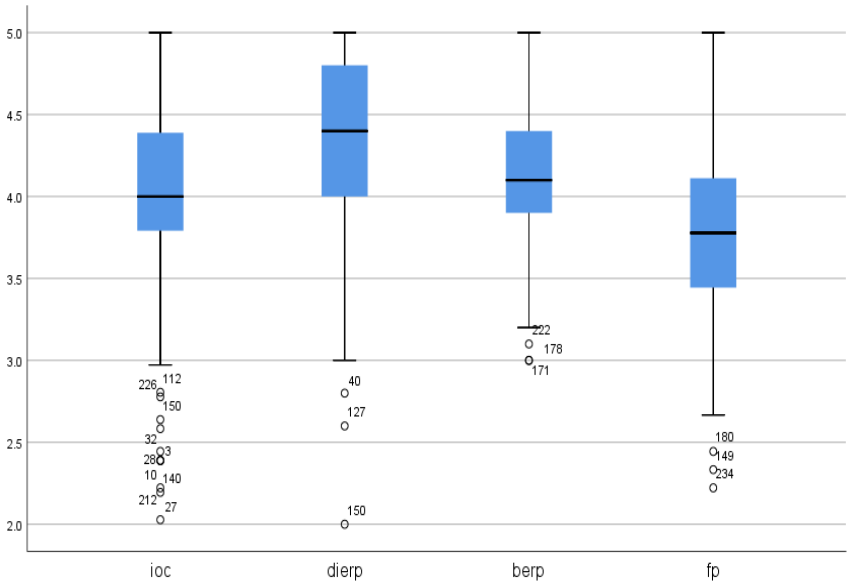


In this investigation, the fourth endogenous construct for Firm Performance (FP) also shows the normality. It is checked with the help of a histogram. Here the histogram shows the normality of data. Therefore, the second assumption of multiple linear regression analysis is also fulfilled here.

4.13.3 OLS assumption 3 Outlier:



The following respondents are the outliers i.e. 17, 173, 205, 236, and 239 that effect the normality of the data. These were shown as the outliers in every construct. According to Blessing (1997), Outliers are the extreme values, it effects the normality of the constructs and regression estimations. Therefore, the study checks the outliers through the box plot.



According to Aggarwal, (2015) following responses 17, 173, 205, 236, and 239 are the outliers of the study, to disturb the normality of the data. These outliers are removed and again analyze the data, to check the outlier with the help of the box plot. The above graph shows no outlier in the study.

4.14 OLS 4th Assumption No-Multi Collinearity/No-Auto Correlation:

In this study the multi-collinearity has checked with the help of two ways:

4.14.1 Correlation among Exogenous Constructs:

***Table 4.9**: Results of Multi Collinearity*

Constructs	(IOC)	(DIERP)	(BERP)
(IOC)	1	.413**	.450**
(DIERP)	.413**	1	.455**
(BERP)	.450**	.455**	1

Multi collinearity exists among the constructs (Mansfield et.,1982; Farrar et al., 1967; Alin et al., 2010). In multiple regression analysis, the researcher should have identified it, and cope up with this phenomenon to make sure that there should not be multicollinearity/no-auto correlation exist among the constructs. In the above table 4.9 eradicates that all the constructs are moderated correlated with each other. Therefore, no multi-collinearity exists among all exogenous constructs.

4.14.2 Variation inflation factors (VIF):

***Table 4.10:** Results of Variation inflation factors*

Constructs	VIF
Innovative organizational culture (IOC)	1.376
Degree of implementation of ERP (DIERP)	1.390
Benefits of ERP (BERP)	1.390

According to Long et al., (2018) explains that the measure the amount of multicollinearity among the multiple regression model. Therefore, it can be checked with the help of the VIF values, the

acceptable range of VIF value should not be greater than 4. In this study Table 4.10 explains that the VIF values of constructs are less than 4, it means there is no multicollinearity exist among the constructs.

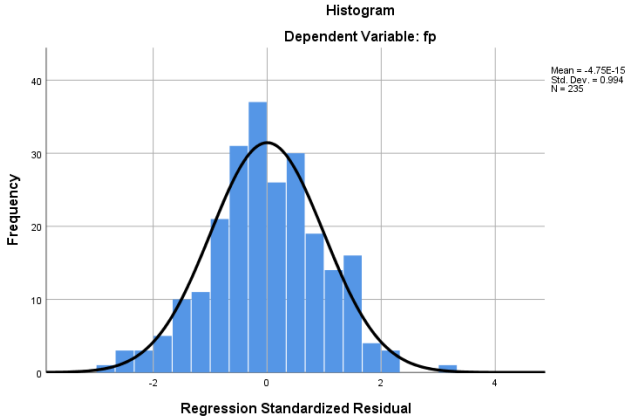
4.15 No- Auto Correlation:

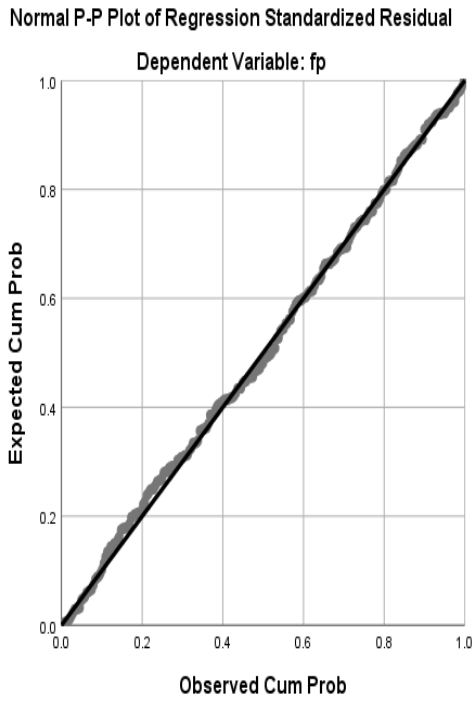
Table 4.11: *Results of No Auto Correlation*

Durbin Watson	2.169

According to Namekawa et al., (1982) suggested that auto-correlation is checked with the help of Durbin Watson. In the above table, 4.11 shows the value of Durbin Watson should be near 2. Above table 4.11 express that there is no autocorrelation exists among the constructs. The value of Durbin Watson is 2.169.

4.16 OLS 5th Assumption Homoscedasticity:

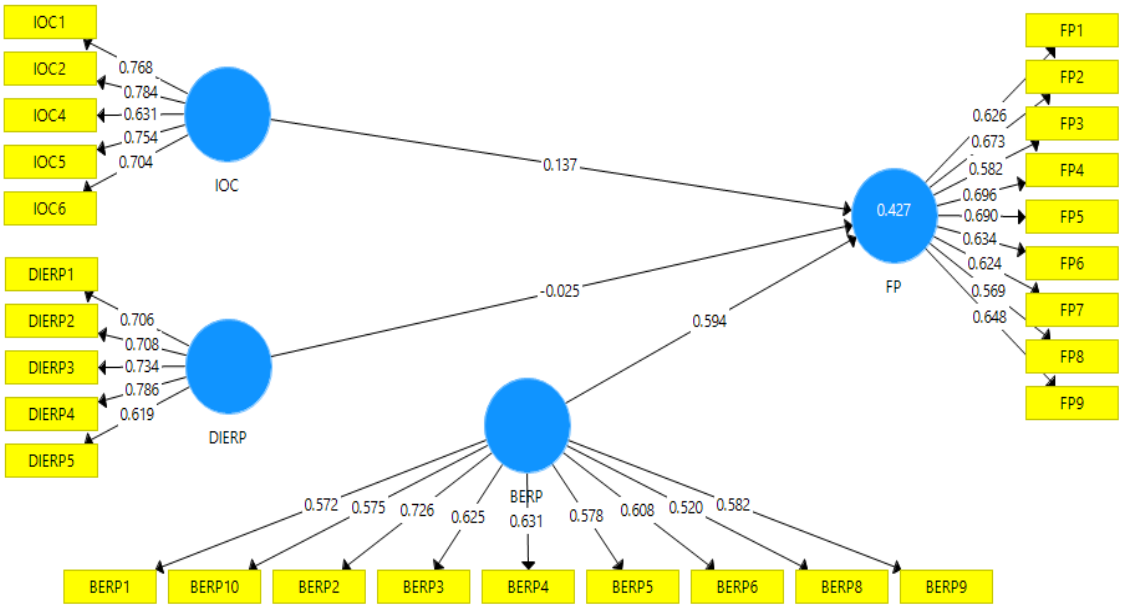




Homoscedasticity shows the variance of the error term should be the same with the variance of all exogenous constructs (Goldfeld et al., 1965; Yilmaz et al., 2020; Kang et al., 2020). The above graph shows the variance of residuals is the same as the variance of exogenous constructs.

4.17 0Direct effect of three Exogenous Constructs (IOC, DIERP, and BERP) on Endogenous construct (FP):

Figure 6 Effect of (IOC, DIERP, and BERP) on (FP)



The above diagram shows the direct effect of all exogenous constructs on the endogenous construct of study. Factor loading has applied. Table 4.12 reports the PLS regression. Therefore, the followings are the beta values of the model that is Innovative Organizational Culture (IOC) has 0.137, Degree of Implementation of Enterprise Resource Planning (DIERP) contains -0.025, while the Benefits of Enterprise Resource Planning consist of 0.594. On the other hand, R^2 of the model is shown in the diagram as 0.4227.

4.18 Regression Analysis:

Table 4.12: *Reporting of PLS Regression 1*

Direct effect of exogenous constructs on endogenous constructs				
	Beta	**R Square**	**Adjusted R**	**p value**
Innovative organizational culture (IOC)	0.137			0.000**
Degree of implementation of Enterprise resource planning (DIERP)	-0.025	0.427	0.424	0.785
Benefits of Enterprise resource planning (BERP)	0.594			0.017**

Multiple regression analysis is one of the most widely statistical procedures. It's very popular due to its applicability to various sets of tests. The main aim of this analysis to explain the future pattern of the endogenous constructs with the assistance of exogenous constructs. According to Mason &

Perreault, (1991) investigated that regression analysis also concluded individual exogenous constructs on endogenous constructs by focusing on the regression coefficients, estimated standard error, and association of t-statistics probabilities (t-test). Furthermore, it also investigated the Predictive accuracy, which is rectified by the magnitude of the R^2 and the statistical significance (p-value) of the overall model of the study. In this investigation (IOC), (DIERP), and (BERP) are exogenous constructs for firm performance (FP).

$$\mathbf{Y_1 = 0.137\ X_1 - 0.025\ X_2 + .0594\ X_3}$$

Y= firm performance is measured by the exogenous constructs i.e. Innovative organizational culture (IOC), Degree of implementation of Enterprise resource planning (DIERP), and Benefits of Enterprise resource planning (BERP).

The findings of table 4.13 show the regression analysis. The value of R square shows 42.7% variance in endogenous construct firm performance (FP) are due to the exogenous constructs such as innovative organizational culture (IOC), degree of implementation of enterprise resource planning (DIERP), and benefits of enterprise resource planning (BERP). While adjusted R^2 shows the actual change in endogenous construct (FP) due to the exogenous constructs i.e. innovative organizational culture (IOC), degree of implementation of enterprise resource planning (DIERP), and benefits of enterprise resource planning (BERP). The beta value of the Innovative organizational culture (IOC) is (B=.137), which shows that a one-unit increase in Innovative organizational culture (IOC), which leads to 13.7% increase in the firm performance (FP) that indicates the equal change in both constructs. The p-value (p=0.000) shows the positive and significant impact of Innovative Organizational Culture (IOC) on Firm Performance (FP) (Sekaran, 2003). According to this those firms have Innovative Organizational Culture and

encourage new ideas and innovation which directly linked with superior firm performance. The result is acceptable at a 95% confidence interval.

The beta value of the Degree of Implementation of Enterprise Resource Planning (DIERP) (B=-0.025) shows that a one-unit increase in the Degree of Implementation of Enterprise Resource Planning (DIERP), it brings -.2.5% decrease in the Firm Performance (FP). The p-value is (p= 0.785), greater than threshold value 0.05. It shows that the negative and insignificant relationship exists between both constructs (Sekaran, 2003). According to the result, the Degree of Implementation of Enterprise Resource Planning (DIERP) negatively linked with higher Firm Performance (FP).

The beta value of the Benefits of Enterprise Resource Planning (BERP) is (B=.594). It explains that a one-unit increase in the Benefits of Enterprise Resource Planning (BERP), leads to a 59.4% increase in Firm Performance (FP). It specifies the equal change in both constructs. The p-value (p=0.000) shows the positive and significant relationship among the Benefits of Enterprise Resource Planning (BERP) and Firm Performance (FP) (Sekaran, 2003).

4.19 Direct effect of Innovative Organizational Culture and Degree of Implementation of Enterprise Resource Planning:

Figure 7 Effect of (IOC) on (DIERP)

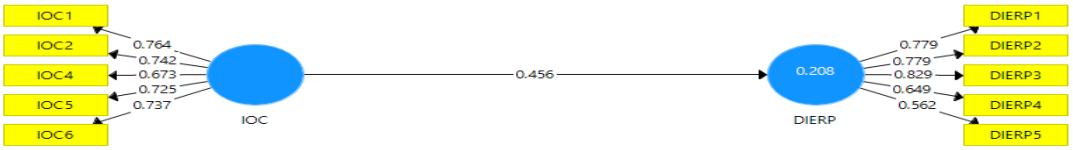


Table 4.13: Reporting of PLS Regression 2

Direct effect of IV on DV				
	Beta	**R Square**	**Adjusted R**	**p value**
Innovative organizational culture (IOC)	0.456	0.208	0.204	0.000**

The above diagram demonstrates the direct effect of exogenous construct Innovative Organizational Culture (IOC) on the endogenous construct of this model that is The Degree of Implementation of Enterprise Resource Planning (DIERP) factor loading is applied. Table 4.13 reports the PLS regression. Therefore, the beta value of Innovative Organizational Culture (IOC) is 0.456. The R^2 of the model is shown in the diagram as 0.208, while the adjusted R^2 is 0.204.

The findings of table 4.13 demonstrate regression analysis. In which value of R square shows that a 20.8 % variation in endogenous construct i.e. Degree of Implementation of Enterprise Resource Planning (DIERP) are due to the exogenous constructs that is the Innovative Organizational Culture (IOC). While adjusted R^2 shows actual change in endogenous construct (DIERP) is due to the exogenous construct (IOC). A beta of Innovative Organizational Culture (IOC) is (B=.456), which shows that a one-unit increase in Innovative Organizational Culture (IOC) leads to a 45.6% increase in the higher Degree of Implementation of Enterprise Resource Planning (DIERP). It shows an equal change in both constructs. The p-value (p=0.000) shows the positive and significant relationship among Innovative Organizational Culture (IOC) and Degree of Implementation of Enterprise Resource Planning (DIERP) (Sekaran, 2003).

4.20 Direct effect of Degree of Implementation of Enterprise Resource Planning (DIERP) and Benefits of Enterprise Resource Planning (BERP):

Figure 8 Effect of (DIERP) on (BERP)

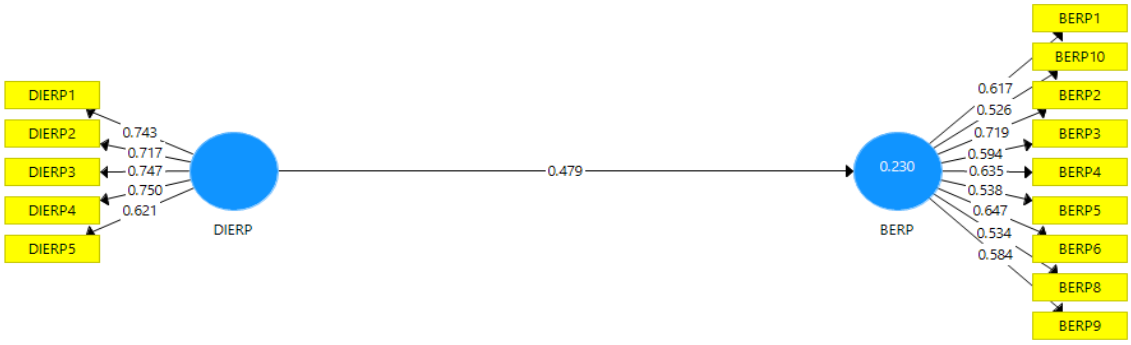


Table 4.14: *Reporting of PLS Regression 3*

Direct effect of exogenous on endogenous construct				
	Beta	**R Square**	**Adjusted R**	**p value**
Degree of implementation of enterprise resource planning (DIERP)	0.479	0.230	0.227	0.000**

The above diagram exhibits the direct effect of exogenous construct Degree of implementation of enterprise resource planning (DIERP) on endogenous construct Benefits of Enterprise Resource Planning (BERP) of this model i.e. factor loading is applied. Table 4.14 reports the PLS regression. Therefore, the beta value of the Degree of implementation of enterprise resource planning (DIERP) 0.479, R^2 of the model has shown in the diagram as 0.230, while the adjusted R^2 is 0.227.

The findings of table 4.14 make an evidence of the regression analysis. In which the value of R square shows that the 23.0 % variation in endogenous construct benefits of enterprise resource planning (BERP) is due to the exogenous constructs degree of implementation of enterprise resource planning (DIERP). While adjusted R^2 shows the actual change in endogenous construct benefits of enterprise resource planning (BERP) are due to the exogenous constructs i.e. degree of implementation of enterprise resource planning (DIERP). The beta of a Degree of Implementation of Enterprise Resource Planning (DIERP) is (B=.456), which explains that one-unit increase in the Degree of Implementation of Enterprise Resource Planning (DIERP), it will bring 45.6% increase in the Benefits of Enterprise Resource Planning (BERP) shows the equal change in both constructs. The p-value (p=0.000) shows the positive and significant relationship between the Degree of Implementation of Enterprise Resource Planning (DIERP) with the Benefits of Enterprise Resource Planning (BERP) (Sekaran, 2003).

4.21 Mediating effect of Degree of Implementation of Enterprise Resource Planning (DIERP) among Innovative Organizational Culture (IOC) and Benefits of Enterprise Resource Planning (BERP):

Figure 9 Mediating effect of (DIERP) between IOC and BERP

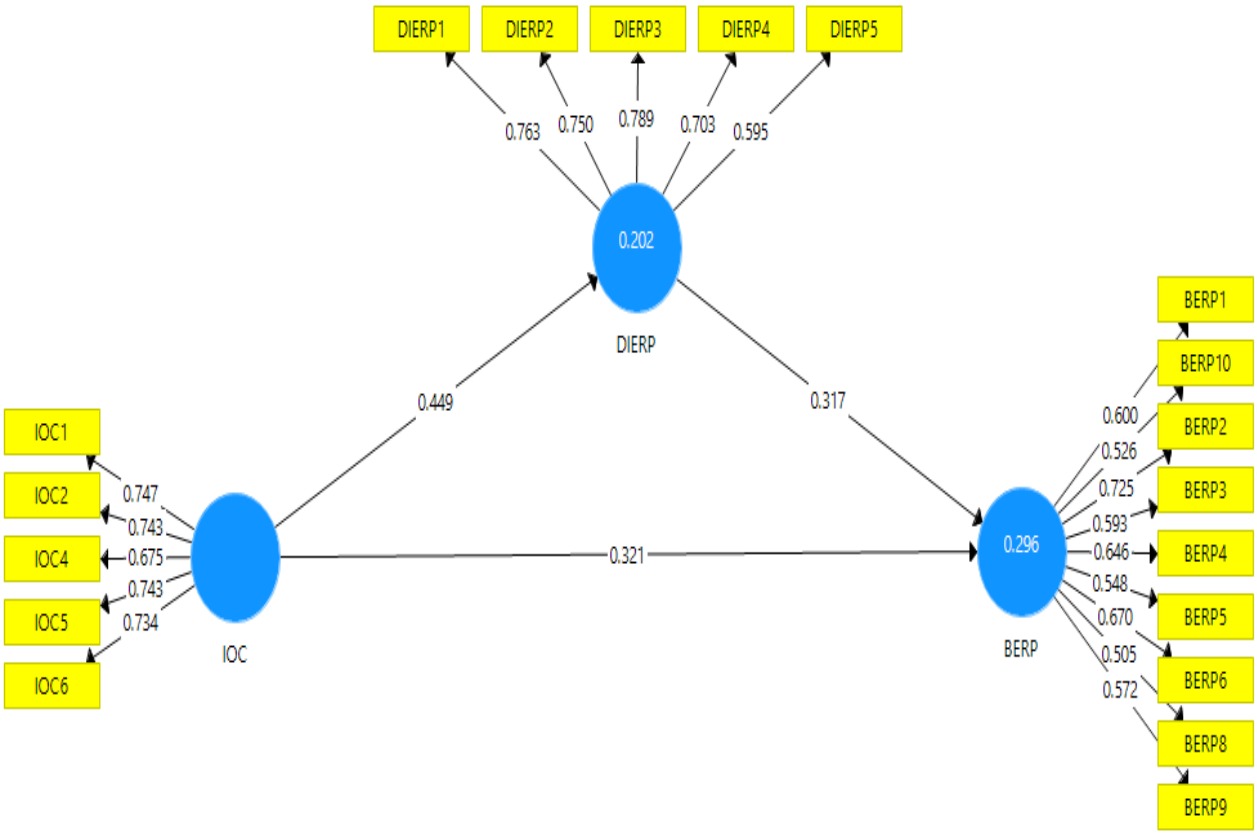


Table 4.15: *Mediation Analysis of DIERP*

	ORIGINAL SAMPLE (O)	SAMPLE MEAN (M)	STANDARD DEVIATION (STDEV)	T STATISTICS (O/STDEV)	VALUES
IOC ⟶ DIERP	0.449	0.457	0.059	7.663	0.000**
DIERP ⟶ BERP	0.317	0.325	0.068	4.695	0.000**
IOC ⟶ BERP	0.321	0.329	0.068	4.749	0.000**
IOC ⟶ DIERP ⟶ FP	0.143	0.145	0.032	4.516	0.000**

The above table shows the mediating effect of the Degree of Implementation of Enterprise Resource Planning (DIERP) among Innovative Organizational Culture (IOC) and firm performance (FP). This result shows that the indirect effect of Degree of Implementation of Enterprise Resource Planning (DIERP), and relationship is significant and acceptable at a 95% confidence level, (p=0.000) which is less than 0.05, lie in the acceptable range. The T-statics shows the strength of the relationship. The value of its t-statistics is 4.56, which shows in the acceptable range.

4.22 Mediating effect of Benefits of Enterprise Resource Planning (BERP) among Degree of Implementation of Enterprise Resource Planning (DIERP) and Firm Performance (FP)

Figure 10 Mediating effect of (BERP) between (DIERP) and (FP)

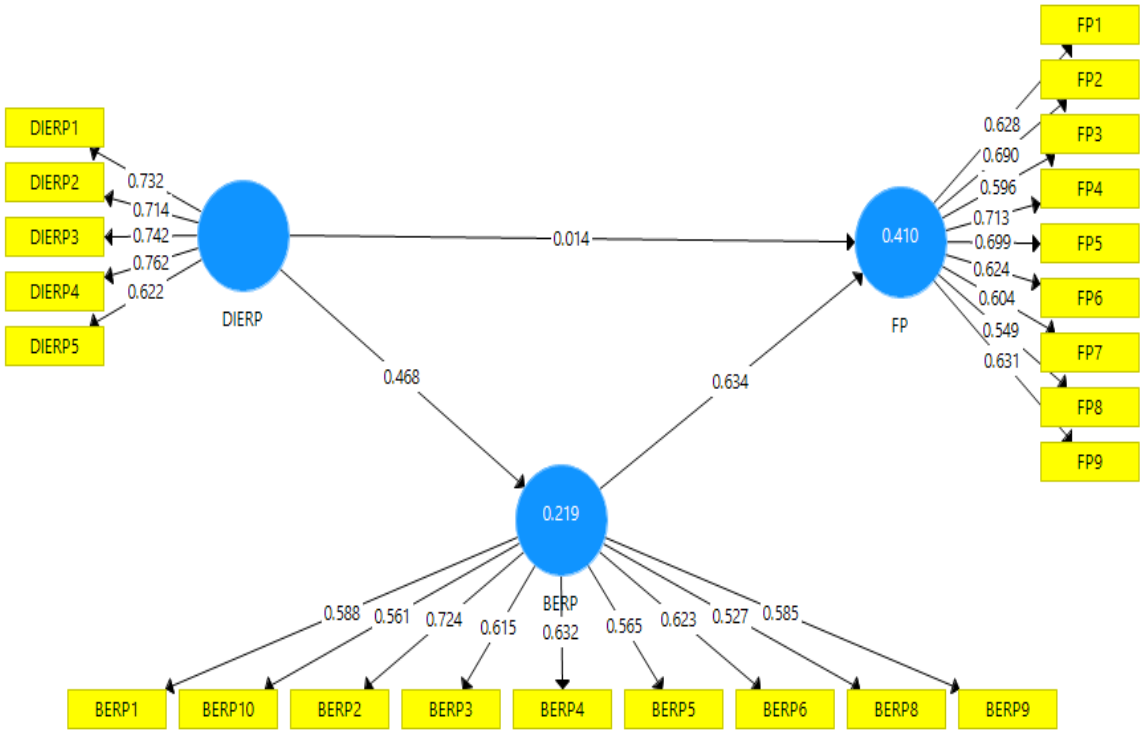


Table 4.16: *Mediation Analysis of BERP*

	ORIGINAL SAMPLE (O)	SAMPLE MEAN (M)	STANDARD DEVIATION (STDEV)	T STATISTICS (O/STDEV)	VALUES
DIERP ⟶ FP	0.014	0.014	0.064	0.214	0.830
DIERP ⟶ BERP	0.468	0.481	0.054	8.610	0.000**
BERP ⟶ FP	0.634	0.643	0.046	13.647	0.000**
DIERP ⟶ BERP ⟶ FP	0.297	0.309	0.041	7.157	0.000**

The above table 4.16 shows the mediating effect of the Benefits of Enterprise Resource Planning (BERP) between the Degree of Implementation of Enterprise Resource Planning (DIERP) and Firm Performance (FP). This result shows that the indirect effect of Degree of Implementation of Enterprise Resource Planning (DIERP) and relationship is significant and acceptable at 95% confidence level, (p=0.000) p-value is less than 0.05, lie in the acceptable range. The T-statics shows the strength of the relationship. The value of its t-statistics is 7.157, which shows in the acceptable range.

4.23 Summary:

In this chapter, the study analyzed the relationship among exogenous and endogenous constructs with the help of the statistical tool structural equation modeling (SEM) technique of SMART PLS (Version 3) to test the hypothesis. In this study demographics of the study are plotted with the help of SPSS (version 18). The study is to check the reliability among the items of the constructs, all are in range. It also studied the descriptive statistics with the help of the value of the skewness and kurtosis, to check the normality of the data. The correlation is also checked among the exogenous constructs of the study. The current study also checks the six assumptions of regression i.e. linearity, normality, sample adequacy size, outliers, Multicollinearity/Autocorrelation, and Homoscedasticity. Finally, Multiple linear regression and Mediation analysis is discussed. Summary of acceptance and rejections of the hypothesis is as follow:

Table 4.17 Summary of the Hypothesis

Hypothesis	Statement	Results
H1	Innovative organizational culture (IOC) is positively related with the firm performance (FP)	**Accepted**
H2	Degree of implementation of Enterprise Resource Planning (DIERP) is positively related with firm performance (FP).	**Rejected**
H3	Benefits of Enterprise Resource Planning (BERP) are positively related to firm performance (FP).	**Accepted**
H4	Innovative organizational culture (IOC) is positively related to the degree of implementation of Enterprise Resource Planning (DIERP)	**Accepted**
H5	Degree of implementation of Enterprise Resource Planning (DIERP) is positively related to the benefits of Enterprise Resource Planning (BERP).	**Accepted**
H6	Degree of implementation of (DIERP) mediates the relationship between Innovative organizational culture (IOC) and benefits of Enterprise Resource Planning (BERP)	**Accepted**
H7	Benefits of Enterprise Resource Planning (BERP) mediates the relationship between the Degree of Implementation of Enterprise Resource Planning (DIERP) and Firm Performance (FP).	**Accepted**

5 Chapter 05

Discussion, Conclusion, Limitation, and Future Recommendations

5.1 Discussion:

The findings of all hypotheses are formulated and tested.

H1: Innovative Organizational Culture (IOC) is positively related with firm performance (FP)

Innovative Organizational Culture (IOC) elucidated a positive and significant relationship with firm performance (FP). It's one of the important dimensions that play a crucial role to be more competitive and sustained in an industry. IOC encourages to invest a huge amount of tangible and intangible resources for superior firm performance. The mechanism and structures of IOC in the manufacturing and services industry for Pakistan foster new ideas and innovation. It designed to support and encourage innovations. It takes innovations is what the best for a group. Pakistan's firms are holding the collectivist culture in private sectors to enhance firm performance. IOC is an intangible asset that is used to respond to the invention, taking a risk, forecast future market trends, and learning, and also encourage creativity. IOC is more risk-takers, openness to new ideas, and having an entrepreneurial mindset. IOC also strives for innovation. Consequently, the firm emphasis all the employees to participate in it to share the responsibility. Therefore, the value of the knowledge capital will be more. Subsequently, those firms have higher IOC in their firms they are more adaptive and more focused on technological innovation such as higher implementation of enterprise resource planning.

The result of the study is supported by the other previous study; Innovative Organizational Culture (IOC) has a positive and significant impact on Firm Performance (FP), which is undertaken in the

banking sector of turkey (Uzkurt et al., 2013). Turkey has a very dramatically dynamic environment and improve the corporate climate and more willing to compete in the global arena for intense growth. It also owns a collectivist culture to avoid the uncertainty (Hofstede, 1991).

The result is also aligned with the study Jamrog et al., (2006) it also shows the positive and significant impact on the superior firm performance, because Innovative organizational culture (IOC) stimulates the innovative behavior among the employees of the organization to provide creative solutions to get a competitive edge in the market to improve firm performance.

The result of the present study is also similar with the previous research, IOC is more likely to take decision independently, it becomes more foster to take the risk for peruse the goals and employees having entrepreneurial behavior all heads are joined to create and maintain the competitive edge in the market and higher firm performance (Allred and Swan, 2004; Bradley et al., 2013)

The result is also contradictory with the previous study shows that IOC's has more in an individualistic culture, then collectivistic culture. Individualistic cultures are more risk-takers, and foster innovation and creative ideas are generated, not for the sake of the group. Therefore, it shows a negative and significant impact on firm performance (Waarts & Van Everdingen, 2005).

Result of the present study is contradictory with the previous study; Khan et al., (2018) it shows the insignificant impact of innovative organizational culture (IOC) on firm performance (FP) because IOC is not all time bring the higher firm performance, because the absence of the few elements such as transformational leadership in Chinese industry, plays a crucial role for enhancing efficient internal capabilities such as collaboration and teamwork among colleagues towards the implementation of new technological innovation in the firms. Conducive learning is

associated with transformational leadership. It also empowers the internal environment of the firm by adjusting the innovation with the firm's goals.

The result of the present study is also not aligned with the previous study FP Steenkamp et al., (1999). The IOC has an insignificant relationship with FP because in Asian countries there is an individualistic culture in the workplace, the practices and effectiveness of collective culture are tending to be weaker. Therefore, it leads to the lack of teamwork spirits and there are more stroked about their innovative ideas. It relates to the hindering of the efficiency of the true group-oriented innovative ideas in the firm and brings inverse impact on the firm performance.

Therefore, H1 is accepted, while the alternate hypothesis is rejected.

H2: Degree of implementation of Enterprise Resource Planning (DIERP) is positively related with firm performance (FP).

For a higher Degree of Implementation of Enterprise Resource Planning (DIERP) incurs a huge cost in Pakistan's firms. A substantial or direct cost is related to the pre-implementation process, which is associated with the purchase, installation, procurement of the professional's services. While the post-implementation cost is associated with on-going fixes and higher maintenance or indirect costs are associated with the IT investment, maintenance, and upgrade system expenses, damages, or losses generated mainly by human or organizational factors. It also associated with the extensive training session that leads to lower employee morale and work efficiency in Pakistan.

ERP's package not only controls the operational cost of the firm, but plays a crucial role to improve the new product development as well as the introduction, mergers, acquisition, and grabbed other growth opportunities, but in Pakistan lack of Innovative Organizational Culture leads to decrease

in the firm performance. Therefore, it's a need for firms to invest huge additional capital for shaping the Innovative Organizational Culture, to achieve the desired effects.

Time management is also very important to efficiently and effectively boost firm performance. In Pakistan's manufacturing and services firms, all the firms have projects to complete in the specific period, but ERP's pre-implementation and on-going extensive training sessions lead to frustrations, the learning curve is static and diminishes. Thus, employee work efficiency would be reduced that belongs to the reduction in firm performance.

Employees of Government sectors are more reluctant for a higher degree of implementation of the ERP's are very low due to the absence of the intention to use the ERP's package and entrepreneurial culture, it leads to diminishes the firm performance. For this extensive time, training, and efforts put by the governing body, the top management and middle management of the firm in the presence of the innovative organizational culture to boost firm performance. In Pakistan firms also faced the following issues such as management commitment, high costs, time lagging, employee conflicts and non-realization of anticipated benefits result in ERP projects' failures (Aloini et al., 2007).

In Pakistan, the absence of a project team and change management shows a negative and insignificant relationship among both of them. Seniors managers should be a part of the project team for a better communication process. It creates higher knowledge for the entire team. Firms should support and frequently briefed to prepare the employees to intimate the change.

The Degree of Implementation of the ERP's package is depended upon the package's compatibility, complexity, and observability it influences the degree to which the user's satisfaction. The results indicate that if the system is perceived as not easy to use, their interest in

learning and using the system will reduce, which may contribute to their resistance to the system use. It reduced the degree of implementation of ERP's and firm performance.

Market exploration is also very important for a higher degree of implementation of enterprise resource planning. Firms should have proper knowledge about the external environment of the firms, which is which module is used by the competitors to gain efficiency in the market. Pakistan firms are not more active and have not much curious about the macro environment of the firm. When the firms automate the bad business process that leads to an inefficient and expensive business process. The structural properties of the social system that the ERP system operated in reinforced the autonomy of managers who are mandatory users rather than the voluntary users of the ERP system. This structural contradiction between the actual (voluntary use) and desirable (mandatory use) actions of some managers served to limit the extent of using the package to diminishes the firm performance.

Resistance towards the change and attitude diminishes the extent to use the degree of ERP's package in developing nations. These both are the factors that play an important role in the failure of ERP's package and decrease the firm performance. Therefore, there is a need for the cooperative culture in the firm and an accurate management system should be there.

Therefore, h2 is rejected while the alternate hypothesis is accepted.

The result of the current study is also aligned with the previous study Rajan & Baral, (2015) explains that it shows the insignificant relationship between the DIERP and FP. The ERP package is much different from the other technological innovation due to the socio-technical challenges, and a higher level of complexity involved in the implementation process for both managers and end-users of the firm.

The result of the study is also the same as the previous study that the DIERP shows an insignificant impact on the FP, the reason behind this result reflects that the entrepreneurial culture is absent. Therefore, it incurs a higher cost to diminish firm performance (Al-Dhaafri et al, 2016).

The result of the present study is also supported by the previous study, it shows a negative and insignificant relationship between the DIERP and FP, a higher degree of implementation of ERP incurs huge cost due to higher cost of implementation difficulties and higher recruitment of ERP engineers and knowledge (Poston & Grabski., 2000).

The result of the study is also similar to the past study, which shows the negative and insignificant relationship between DIERP and FP, the reason behind is the learning curve, those organizations having short and medium-term ERP package history is more successful. It enhances production in the short and medium-term, while those firms having the large history of the ERP's and failed to achieve overall firm performance learning curve shows that companies take huge time to recover the aftershocks of implementation of ERP's package because mostly the employees are not comfortable to use the package in long term and become frustrated. Hence IT reduced firm performance (Wieder et al., 2006).

The result of the present study is contradictory to the previous study HassabElnaby et al., (2012) investigated that a Higher Degree of Implementation of ERP provides the reliable information and bolster a firm to scrutinize development. However, it gives access to client and market information that permits a firm to examine and assess external opportunities for development to enhance FP.

H3: Benefits of Enterprise Resource Planning (BERP) are positively related to Firm Performance (FP).

The current study comprised of five categories of Benefits of Enterprise Resource Planning i.e. operational benefits, managerial, strategic, IT and organizational benefits all are positively related to the higher firm performance by reducing the operation expense, proactively fulfill the needs and wants of the customers, customized products, it also supports the communication process, and improving the employee's morale, which belongs to the efficient decision-making process to boost firm performance. Those firms get higher benefits such as higher information accessibility, flexibility, the introduction of new product development, and bring the innovation in an existing product line that leads to better decision making to enhance the firm performance (FP). Higher benefits also derive the revenue growth and decrease the cost by making efficiency in their operations by improving Return on assets. ROS is higher as the higher implementation of ERP; ROI is used to measure the firm's efficiency against invested capital on ERP's package to improve the firm performance. It also improved inventory control, improved cash management, and reduction in operating costs. Additionally, it prompts to expansion in production, information, and customer service quality. Benefits of ERP and firm performance has significant relationship among both of them because it enhances the progress in financial processes, and management, by making efficient management of a firm's operations and optimal usage of resources.

Therefore, H3 is accepted, and an alternate hypothesis is rejected.

The result of the current study is also aligned with the previous study Esteves, (2009), it shows that there is a positive relationship between the BERP and firm performance because it enhances the progress in financial processes, and management, by making efficient management of firm's operations and optimal usage of resources.

The result of the present study is also similar to the previous study Shang & Seddon, (2002) indicate that BERP improves the FP by enabling the firm to get more accurate and timely information.

The result of the present study is contradictory to the previous study Rouhani & Mehri, (2018) show that BERP and FP has an insignificant relationship between both of them, due to the lack of learning and training sessions.

H4: Innovative Organizational Culture (IOC) is positively related to the Degree of Implementation of Enterprise Resource Planning (DIERP)

Those firms have Innovative Organizational Culture (IOC) that encourages new ideas and innovation, which directly linked with the higher degree of implementation of enterprise resource planning. Innovative organizational culture has a greater impact on attitudes toward a higher degree of implementation of enterprise resource planning such as ERP capabilities of employees, value, and acceptance of the package. IOC plays a crucial effort to adopt information technology (IT) and systems to enhance the degree of implementation of ERP, to support business integration and help to make effective and efficient decision-making process.

Therefore, H4 is accepted, and an alternate hypothesis is rejected.

The results of the current study are also aligned with the previous study Ruivo et al., (2012) investigated that it shows the positive and significant relationship between both of them because IOC enhances the learning opportunities and provide training sessions to learn the new technologies i.e. ERP. IOC also plays a crucial role to cope up with the problems, enhance knowledge, and acquire new skills to accomplish the goals and make an effective decision-making process.

Another study is also aligned with the previous study Damanpour & Schneider, (2009) it shows the positive and significant relationship between the IOC and DIERP because IOC consists of two innovative processes i.e. adaptation and implementation of ERP. The following factors are more active in IOC; such as supportive management principles, and innovative techniques. Therefore, it shows a positive association between the IOC and the degree of implementation of ERP in the firm.

The present study is also contradictory to the previous study; Gajic et al., (2014) explains that there is a reciprocal relationship between IOC and degree of implementation of ERP. In most cases, IOC does not achieve business process control, cut down its cost, increase its revenue due to a higher degree of implementation of ERP. Therefor firm should create ease of use to implement it and get the benefit.

There is another study that shows the contradictory result with the previous study Chou et al., (2014). It shows that there is an insignificant relationship between the higher DIERP and FP most of the firms don't get the expected goals after the implementation of ERP. Due to the improper use of the system. Firms should hire good consultants to get efficient opinions.

The result is also contradictory to the previous study; Khan et al., (2018) IOC has an insignificant relationship between the DIERP because of the lack of the transformational leadership and non-availability of the top management support.

H5: Degree of implementation of Enterprise Resource Planning (DIERP) is positively related to the benefits of Enterprise Resource Planning (BERP).

Those firms have a higher degree of implementation of enterprise resource planning (DIERP) that leads to the higher benefits of enterprise resource planning because it improves the flow of

information across departments. Moreover, the integration and standardization of the business processes smoothen organizational jobs such as payroll and accounts payable. Additionally, higher implementation leads to higher the benefits get by the firms to enhance the capacity and reduced the cost of implementation and maintenance. Likewise, it also shifts the ineffective management to efficient business processes.

DIERP also improves the Operational Benefits achieved by firms by reducing cost, cycle time enhance the productivity and customer service, i.e. higher managerial benefits achieved by a firm to get better resource management, planning, amended decision making and enhance the performance due to the higher degree of implementation of enterprise resource planning. that degree of implementation is directly linked with higher strategic benefits attain by the firm has high business growth, alliance, innovation, cost, differentiation, and external linkages. A higher degree of implementation of enterprise resource planning (DIERP) in Pakistan leads to higher benefits of the enterprise resource planning (BERP) i.e. IT infrastructure benefits are positively associated both of them create and maintain business flexibility, diminishes IT cost and the marginal cost of business units' IT, and better capability for quick implementation of new applications, and organizational benefits support the radical changes and innovations smoothing employee learning and morale, and empowering workers, and building common visions.

Therefore, H5 is accepted, while the alternate hypothesis is rejected.

The result of the study is also aligned with the previous study its shows the significant relationship between both of them Davenport et al., (2002) shows that higher degree of implementation leads to higher benefits because of the transformation of data into valuable and reliable information that sustenance the business analysis and decision making.

Another study result is also aligned with the past study; Genoulaz & Millet, (2006) also shows the positive and significant relationship between both of them, because it enhances the stable, consistent, competitive, and responsive business process. ERP implementation brings the following benefits i.e. reduction in the lifecycle time, fastest generation of financial information, and development of the latest firm's strategies.

The result of the study is contradictory with the past study Gajic et al., (2014) Higher DIERP not always lead to the higher BERP due to inefficient use of the technology and lack of the perceived ease of use about the particular package.

H6: Degree of Implementation of Enterprise Resource Planning (DIERP) mediates the relationship between Innovative Organizational Culture (IOC) and Benefits of Enterprise Resource Planning (BERP)

A higher Degree of Implementation of Enterprise Resource Planning (DIERP) mediates the association among between innovative organizational culture (IOC) and benefits of enterprise resource planning (BERP) in Pakistan's firms because IOC leads to build and encourage the higher DIERP and accept the radical changes to improve the benefits of enterprise resource planning. It also facilitates the innovation, creativity, and change to boost the BERP in the presence of higher implementation of DIERP. IOC is the prerequisite of DIERP it accelerates new knowledge, idea generation, and effective communication that leads to the higher benefits of enterprise resource planning (BERP).

IOC has some supportive management principles and innovative techniques. Therefore, a higher degree of implementation of ERP provides reliable information and bolster a firm to scrutinize development. However, it gives access to client and market information that permits a firm to

examine and assess external opportunities for development to enhance the benefits of enterprise resource planning such as a reduction in the lifecycle time, fastest generation of financial information, and development of latest firm's strategies.

Therefore, H6 is accepted, while the alternate hypothesis is rejected.

The result of the study is also aligned with the previous study Matolcsy et al., (2005) it indicates that IOC and BERP are mediated DIERP because when the firm has the innovative culture it encourages the new ideas and technologies that leads to higher benefits i.e. boost the performance of the employees, make efficient business process improved decision-making processes, and cut down the expenses.

The result is also aligned with the previous study; Stratman, (2007) analyzed that when the firm has high IOC it leads to higher BERP i.e. due to the higher DIERP, decrease uncertainty in the firm by having proper coordination, and efficient flow of information, have proper accessibility of the valid firm's data. Therefore, it relates to better operational planning and decision support.

The result of the current study is contradictory with the previous study shows a higher degree of implementation of enterprise resource planning (DIERP) not mediated the relationship between the IOC and BERP, due to the lack of ease of use of the ERP's package and improper use and extended training leads to the lower BERP (Gajic et al., 2014; Chou et al., 2014)

H7: Benefits of Enterprise Resource Planning (BERP) mediates the relationship between Degree of Implementation of Enterprise Resource Planning (DIERP) and Firm Performance (FP).

A higher degree of implementation of enterprise resource planning (DIERP) provides reliable information and bolster a firm to scrutinize development. However, it gives access to client and

market information that permits a firm to examine and assess external opportunities for development to enhance FP in the presence of higher benefits of enterprise resource planning. The current study comprised of five categories of benefits of enterprise resource planning i.e. operational benefits, managerial, strategic, IT and organizational benefits all are positively related to the higher firm performance by reducing the operation expense, proactively fulfill the needs and wants of the customers, customized products are made based on the specific needs of the products, it also supports the communication process, and improving the employee's morale that belongs to the efficient decentralized decision-making process to boost firm performance.

According to Stratman, (2007) investigates that higher DIERP is linked with higher FP mediated BERP, because it allows managers to enhance firm performance by aligning the structure and goals of firms to get the better control on expenses, enhance the efficiency of supply chain and bring value to the customer by improved understanding the needs and wants of the customer, and delivered better customer satisfaction through better speed, accuracy, and responsiveness to customer requests, and get a higher return on investments. When there is higher DIERP leads to higher FP, due to the higher benefits of ERP. Therefore, firms have fast and efficient business processes, standardized reporting due to higher access to data. It directly linked with the higher the return on assets (ROI), returns on sales (ROA), return on investments (ROI). It plays an important role to improve the productivity in two ways. Operational efficiency about end-user or customer satisfaction. It permits the firm to condense the transaction costs of the business and improve its productivity, profitability, and customer satisfaction.

Therefore, H7 is accepted, while the alternate hypothesis is rejected.

The result is also aligned with the previous study conducted in Canada to examine that higher DIERP boosts the FP, due to the presence of higher BERP. Consequently, it makes the higher

coordination, diminishes the cost among subunits of the firm. Hence, it also improves decision making by providing accurate and timely enterprise-wide information (Menon, 2019)

The result is also aligned with the previous study that higher DIERP leads to FP, due to the higher BERP because there is a reduction in the number of employees as a percentage of revenue the year after ERP implementation. However, successful firms have fewer numbers of employees due to the automation process. The result shows that indicate a paradox where firms having fewer employees supporting more revenue (Beheshti & Beheshti., 2010)

The result of the study is also contradictory with the previous study Higher Degree of Implementation of ERP incurs huge cost due to higher cost of implementation difficulties, and higher recruitment of ERP engineers and knowledge (Poston & Grabski., 2000) According to this those firms have Innovative Organizational Culture and encourage new ideas and innovation which directly linked with superior firm performance.

5.2 Conclusion:

Due to the advancement of technology, the last decade is marked by extensive globalization as well as dynamic micro and macro environment. With the advent of these changes, the firm should take the significant steps for handling the resources that may assist in enhancing and improving the firm's competitiveness and performances by efficiently performing their internal and external activities (Nadiri & Tanova, 2010).

This research is focused on the Innovative Organizational Culture (IOC) and its processes such as Degree of Implementation of Enterprise Resource (DIERP) and Benefits of Enterprise Resource Planning (BERP) to enhance the firm performance. IOC It's one of the important dimensions to be more competitive and sustained in an industry that directly linked with a higher degree of

implementation of the enterprise resource planning (DIERP) and achieved the higher realized benefits of enterprise resource planning (BERP). This research also spotlights the ability of the firms to create and maintain Innovative organizational culture (IOC) and invested a huge amount of capital on technological innovation such as ERP's package. The higher level of IOC leads to the higher efficiency of the firm regarding resource utilization, and higher firm performance. On the other hand, When the Degree of Implementation of Enterprise Resource Planning is high in the absence of the IOC, it creates a stressful situation for the firm. After investing plenty of the resource on the higher implementation of ERP's without the ability of the managers to use them. Hence, it diminishes the firm performance. However, the firms should invest more resources in the Innovative Organizational Culture. This research fulfills the research gap by develop the research model and made a theoretical contribution to rediscover the power of an ERP package in enabling a firm to achieve Innovative Organizational Culture and its process to enhance performance.

Additionally, the current study also explains that when the firms get higher benefits such as operational benefits, strategical benefits, managerial benefits, IT infrastructure benefits, and organizational benefits, from the higher implementation of ERP's, it directly linked with higher firm performance.

Moreover, this study also explains that a Higher Degree of Implementation of ERP's mediates the relationship between the Innovative Organizational Culture and Higher Benefits of Enterprise Resource Planning. Because IOC facilitates and encourages innovations, and improve the communication process, due to the innovative techniques it provides reliable information. It also plays a crucial role to examine and access external opportunities. Therefore, it also supports the higher Degree of Implementation of Enterprise Resource Planning and decreased the uncertainty

that improves performance of the employees, make efficient business process improved decision-making processes, and cut down the expenses.

Furthermore, this study also demonstrates that in Pakistan Higher Benefits of Enterprise Resource Planning (BERP) mediates the relationship between the Higher Degree of Implementation of Enterprise Resource Planning (DIERP) and firm performance (FP). Higher DIERP facilities the firms to access the huge opportunities and market information and huge access to data. Therefore, operational benefits, managerial, strategic, IT and organizational benefits all are positively related to the higher firm performance by reducing the operation expense, proactively fulfill the needs and wants of the customers, customized products are made based on the specific needs of the products, it also supports the communication process, and improving the employee's morale that belongs to the efficient decision-making process to boost firm performance.

5.2 Constraints of the study:

This study has numerous limitations; there are some additional factors which is not examined in this study such as the employee attitudes before the implementation of an ERP system are important predictors of success. This study is limited by its inability to assess attitude change (or stability) over time. The second impediment is identified is related to the sample. The sample size is not very large the data is collected from only six big cities of Pakistan i.e. Rawalpindi, Islamabad, Peshawar, Lahore, Karachi, and Quetta. The third limitation is the collection of data is collected only from two industries i.e. manufacturing and services firms of large cities of Pakistan. The fourth restriction is Due to the degree requirement time is a constraint. Last but not least fifth limitation of the study is data is collected from an online survey due to the COVID-19.

5.3 Practical implications:

The current study allows the important practical implications and managerial recommendations to improve the firm performance as well as the implementation of new packages i.e. ERP's in their operations. Managers play their important role to encourage innovations at every level of the firm and motivate the employees to boost their morale towards the ERP's package. Innovation can be successful due to the presence of the innovative organizational culture in the firm. The result of the study identifies the mangers should encourage the IOC at the workplace to actively encourage and supports the manager, enhance the degree of implementation of the enterprise resource planning, and get higher benefits from the enterprise resource planning package. Managers should emphasize the mechanism to encourage and foster the innovative organizational culture to enhance the firm performance by adopting and implementing the ERP's package and diffusion of the existing one. The existence of this climate, environment, or culture motivates the support of the innovation in the firm. Managers should also highlight the transformational leadership, efficient training sessions, and sustain a proper management system towards the resistance of change to enhance firm performance.

5.4 Future Recommendation:

For further research regarding firm performance and technological innovation, the researcher can also take these as an exogenous construct such as the perceived ease of use, digital business ecosystem, environmental turbulence and competitive intensity on organizational innovation. Firm size can be taken as the moderator construct for the model. Furthermore, it would be important to compare the attitudes and performance outcomes of the employees. It would be useful to track and assess employee attitudes throughout the entire ERP implementation process and identify the several combinations of culture at the front and back end towards the new package to boost the

firm performance. Researchers can test the hypothesis by adopting other methodological techniques. Moreover, further research can take place with larger sample size. This study can be converted into a comparative study, to determine the relationship among constructs more clearly. This investigation can take the qualitative data for further identification of the relationship.

5.5 Summary:

The Higher Innovative Organizational Culture encourages and fosters innovation. It became more foster to take the risk for peruse the goals, and employees having entrepreneurial behavior all heads are joined to create and maintain the competitive edge in the market. It's very imperative for the higher implementation of ERP's package in the firm. In the absence of the IOC, a higher degree of implementation of ERP's leads to a stressful situation. After investing plenty of the resource on the higher implementation of ERP's without the ability of the managers to use them. Higher realized benefits enhanced firm performance. The degree of implementation of (DIERP) mediates the relationship between Innovative organizational culture (IOC) and the benefits of Enterprise Resource Planning (BERP) due to the higher acceptance of radical changes. While Benefits of Enterprise Resource Planning (BERP) mediates the relationship between Degree of Implementation of Enterprise Resource Planning (DIERP) and Firm Performance (FP) due to the five categories of realized benefits of enterprise resource planning i.e. operational benefits, managerial, strategic, IT and organizational benefits all are positively related to the higher firm performance by reducing the operation expense, proactively fulfill the needs and wants of the customers, customized products are made based on the specific needs of the products. Moreover, it also supports the communication process and improved the employee's morale that belongs to an efficient decision-making process to boost firm performance.

The study comprised of several limitations such as data is collected only six large cities of Pakistan. It also opens the door for future research keeping in mind to shape the Innovative Organizational Culture in the firms. It also elucidates to cope with the resistance towards the change. It also insights the mangers to encourage innovation at every stage of the firm.

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APPENDIX (I)

Demographics:

Nature of firm: ☐ Manufacturing ☐ Services

Experience with ERP: ☐ Less than 1 year ☐ 1- 2 years
☐ 2–3 years ☐ 3-4 years
☐ 4–5 years ☐ 5–6 years
☐ More than 6 years

Firm employees: ☐ 1-50 ☐ 51-100 ☐ More than 100

Designation: ☐ Top Management ☐ Middle Management

APPENDIX (II)

s.no		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Managers have courage to make innovation and take risk.	1	2	3	4	5
2	Managers actively lead the staff to grow and innovate.	1	2	3	4	5
3	Managers have vision and insights to create new business opportunities	1	2	3	4	5
4	In our organization employees can learn and grow from challenges	1	2	3	4	5
5	Our company pays attentions to the uniqueness of employees and encourages the innovation from employees.	1	2	3	4	5
6	Our company is willing to take risks, and it is indeed an ambitious and energetic organization.	1	2	3	4	5
7	I use the ERP system very intensively.	1	2	3	4	5
8	I use the ERP system very frequently	1	2	3	4	5
9	I use the ERP system a lot	1	2	3	4	5
10	Degree of implementation of ERP in our organization is very high	1	2	3	4	5

11	Our organizational culture supports ERP implementation	1	2	3	4	5
12	My firm has better control of business operating expenses and decreased operations cost after adopting ERP system	1	2	3	4	5
13	My firm meets customer needs proactively and more efficiently.	1	2	3	4	5
14	My firm increased the capability of tailoring products to meet specific needs of customer, and improving resource management to support customization.	1	2	3	4	5
15	My firm has more effective decision making process	1	2	3	4	5
16	My firm has built external linkages to have better connectivity with customer and supplier	1	2	3	4	5
17	My firm has capability of building business innovation and absorb radical changes	1	2	3	4	5
18	Using ERP has Improved communication between employees and management	1	2	3	4	5
19	Using ERP has Increased IT infrastructure capability.	1	2	3	4	5
20	Using ERP has changed work patterns and improved coordination.	1	2	3	4	5

21	Using ERP has increased employee morale and satisfaction	1	2	3	4	5
22	All in all, our firm performance has improving	1	2	3	4	5
23	Our firm has achieved a high level of return on sales.	1	2	3	4	5
24	Our firm's distribution cost has been reduced.	1	2	3	4	5
25	Our firm has increased its market share.	1	2	3	4	5
26	Our firm has achieved a high level of return on investment.	1	2	3	4	5
27	Our firm's administrative expenses have been reduced.	1	2	3	4	5
28	Our firm's inventory cost has been reduced.	1	2	3	4	5
29	Our staff cost has been reduced.	1	2	3	4	5
30	Our firm has achieved a higher level of customer loyalty.	1	2	3	4	5

Appendix (III)

Morgan table:

Table 3.1

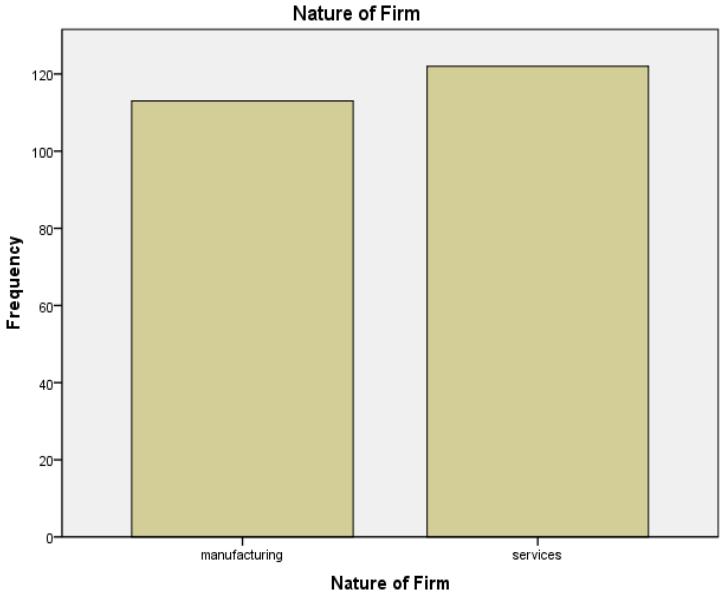
Table for Determining Sample Size of a Known Population

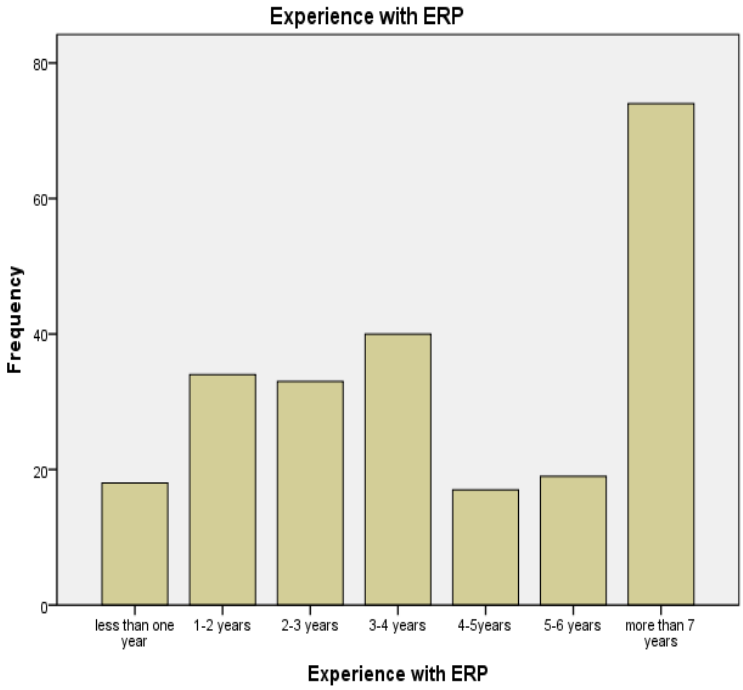
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

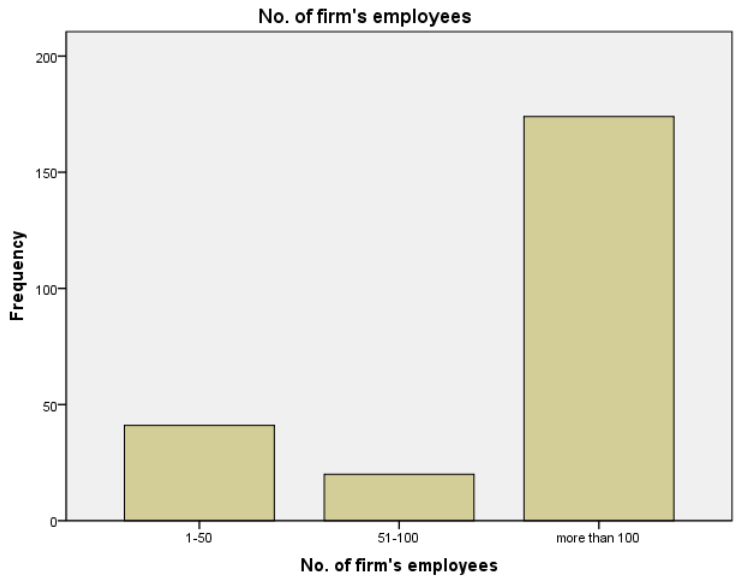
Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

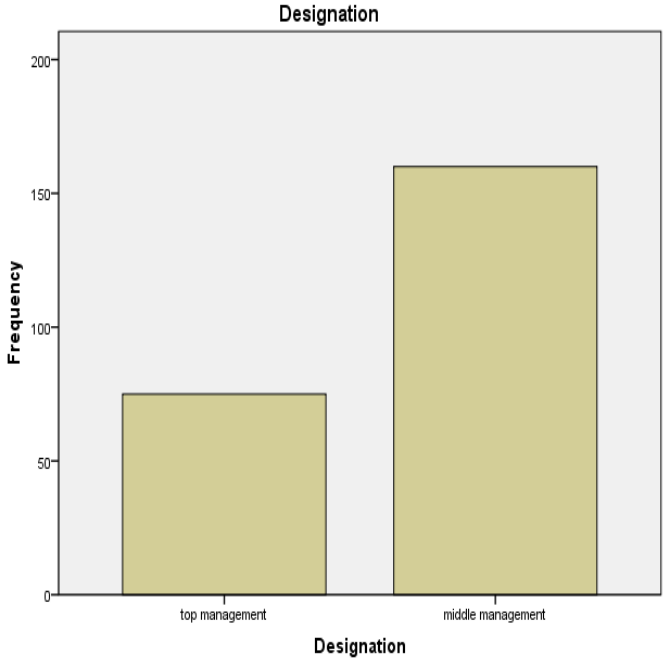
Appendix (IV)

Demographics Analysis:

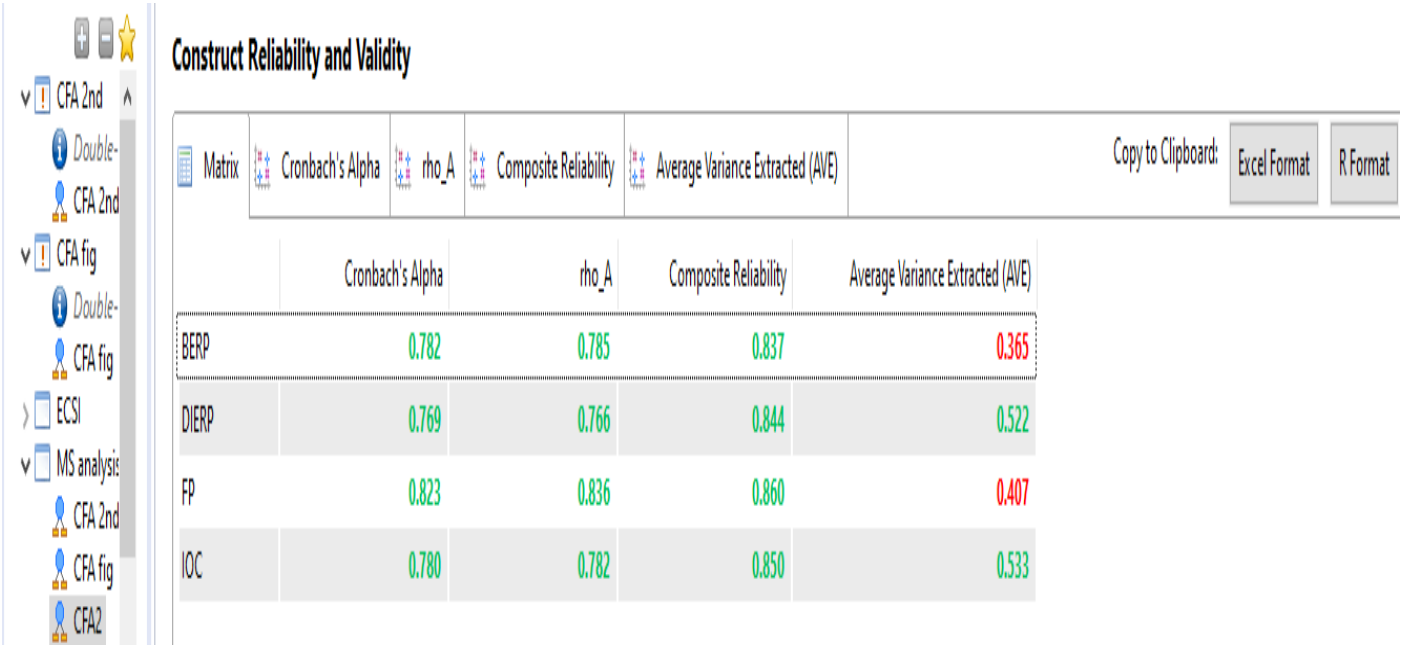





No. of firm's employees
200
150
100
50
0
Frequency
1-50
51-100
more than 100
No. of firm's employees


Designation
200
150
100
50
0
Frequency
top management
middle management
Designation

Relability:



	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
BERP	0.782	0.785	0.837	0.365
DIERP	0.769	0.766	0.844	0.522
FP	0.823	0.836	0.860	0.407
IOC	0.780	0.782	0.850	0.533

Descriptive statistics:

4.030	4.000	2.000	5.000	0.669	0.902	-0.551
4.303	4.000	2.000	5.000	0.658	-0.296	-0.511
4.175	4.000	3.000	5.000	0.530	0.110	0.148
3.761	4.000	2.000	5.000	0.643	-0.204	-0.023

Correlations

[DataSet1] C:\Users\yumna\Documents\work sheet 3.sav (MS AMENDED).sav

Correlations

		IOC	DIERP	BERP	FP
IOC	Pearson Correlation	1	.430**	.462**	.374**
	Sig. (2-tailed)		.000	.000	.000
	N	235	235	235	235
DIERP	Pearson Correlation	.430**	1	.518**	.260**
	Sig. (2-tailed)	.000		.000	.000
	N	235	235	235	235
BERP	Pearson Correlation	.462**	.518**	1	.562**
	Sig. (2-tailed)	.000	.000		.000
	N	235	235	235	235
FP	Pearson Correlation	.374**	.260**	.562**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	235	235	235	235

**. Correlation is significant at the 0.01 level (2-tailed).

Discriminant validity:

Discriminant Validity

Fornell-Larcker Criterion | Cross Loadings | Heterotrait-Monotrait Ratio (HTMT) | Heterotrait-Monotrait Ratio (HTMT)

	BERP	DIERP	FP	IOC
BERP	0.604			
DIERP	0.455	0.722		
FP	0.643	0.298	0.638	
IOC	0.446	0.446	0.388	0.730

Factor analysis:

Factor Analysis

```
[DataSet1] C:\Users\yumna\Documents\work sheet 3.sav (MS AMENDED).sav
```

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.698
Bartlett's Test of Sphericity	Approx. Chi-Square	238.698
	df	6
	Sig.	.000

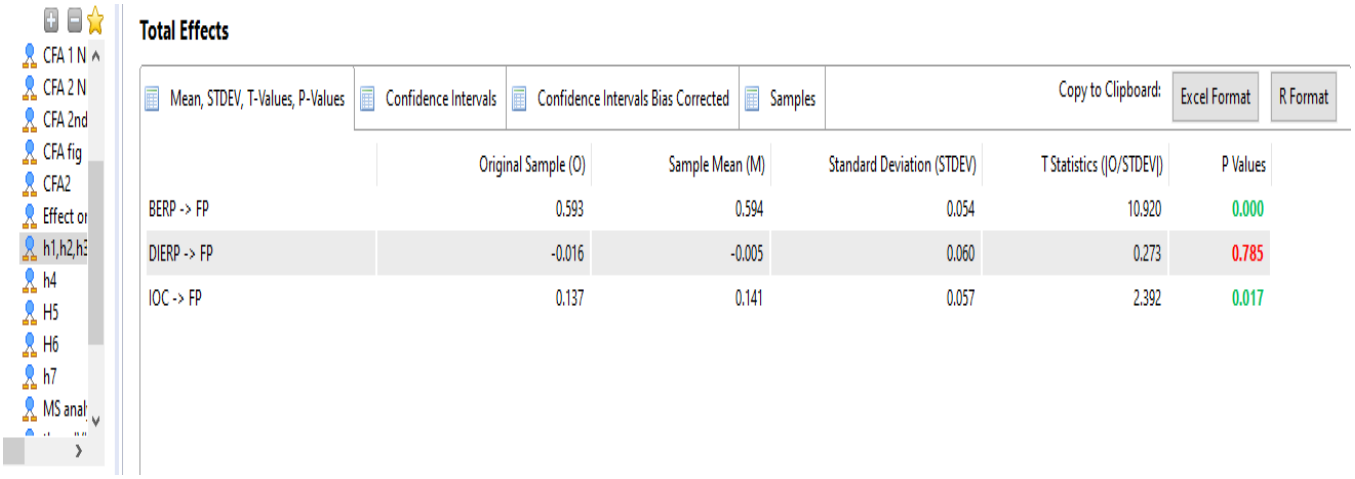
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.313	57.823	57.823	2.313	57.823	57.823
2	.754	18.858	76.681	.754	18.858	76.681
3	.580	14.488	91.169	.580	14.488	91.169
4	.353	8.831	100.000			

Extraction Method: Principal Component Analysis.

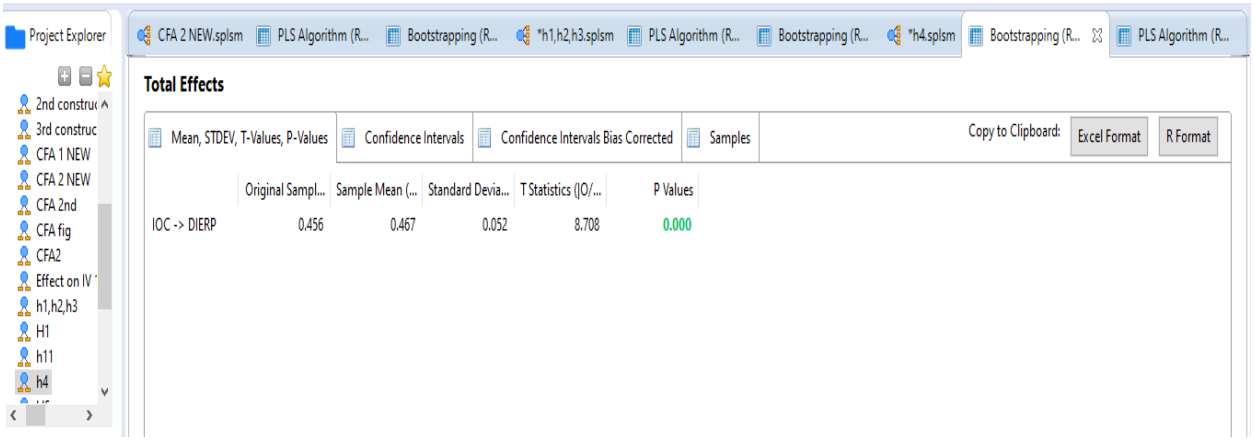
Regression analysis:

H1, H2, H3



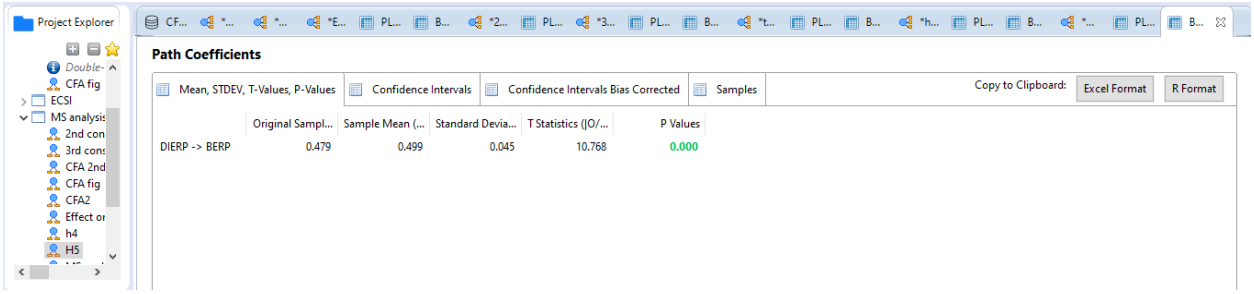
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
BERP -> FP	0.593	0.594	0.054	10.920	0.000
DIERP -> FP	-0.016	-0.005	0.060	0.273	0.785
IOC -> FP	0.137	0.141	0.057	2.392	0.017

H4:

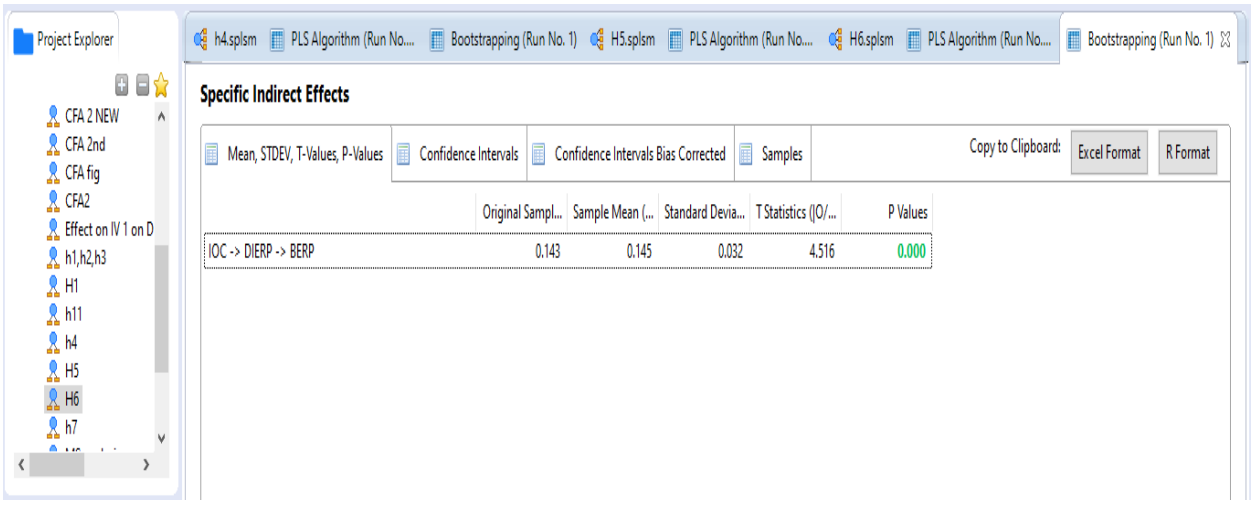


	Original Sampl...	Sample Mean (...	Standard Devia...	T Statistics (|O/...	P Values
IOC -> DIERP	0.456	0.467	0.052	8.708	0.000

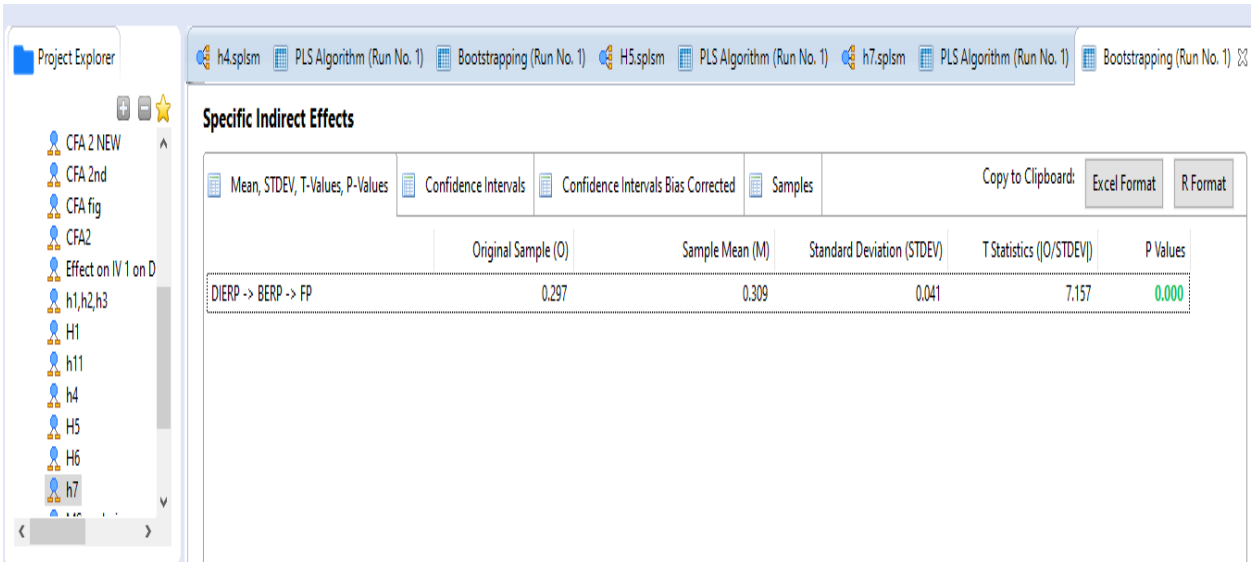
H5:


Project Explorer
Path Coefficients
Mean, STDEV, T-Values, P-Values
Confidence Intervals
Confidence Intervals Bias Corrected
Samples
Copy to Clipboard:
Excel Format
R Format
Original Sampl...
Sample Mean (...
Standard Devia...
T Statistics (|O/...
P Values
DIERP -> BERP
0.479
0.499
0.045
10.768
0.000

H6:


Project Explorer
h4.splsm
PLS Algorithm (Run No....
Bootstrapping (Run No. 1)
H5.splsm
H6.splsm
Specific Indirect Effects
Mean, STDEV, T-Values, P-Values
Confidence Intervals
Confidence Intervals Bias Corrected
Samples
Copy to Clipboard:
Excel Format
R Format
Original Sampl...
Sample Mean (...
Standard Devia...
T Statistics (|O/...
P Values
IOC -> DIERP -> BERP
0.143
0.145
0.032
4.516
0.000

H7:



VIF statistics: