POLITECHNIKA POZNAŃSKA
WYDZIAŁ INŻYNIERII ZARZĄDZANIA

Chaudhary Taimour Khalid

Impact of Intellectual Capital on Opportunity Recognition in SME'S of Pakistan

Promoter: Prof. dr hab. inż. Stefan Trzcieliński

Poznań, 2023

Acknowledgement

I like to extend my utmost appreciation to Prof. dr hab. inż. Stefan Trzcieliński, a highly esteemed professor at Poznan University of Technology, for his consistent and unconditional assistance throughout my doctoral pursuit. The direction and mentoring provided by him have proven to be of great value, and I consider myself lucky to have been afforded the chance to work under his supervision.

The competence, devotion, and commitment of Dr. Trzcieliński have significantly influenced and shaped my PhD experience, particularly in relation to my academic and research efforts. The mentor's perceptive direction, critical critique, and motivational support have not only enhanced the quality of my study but also served as a catalyst for my pursuit of greatness.
In addition, I have found Dr. Trzcieliński's dedication to both teaching and research to be a consistent source of motivation, and I am appreciative of the extensive amount of time he has invested in assisting me in my intellectual development. The guidance provided by my mentor has not only expanded my intellectual perspectives but has also fostered within me a deep admiration for the quest of knowledge.

In conclusion, it is imperative to highlight the exceptional contributions made by Dr. Stefan Trzcieliński over the course of my doctoral pursuit. I would like to convey my profound appreciation for his steadfast support and unflinching dedication. The mentoring provided by him has played a pivotal role in shaping my academic and research pursuits, and I consider myself very lucky to have had the opportunity to work under his expert direction.

Składam serdeczne podziękowania
Profesorowi Stefanowi Trzcielińskiemu
za inspirację, cenne wskazówki
przy opracowywaniu niniejszej pracy,
a także za wsparcie i cierpliwość.

Dedication

I dedicate my thesis to society and those who may benefit from its knowledge and ideas.
In a world where knowledge is power, this thesis empowers people and communities. It is devoted to individuals who need the knowledge and solutions on these pages.

This thesis should inspire and enlighten information searchers. May it guide and inspire people seeking answers. Give the vulnerable and underserved a fair playing field and promote social justice.

This devotion reminds us that academics are about using knowledge to improve the world. It stands for the idea that education and research should empower and improve.
May this thesis's knowledge reach those who need it and help create a better, more equal future for everyone.

Chciałbym serdecznie podziękować mojej żonie i rodzicom
za okazane wsparcie w chwilach zwątpienia,
pomoc i cierpliwość.

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Abstract

Intellectual capital plays in business competitive advantage and performance in both developing and established economies. Intellectual Capital refers to human capital, customer capital, and structural capital. Additionally, research has been conducted to investigate both the direct and indirect effects of IC on performance. In spite of this, it is not quite clear "how each dimension of IC; human capital, customer capital, and structural capital contributes to SMEs efficiency". This is because the indirect influence that IC has on performance. In this context, small and medium-sized enterprises might need support and transform IC into high efficiency. The study has adapted positivism as research paradigm as through stressing the application of factual data and scientific procedures, the school of thought known as positivism establishes a strong foundation. By investigating social processes, this approach hopes to arrive at an unbiased perception of reality. In this study, the link between intellectual capital and opportunity recognition across small and medium-sized businesses (SMEs) was explored using positivism, which offered a suitable framework for collecting and analyzing quantifiable data. The investigation has made a contribution to the current body of information on Intellectual Capital Theory as a result of this research, which is a step in the right direction toward advancing the theory. The research has improved the theoretical knowledge of how intellectual capital improves the capability of small and medium-sized enterprises (SMEs) to recognize and capitalize on opportunities. Specifically, the research has done this by experimentally confirming the links between human, structural, and relational capital with opportunity recognition in SMEs.

Keywords: Intellectual Capital (IC), Small and Medium Enterprises (SMEs) and Opportunity Recognition (OR)

1. Introduction

1.1 Research background

The purpose of this chapter is to serve as an introduction to the research study by giving a summary of the history, problem statement, aims, hypothesis, research design, and overall structure of the dissertation. The study backdrop and motivation stress the importance of small and medium-sized firms (SMEs) in the larger context of Pakistan, emphasizing their relevance in driving economic growth and development. SMEs are referred to in this context as "small and medium-sized businesses." Setting the scene for the study aims and hypothesis, the issue statement highlights a vacuum in the current literature about the influence of intellectual capital on opportunity identification in small and medium-sized enterprises (SMEs) in Pakistan.

Many businesses, particularly in developing nations, are on an ongoing mission to identify the factors that will determine their level of success and ability to continue operating in the competitive marketplace, as a result of globalization and advances in technology. There is no question that there are a range of tangible and intangible (knowledge, research and development, and reputation) factors that contribute to the profitability of a corporation. When taking into account the nature and characteristics of Small and Medium Enterprises such companies are often unable to invest large sums of money in high-risk physical assets because they lack the resources, the support, and the size to do so (Anwar and Ali Shah, 2020). This feeling helps them to recognize other alternatives that are less hazardous, convenient, and easy to embrace so that they can improve their chances of surviving in the marketplace. Since the beginning of this decade, researchers have demonstrated an interest in finding variables that can considerably increase the performance of small and medium-sized enterprises such as government assistance, knowledge exchange creativity, innovation and information technology capabilities, and entrepreneurial orientation (Jiang et al, 2018; De Carvalho and Ferreira, 2001), Studies have also explored the role that intellectual capital (IC) plays in business competitive advantage and performance in both developing and established economies (Kong and Prior, 2008). Intellectual Capital refers to human capital, customer capital, and structural capital. Additionally, research has been conducted to investigate both the direct and indirect effects of IC on performance (Liu, 2017). In spite of this, it is not quite clear "how each dimension of IC; human capital, customer capital, and structural capital contributes to SMEs efficiency"? This

research is an attempt to investigate the influence that each component of IC has on the opportunity recognition of SMEs. However, it is possible that IC may not considerably contribute to efficiency. This is because a number of studies Smriti and Das, (2018) pointed out the indirect influence that IC has on performance. In this context, small and medium-sized enterprises might require some additional variables that might support and transform IC into high efficiency. For example, Cheng and Krumwiede (2017; Haynie et al, 2009) suggest that none of the intangible elements significantly improve performance in environments with high levels of environmental uncertainty; rather, it is the company resources that are necessary to configure the situation that have this effect. In addition, Small and medium-sized enterprises (SMEs) play a significant part in economic growth and contribute to a country's GDP (Audretsch, 2005). In emerging economies, SMEs are the key contributor to national economic development and the major source of employment generation. Generally, large firms are often thought of as the more substantial contributors towards economic development and foreign exchange earnings, but now this point of view has been changed because countries like Korea, Taiwan, and Japan have developed and boosted their economies through Small and Medium Enterprises businesses.

In the developing nation's cases, the role of SMEs is further magnified and boosted because the development of the countries requires the participation of multinational enterprises (MNEs) and SMEs. Moreover, SMEs contribute multiple varieties of benefits, creating jobs that result in a lower cost of capital and having an advantage over large firms because of their elastic and flexible structure. Hence, it is concluded that the development and growth of every nation depend directly on the role of the SME sector. Small and medium-sized businesses in Pakistan's economic landscape, which is dynamic and competitive, are increasingly realizing the relevance of intellectual capital in driving their success and recognizing lucrative opportunities. This is a trend that is driven by the country's increasingly educated workforce. Intellectual capital, which includes a company's intangible assets such as knowledge, expertise, and inventive capabilities, plays a crucial role in boosting the capability of small and medium-sized enterprises to recognize and capitalize on new opportunities. This ability is largely attributable to intellectual capital comprising a company's intangible assets (Baima et al, 2021). Small and medium-sized enterprises in Pakistan can obtain a competitive edge, stimulate innovation, and adapt to changing market dynamics if they successfully leverage their intellectual capital. This would ultimately fuel their growth and contribute to the economic development of the country. This type of innovation is what leads to opportunity recognition, which is the capacity to

recognize new opportunities within a market (Feja, 2017). These opportunities can come in the shape of unsatisfied client wants, rising trends, or unrealized technology developments. According to Ardichvili et al. (2003), having this competence enables organizations to innovate, distinguish themselves from competitors, and obtain a competitive edge. The successful recognition of opportunities requires not only an in-depth knowledge of the dynamics of the market, but also an efficient application of the resources available inside an organization.

The dissemination of knowledge within an economy or an organization can occur through various forms of capital; these components collectively contribute to the overall Intellectual Capital. Effective information communication management plays a crucial role in enabling enterprises to attain success and establish a competitive edge in markets that are outside the reach of their competitors and industry rivals as highlighted by Li et al (2020). Organizations frequently employ human resource management (HRM) practices to facilitate seamless operational processes. However, intellectual capital can play a significant role in fostering high levels of innovation and competitiveness (Donate et al, 2016; Elsetouhi et al, 2015). Information communication is an essential component for manufacturing organizations, as they are involved in manufacturing operations that necessitate advanced analytical and intellectual capabilities. Information and Communication (IC) systems assist industrial organizations in reconfiguring their internal structure and strategic processes, resulting in improved operational efficiency. There are multiple elements that can contribute to improving the efficiency of a corporation. Moreover, it has been observed that intangible resources, particularly intellectual capital, can have a substantial impact on enhancing efficiency when compared to other aspects (Bontempi and Mairesse, 2015). Firms, particularly those operating inside emerging markets, encounter a multitude of challenges, notably the scarcity of resources and expertise.

Therefore, in order to achieve a strong competitive advantage and long-term effectiveness, organizations address their deficiencies through the use of information and communication technologies (Ahangar, 2011). In a fiercely competitive market, whereby a corporation endeavors to achieve high levels of innovation and success, it is imperative to cultivate efficiency, a goal that can be accomplished through the acquisition and utilization of social capital (Hongyun et al, 2019). There is a contention that organizations should prioritize intangible resources, such as intellectual capital in order to attain effectiveness and foster innovative performance within a dynamic market (Cheng and Krumwiede, 2017). The study

found a substantial positive relationship between the components of IC (human, structural, and relational capital) and company efficiency, as shown by a previous study (Kweh et al, 2014). In contemporary times, intellectual capital (IC) has been seen as a crucial intangible asset for commercial entities, particularly within businesses that exhibit advanced technological capabilities and rely heavily on knowledge capital (Hormiga et al, 2011). Moreover, the utilization of IC serves to facilitate the attainment of organizational success by fostering qualities such as innovativeness, creativity, value creation, and competitive advantage within enterprises (Buenstorf, 2007). In summary, Intellectual Capital offers organizations the necessary capacities and resources to establish a competitive edge. A corporation that does not utilize information communication may face challenges in attaining lasting competitive advantage and achieving superior performance within a particular market or industry. Furthermore, the absence of a competitive advantage might lead to a swift withdrawal from the industry (Jain et al, 2017).

Incorporating intellectual capital really helps small and medium-sized businesses (SMEs) understand and make sense of market information much better. Nowadays, because of our super-connected world, companies are bombarded with a lot of information from all over the place. The real trick that sets successful SMEs apart from the rest is their ability to take useful insights from all this info and turn them into strategies they can actually use. By using their intellectual capital, SMEs can deeply understand their target market, what customers like, and where the industry is headed. They can do this by making decisions based on data, doing market research, and looking at what customers are saying. This helps SMEs make smart choices and grab opportunities before their competitors get a chance. In simpler words, having good intellectual capital means SMEs are really good at understanding what's going on in the market. They can use this smart to figure out what customers want and what's going to be big in the future. And that gives them an edge – they can decide and act faster than others in their field.
Moreover, intellectual capital plays a key role in helping small and medium-sized businesses build and maintain important networks, which are crucial for spotting opportunities. Working together and forming strategic partnerships can really influence a company's ability to find and chase new business chances in today's interconnected business world. When small and medium-sized businesses (often called SMEs) have a good amount of intellectual capital, others in the industry see them as valuable partners. This perception opens doors for collaboration and sharing of knowledge. By using the intellectual capital they already possess, SMEs can get better insights into the market, access valuable resources, and discover potential

business ventures. They can achieve this by creating strategic partnerships with customers, suppliers, research institutions, and experts in the field (Gârdan et al, 2018). These partnerships rely on the strengths of the SMEs' intellectual capital. These networks not only expand SMEs' understanding of the market dynamics, but they also improve their visibility and reputation in the industry. This, in turn, makes it simpler for them to go after new opportunities and establish new collaborations. In essence, having strong intellectual capital helps SMEs not only survive but thrive by making the most of the opportunities around them and building fruitful partnerships.

Furthermore, intellectual capital encourages entrepreneurial agility within SMEs, which enables these businesses to quickly adjust to shifting market conditions and capitalize on emerging trends. This is made possible by intellectual capital being a key component of innovation. The capacity to identify and seize opportunities in today's fast-changing business climate is one of the most important factors that determine how successful a company will be. Small and medium-sized businesses with a solid basis of intellectual capital are in a better position to detect developments in the market.

Researching the significance of small and medium-sized businesses has become more important in light of the fact that these companies are substantial contributors to the GDP and employment levels in the nation. Although this is not the case under centralized economic systems, small and medium-sized enterprises have played and continue to play a significant part in the global economy. However, centralized economic systems are on the brink of becoming obsolete. Furthermore, the internationalization of companies has made interdependencies more feasible, which has resulted in a major growth in the role that small and medium-sized enterprises (SMEs) play. Small and medium-sized enterprises (SMEs), despite the fact that they may function in a variety of geographical settings, economies, and cultures of entrepreneurship, nonetheless play an essential part in advancing the state of technological innovation within society. In addition, small and medium-sized enterprises (SMEs) often provide contributions in five primary areas: the creation of new jobs, rapid adaptation in terms of flexibility, the encouragement of entrepreneurial activity, product differentiation or diversification, and becoming a sub-industry in the supply chain function. Below is the Table-1 presents the contribution made by the SME’s of various nations in their export and economic activity, which also highlights that why it is important to study the object with regards to Pakistan in terms of understanding intellectual capital.

Table-1: contribution of SMEs in contribution of Export

Leading Economies	Share of SMEs in Exports
Pakistan	**25%**
India	42%
Japan	38%
United States of America (USA)	36%
Germany	35%
Denmark	33%
Italy	30%
France	27%
England	27%
South Korea	26%
Greece	22%

In order to be successful in the current world, all firms, even SMEs located all over the world; need to conduct their operations in the manner of the modern world. At the end of the 1990s, the societies began the process of developing themselves as knowledge-based economies. This meant that knowledge evolved into a factor that contributed to the expansion of the economy. Modern economics places a higher value on intangible resources than it does on physical ones. As a result of this shift, intangible resources have become more important. As a consequence of this, intellectual capital became a topic of discussion in management research studies. According to Edvinsson et al, (2022), the term "intellectual capital" was first used in the context of management research and referred to as "knowledge that can be converted into something of value." (Agostini et al., 2017), and other studies came to the conclusion that intellectual capital is an essential component in value creation, performance, success, and competitive advantage. Even though IC is of little interest to some of the academics, organizations whose earnings are produced as a consequence of innovative and knowledge-intensive processes have a responsibility to give it significant consideration. There have been various models presented in an effort to have a better knowledge of the IC phenomenon; nonetheless, there have been challenges in its management, measurement, and reporting.

Because of their significant impact on the expansion of the national economy, small and medium-sized enterprises (SMEs) in various industries, in particular, need to place a significant

emphasis on the intellectual capital they possess. It has been found by a number of academics, including (Khalique et al. 2015), that the survival and sustainability of small and medium-sized enterprises is dependent on the capitalization of intellectual capital. According to the research that has been done, small and medium-sized businesses in Pakistan have not been subjected to substantial research about their intellectual capital. As a result, the idea of intellectual capital is still in the formative phases since there hasn't been enough research done within the regional context. Therefore, it has been argued that there is a huge need to feed the notion from a local viewpoint, which may further assist the locally based SMEs in accomplishing development and gaining a competitive edge.

There has not been a lot of study done on intellectual capital or the components of intellectual capital in Pakistan's SMEs, hence the research that has been done is severely imperfect. In Pakistan, small and medium-sized businesses were the ones who were first exposed to the idea of intellectual capital (Khalique et al., 2011). The first activity linked to intellectual capital was begun a decade ago. But each of Pakistan's sectors, including those in which SMEs operate, has its own unique set of obstacles that impedes the country's economic growth and development. According to Kharub et al. (2022), two of the most significant issues that SMEs confront in the current environment are innovation and competition. The constituents of intellectual capital may be regarded as primary pillars of success for influencing knowledge and innovation among small and medium-sized enterprises, which enables these companies to persevere in the face of intense competition in the business world. Now more than ever, small and medium-sized enterprises need to have a solid grasp of what intellectual capital is and how its components work, since this factor plays a significant part in their overall performance.

Motivation

The motivation behind this study lies in the need to bridge the existing research gap concerning intellectual capital's impact on opportunity recognition in Pakistani SMEs. The significance of intellectual capital in the context of opportunity recognition has been more prominent in modern times. Historically, firms conformed to traditional production and manufacturing practices, functioning within established frameworks without the need for novel thinking. Nevertheless, the current epoch is characterized by fluid transformations, whereby the greatest importance is placed on fostering innovation and enhancing value. The current era presents

unique and unparalleled difficulties that need innovative approaches, driven by the ever-changing realm of technology and a wide range of industrial methods.

The dynamic nature of the current environment has presented new challenges for the labour force, necessitating a novel approach to overcome barriers. In the present setting, the significance of intellectual capital assumes a crucial and irreplaceable position. The relevance of this phenomenon is in its universal nature, since it surpasses limitations and may be used to companies on a global scale. Intellectual capital serves as a cohesive element, providing important assistance in tackling the unique issues presented by modern innovations in the global corporate landscape.

Because small and medium-sized businesses play such an important part in the overall economy of the country, it is important to understand how their intellectual capital influences their capacity to spot and grab opportunities so that policies can be developed to maximise their contribution. The purpose of the study is to give significant insights for policymakers, business leaders, and scholars alike by exploring this link in the hopes of improving informed decision-making and supporting the growth of small and medium-sized enterprises within Pakistan.

The research is focusing on Pakistani small and medium-sized businesses as its object of investigation, with the relationship between intellectual capital and opportunity recognition serving as its subject. As, it is impossible to overstate the significance of small and medium-sized firms to the growth and development of any economy Cunningham and Rowley, (2007), and Pakistan's economy is no exception to this rule. The commercial spheres in which these businesses function are frequently dynamic and intensely competitive. In addition, these enterprises are susceptible to a diverse range of challenges and opportunities. In this kind of setting, the skill to spot and make the best of new opportunities is really crucial for the success and survival of small and medium-sized businesses. When talking about finding these new chances, the term "intellectual capital" covers various qualities, like human skills, organizational abilities, and social connections. A growing worry is how intellectual capital affects the ability of smaller businesses in Pakistan to see potential opportunities. Businesses that can effectively use their intellectual capital have an advantage in the changing global business world, which relies more on knowledge and technology. This advantage helps them compete better. In Pakistan, small and medium-sized businesses often deal with problems due to limited resources and money. Intellectual capital could be a very important asset here. These

challenges usually arise from not having enough resources and money. Because of this, it is difficult to recognise and capitalise on opportunities that are still in the process of forming.

In Pakistan, where small and medium-sized enterprises frequently function in difficult conditions characterised by volatile markets and limited access to resources, it is essential to have a solid grasp of how intellectual capital influences opportunity recognition. The purpose of this study is to shed light on whether or whether small and medium-sized enterprises with a more robust intellectual capital base are better positioned to not only overcome problems, but also to proactively identify and exploit opportunities that correspond with their core capabilities. This will be accomplished by evaluating the relationship between the two.

Therefore, the acknowledgement of small and medium-sized businesses as important contributors to Pakistan's economic landscape is at the heart of the motivation for this study. The current research vacuum on how intellectual capital drives opportunity perception in these SMEs holds the promise of identifying techniques that can strengthen both their growth and their resilience. This research gap needs to be filled. The incorporation of pertinent literature highlights the theoretical and practical value of this study, which has the ability to educate policymakers, business leaders, and researchers on strategies to cultivate an environment that is favourable to the growth of SMEs in Pakistan.

1.2 Problem statement, Objectives and Hypothesis

This research focuses on the problem concerning the crucial significance of opportunity recognition in relation to the expansion and achievement of small and medium-sized firms in Pakistan. There is a lack of knowledge regarding the impact of intellectual capital, which includes intangible assets like knowledge, expertise, and inventive capabilities, on the identification of possible growth prospects in the small and medium-sized enterprise (SME) sector in Pakistan. In a country like Pakistan, the importance of SMEs can’t be ignored as 99% of the business are SMEs. According to the Economic Survey of Pakistan (2020), Table 2 presents the breakdown of SMEs according to the regions.

Table 2. Breakdown of SMEs as per Provinces of Pakistan

Province	**Percentage**
Punjab	65.4%
Khyber Pakhtunkhwa	14.3%
Sindh	18%
Baluchistan	2.3%

In order to facilitate the successful utilization of possibilities by small and medium-sized enterprises it is imperative to have a comprehensive understanding of how their intellectual capital influences their capacity to identify and seize prospects. Consequently, there arises a necessity for a thorough examination of this association. Specifically, this knowledge gap exists in the province of Punjab. Although intellectual capital is widely acknowledged as a key factor in promoting innovation and competitiveness, more study needs to be done to investigate the particular influence that it has on opportunity identification in the context of Pakistani small and medium-sized enterprises. The above mentioned research problem statement aims to highlight the need for an in-depth investigation into the relationship between intellectual capital and opportunity recognition, providing valuable insights into the factors contributing to identifying and exploiting opportunities by small and medium-sized enterprises in Pakistan.

Moreover, in a business climate as intensely competitive as this one, the capacity to spot and capitalize on opportunities is very necessary for the continued existence and expansion of small and medium-sized businesses. Small and Medium Enterprises are of great importance and exhibit a diverse range of functions within the economy like for the growth and development of Pakistan's economy because of their involvement in the production of new jobs, the alleviation of poverty, and overall economic expansion They enhance the vitality of the economic structure through the cultivation of competition, the diversification of industries, and the promotion of innovation (Beck et al, 2005). The research emphasizes the significance of small and medium-sized enterprises in stimulating economic growth due to their agility in responding to market dynamics and capitalizing on emerging prospects. In addition, it is worth noting that the labor-intensive nature of the small and medium-sized enterprise sector contributes significantly to generating employment opportunities, especially in areas where large-scale businesses may be relatively limited (Audretsch, 2004). Furthermore, small and medium-sized enterprises frequently serve as breeding grounds for innovation and

entrepreneurship. Smaller firms possess greater agility and flexibility compared to their larger counterparts, hence facilitating their ability to engage in experimentation with innovative ideas and technology. According to Belitski and Liversage (2019), the significant role played by small and medium-sized enterprises in driving technological progress. These enterprises are crucial in addressing market voids through the introduction of innovative products, services, and processes. The capacity to swiftly adapt and make strategic decisions is advantageous in cultivating an environment that promotes creativity and propels economic advancement (Gielnik et al, 2012). Furthermore, small and medium-sized enterprises have the potential to significantly contribute to the advancement of balanced regional development. In regions characterized by a variety of industries, small and medium-sized enterprises have the potential to foster the development of self-sustaining local ecosystems. These initiatives create favorable conditions for local business owners to flourish, thereby mitigating regional inequalities and bolstering the overall economic robustness.

The existence of a strong small and medium-sized enterprise sector enhances economic resilience through the mitigation of reliance on a limited number of major firms. During periods of economic shocks or downturns, small and medium-sized enterprises (SMEs) frequently demonstrate a greater ability to withstand adverse conditions owing to their efficient operations and wide-ranging customer portfolios. The value of a varied small and medium-sized enterprise landscape in mitigating concentration risk and promoting general economic stability is underscored in a study conducted by Dalitso and Peter (2000). This finding holds particular relevance within the context of Pakistan. However, Small and Medium Enterprises encounter a range of obstacles that impede their progress, such as restricted availability of financial resources, intricate legal frameworks, and shortages in skilled labor. Policy interventions have a vital role in creating a conducive climate that facilitates the growth and success of small and medium-sized enterprises (Turner et al., 2016). It is imperative for governments and organizations to offer customized assistance, encompassing financial accessibility, streamlined rules, and specialized training initiatives. The capacity to discover fresh business possibilities, developing market trends, and consumer demands that have the potential to be transformed into viable and lucrative initiatives is what is meant by the term opportunity recognition (Kuckertz et al, 2017; Lumpkin et al, 2004). It is a complicated procedure that is impacted by a wide range of internal and external aspects, including the skills of the company (Filser et al, 2020), the market information it has, the networks it maintains, and the dynamics of its surrounding environment.

In spite of the fact that intellectual capital may have an effect on opportunity recognition, there are not many empirical studies that investigate this link especially within the context of small and medium-sized businesses in Pakistan. The present body of research either focuses mostly on more substantial businesses or is restricted to broad comments on the significance of intellectual capital without providing any actual proof. As a result, there is an urgent need for an all-encompassing research study that investigates the influence that intellectual capital has on opportunity detection in small and medium-sized businesses in Pakistan.

This study intends to address this vacuum by investigating the ways in which intellectual capital impacts the process of opportunity identification in Pakistan's small and medium-sized enterprise sector. By carrying out an in-depth investigation of the many aspects of intellectual capital, including human capital, structural capital, and relational capital. According to Zhang et al, (2021), companies that are able to make better use of their intellectual capital are in a better position to obtain important positions in the competitive modern-day economic climate. In a corporate climate that is highly competitive, organizational innovation is what determines the success of an organization, and intellectual capital is a major factor in that performance. (Henry, 2015; Khalique et al., 2013) The economies are currently transitioning into knowledge-based economies, in which small and medium-sized enterprises play a significant role in both developing and developed countries. SMEs contribute to economic stability, employment creation, innovation, and social cohesion. Small and medium-sized businesses are often regarded as the primary driver of economic development in emerging nations. The use of intellectual capital inside SMEs may increase the efficacy of the businesses, which in turn leads in greater performance. Unfortunately, the percentage of failure of small and medium-sized businesses (SMEs) throughout the world is much greater than the rate of their success, and the rate of failure of SMEs in Pakistan is very near to 95%. In developing economies, particularly Pakistan, there is an urgent need to make the most efficient use of the available intellectual capital. In the long run, this would result in improved economic development and a reduction in the waste of important resources. According to Khalique et al. (2018), an improvement in the utilization of intellectual capital would result in an increase in the success rate of small and medium-sized enterprises (SMEs).

Objectives of the dissertation

The aim of the dissertation is to identify whether intellectual capital affects the ability of Pakistani SME's to recognize opportunities and with what elements of it, this ability can be improved. This goal has two aspects:

- **The theoretical objective**: The aim of the objective is to do a comprehensive examination of existing scholarly literature, encompassing pertinent theories, models, and empirical investigations. Through a comprehensive analysis of the present collection of information, the primary objective of this dissertation is to build a robust theoretical framework for comprehending the correlation between intellectual capital and the capacity of small and medium-sized enterprises (SMEs) in Pakistan to identify and seize opportunities. This objective of this study will seek to make a scholarly contribution to the existing body of knowledge on intellectual capital, opportunity recognition, and their interaction specifically within the context of small and medium-sized enterprises (SMEs).

- **The utilitarian Objective**: The second objective pertains to the practical aspects of the study, emphasizing the tangible ramifications of the research outcomes in real-world contexts. The objective of this component is to facilitate the connection between theoretical knowledge and its practical implementation in real-life situations. This dissertation aims to provide practical insights for policymakers, business leaders, and practitioners in the Pakistani SME sector by examining the impact of intellectual capital on opportunity recognition. The purpose of these insights is to provide information that may be used to make strategic decisions, allocate resources effectively, and develop interventions that improve small and medium-sized enterprises' capacity to see and take advantage of possibilities for growth.

Moreover, to investigate how intellectual capital, which includes human capital, organizational capital, and social capital, impacts the capability of small and medium-sized enterprises (SMEs) in the Pakistani business environment to identify and capitalize on opportunities. Policymakers, business owners, and managers may establish strategies to improve the capacity of small and medium-sized enterprises (SMEs) to recognize and capitalize on prospective possibilities if they first have an awareness of the role that intellectual capital plays in the process of identifying, evaluating, and exploiting chances. In addition, the findings of this

research will throw light on the particular aspects of intellectual capital that, in the context of Pakistani small and medium-sized enterprises (SME) have the most important influence on opportunity recognition.

In addition, to determine the degree to which small and medium-sized enterprises (SMEs) benefit from increased opportunity recognition skills brought about by intellectual capital. Also to determine the variables that make it difficult to recognize opportunities the study will also investigate the possible roadblocks and obstacles that might make it difficult for small and medium-sized enterprises (SMEs) to effectively recognize opportunities. The rationale of this research is to give insights into areas where intellectual capital may be better leveraged to overcome such hurdles. This will be accomplished by identifying these characteristics.

It is anticipated that carrying out this study would add to the current body of information and understanding of the influence intellectual capital has on opportunity identification in small and medium-sized enterprises (SMEs). The findings will not only close the existing research gap, but they will also provide valuable insights for academics, practitioners, and policymakers. This will allow them to make decisions based on accurate information and develop strategies to encourage entrepreneurship, innovation, and sustainable development in the small and medium enterprise (SME) sector of Pakistan.

Research problem

The research problem is the mechanism of the impact of human, structural and relational capital existing in Pakistani SME's and the synergistic impact of these factors on the ability of these enterprises to discover and create market opportunities. There has not been a lot of study done in Pakistan that particularly investigates the part that intellectual capital plays in the process of opportunity detection, despite the fact that it is widely acknowledged that opportunity recognition is critical to the expansion and success of small and medium-sized businesses.

The research issue may be divided into the following essential components:
Absence of empirical evidence: There is a dearth of empirical research that analyses the connection between intellectual capital and opportunity recognition in Pakistan's small and medium-sized enterprise (SME) sector. Although there have been studies conducted on the

subject of opportunity recognition and intellectual capital in other settings, there is a pressing need to investigate the link between the two precisely within the framework of Pakistan's one-of-a-kind economic environment.

Intellectual capital is seen as a significant asset for organizations; nevertheless, there is a lack of complete information of the precise components of intellectual capital and their effect on opportunity identification in small and medium-sized enterprises (SMEs) in Pakistan. This is despite the fact that intellectual capital is recognized as a valuable asset. This study challenge intends to fill this void by investigating the components of intellectual capital and the influence those components have on the identification of opportunities in the context of Pakistani small and medium-sized enterprises (SME).

Barriers to successfully recognizing opportunities Small and medium-sized enterprises (SMEs) in Pakistan often confront a variety of obstacles that may impede their capacity to effectively recognize opportunities and capitalize on them. The research topic entails both the identification of these problems and an investigation into the ways in which intellectual capital may be used to possibly address or overcome these obstacles.

The study topic also shows the need for practical consequences and suggestions that may be obtained from the results. These can be used to the growth of SMEs. It seeks to give actionable insights that may be used by SME owners, managers, policymakers, and other stakeholders to improve the utilization of intellectual capital for enhanced opportunity recognition in the Pakistani SME sector. These insights can be used to increase the utilization of intellectual capital for improved opportunity recognition in the Pakistani SME sector. This study aims to contribute to the current knowledge and understanding of the influence of intellectual capital on opportunity identification in small and medium-sized enterprises (SMEs) in Pakistan by addressing the research concerns that have been identified. The results will give scholars, practitioners, and policymakers with useful insights, which will assist them in the creation of policies and interventions to foster entrepreneurship, innovation, and sustainable growth in the SME sector of Pakistan.

Hypotheses

The research problem was articulated through the main hypothesis of the dissertation, which says that

H0 – As intellectual capital increases, the firm's ability to recognize opportunities (opportunity creation and opportunity discovery) increases.

This hypothesis was decomposed into the following detailed hypotheses:

H1 - An increase in human capital has a positive effect on a company's ability to recognize opportunities (opportunity creation and opportunity discovery)

H2 - An increase in structural capital has a positive impact on a company's ability to recognize opportunities (create and discover opportunities)

H3 - An increase in relational capital has a positive impact on a company's ability to recognize opportunities (create and discover opportunities)

1.3 Research Design of the study

The research design of the study includes the approach used for conducting the study along with timeframe and settings in which the existing study shall be carried out. There are multiple types of research approach; however, the existing study shall deploy quantitative research which includes conducting objective based research. The data collected shall be in numerical form on the basis of a close-ended questionnaire. The research would be conducted on the basis of deductive thinking. The deductive approach is based on developing a hypothesis and examining it on the basis of an existing theory or phenomenon. In this study, the variables of the study include intellectual capital, opportunity recognition and agile methodology. Furthermore, in order to reach to a useful conclusion, the research strategy shall be designed accordingly. The data shall be collected from the SMEs of Pakistan but in order to simplify and focus on the actual population, it is further specified.

The population in the existing study will be the employees of SMEs working across the province of Punjab. The province of Punjab is being selected owing to the fact that it is the largest province of the country. As a province, it is one of the major engines of economy, some of the major cities categorized as economic hub of the entire country are Lahore, Faisalabad, Multan, Bahawalpur, Rawalpindi, Gujranwala, Kasur, Sialkot, Wazirabad, Chiniot and Rahim

Yar Khan. Additionally, the researcher also has convenience of conducting the research from the province of Punjab. The researcher has the convenience owing to two matters as he has associations and links within the province, furthermore, his ancestral roots also belong from the same province. Lastly, the majority of the SMEs in the country have their physical existence in the province of Punjab (65%) with all other provinces far behind.

1.4 Structure of the dissertation

The structure of the dissertation comprises of 4 chapters in total. The first chapter of the report is an introduction that lays the framework for the rest of the study by elaborating on the larger relevance of Small and Medium Enterprises (SMEs) all over the world and their specific function within Pakistan's economic environment. This chapter is the first of three chapters that make up the overall study. It places an emphasis on the numerous contributions of small and medium-sized businesses, such as economic growth, job creation, and the promotion of innovative ideas. This provides a context against which to examine the impetus behind the study, which is the realization that the capacity of small and medium-sized enterprises (SMEs) to recognize and capitalize on opportunities is essential to the maintenance of SMEs' growth and, by extension, to the progress of Pakistan's economy as a whole.

The second chapter is the literature review, and it begins by situating small and medium-sized enterprises (SMEs) within Pakistan's economic framework. It then emphasizes the essential role that SMEs play in propelling economic activity, producing new jobs, and fostering entrepreneurial spirit. It offers a look into the potential and difficulties that are specific to Pakistan's small and medium-sized enterprise sector. Following this, the chapter moves on to discuss the abstract concept of intellectual capital, breaking down its constituent parts and analyzing how it relates to the achievement of success in business. This investigation dissects human capital, relational capital, and structural capital in order to discover how the three types of capital influence opportunity recognition in small and medium-sized enterprises (SMEs).
The methodology chapter, which can be found in chapter 3, is the one that establishes the groundwork for the actual conduct of the study. It begins by presenting the study model that was developed in order to understand the relationship between intellectual capital and opportunity recognition in Pakistan's small and medium-sized businesses. Utilizing this model as a guide, one can investigate the research idea in a systematic manner. The methodology of the research, which is quantitative in character, is appropriate and appropriate given the

research aims. The survey-based data gathering technique is then broken down in great detail in the methodology section that follows. This requires providing an explanation of the thought process that went into the creation of the questionnaire, as well as the procedures that were used to select participants and analyze data. In the chapter titled "Results," which presents the conclusions of the research project, a synthesis of the data obtained through surveys is presented. To effectively communicate the findings, statistical analysis, graphs, and tables are utilized. This study investigates the relationship between intellectual capital and opportunity recognition in Pakistani small and medium-sized businesses in order to test the research hypothesis. Following the presentation of the results is the discussion part, which provides an interpretation of the results' implications, relates the findings back to the aims of the research, and provides insights into the practical consequences of expanded intellectual capital on the opportunity recognition capabilities of SMEs.

The inferences of the research are summarized in chapter 4, which includes a reflection on the information that was gathered. This section analyses the theoretical relevance of the results, focusing on how they contribute to the body of SME research that already exists. The managerial ramifications highlight how small and medium-sized businesses (SMEs) can make use of their intellectual capital to strategically improve their ability to recognize opportunities. It is noted that the study has certain limitations, which helps shed light on potential constraints and issues. At the end of the chapter, a roadmap for future study is shown, outlining potential directions that the discoveries presented thus far can go in order to be expanded upon and investigated further.

2. Theoretical Framework

2.1 SMEs in Pakistan Economy

Small and Medium Enterprises are important enough to give them the required attention as they are key aspect for an economy to progress in a positive manner (Anwar ul Haq et al., 2014). The researchers often go on to the extent of narrating the fact that SMEs are more important for developing countries in comparison to the developed countries (Rao, 2014; Ratten, 2014; Morrison, 2003). One of the components of a strong economic system is the presence and performance of SMEs. At a time when Europe was passing through their worst recession of all time, SMEs were the one who provided them with stability. The 98% of the employment was provided by SMEs to the entire European world (Herman, 2012). The data isn't different in a developed economy like United States (US), as 99% of the employer firms are accounted as SMEs. The 48.5% of employment, 63% of new ventures and 33% of exports, all are contributed and influenced by SMEs. The average age of the SMEs in US is the highest among entire world as most of the SMEs are existent for a period of 10 years or more (SBA, 2014).

Tunnelling down to the economy ranking for doing business activities in the world, Pakistan is ranked 136th from 189 countries in the list of the World Bank, 2018. In the Global Competitiveness Index report, Pakistan is ranked 107th out of 144th countries on the least side. Clearly, the preceding facts indicate that Pakistan's economic situation is at its worst. In Pakistan, 99.9% of established companies are owned by SMEs. They contribute 40% of the country's total GDP, 25% of total exports, 80% of non-agricultural labor force employment, and 35% of manufacturing value added. In fact, the majority of SMEs in Pakistan ceased operations between 1 and 5 years, while others ceased to exist between 6 and 10 years (Khalique et al., 2011). Fewer than 5 to 10 percent of small-scale enterprises in Pakistan continue to develop to maturity. This indicates that Pakistan's SME sector has minimal growth and a high mortality rate. Consequently, the performance of small and medium-sized enterprises (SMEs) in Pakistan is below expectations when compared to other middle-income countries (Bilal et al, 2020). Moreover, the situation becomes more critical, perplexing, and troubling when unemployment, poverty, and hunger, which were supposed to be reduced by SMEs, continue to rise at an alarming rate despite annual incentives and measures (Hassan, Malik, Hasnain, Faiz, and Abbas et al, 2018).

In the previous decade, it was evident that the performance of Pakistani small and medium-sized enterprises (SMEs) was quite abysmal. Low levels of productivity, innovation, unskilled labor force, and competitiveness posed the greatest challenges for firms in developing and sustaining competitive advantage. As time advances, the health status of SMEs has reached an alarmingly high level. It is evident that SMEs currently need more intellectual capital development (Khalique, Bontis, Shaari, and Isa, 2015). This is evident when the Governor of the State Bank of Pakistan stated that Pakistani small and medium-sized enterprises (SMEs) are not operating at a progressive level due to their lack of participation in innovation activities and implementation of an appropriate.

However, the economic survey of Pakistan suggests that SMEs play a critical role. The Government of Pakistan has established a body for promoting and facilitating all small and medium businesses, known as Small and Medium Enterprises Development Authority (SMEDA) (Khan and Khalique, 2014). The primary responsibility of the body is to formulate a policy for the SMEs, establish their financial models, and develop an ecosystem for bringing ease for the SMEs across the country. SMEDA also has a training center in which entrepreneurs are trained and educated. With a population of more than 220 million, which is the among world's largest populated country and the toppers in Asian region along with primarily relying on agricultural sector is in dire need of SMEs promotion (Hyder and Lussier, 2016). Prior to the establishment of SMEDA, the government had another body with the name of Small Business Finance Corporation (SBFC), which was only formed for the purpose of providing loans to the small businesses on a lower interest rate.

However, with the banking sector growing tremendously and the loan function within the economy primarily taken up by the commercial and specialized banks, the very basic purpose of SBFC went away. Despite of creation of the firm, the business didn't that well in the early 2000s (Dar et al., 2017). There could be multiple reasons which have led to the dismal condition of SMEs in Pakistan. One of the reasons could be that definition of SME is not agreed upon as SMEDA carried an effort for 2 consecutive years for narrowing down on classification of SMEs (Saleem, 2008; Syeddah, 2017). They were able to identify a set of firms having paid up capital up to Pakistani Rupees 25 Million and yearly dealing of up to Pakistani Rupees 250 Million, all of them were included by SMEDA as SMEs (Kureshi et al., 2009). The basic difference which went unattended was the segregation of small and medium along with

separation of assembling, trade and service segments, hence, the definition was unable to be concluded (Bilal et al., 2020).

Some studies highlighted the constraints and barriers to the SME's performance, thus indicating that more studies related to SMEs must be conducted to gain a comprehensive finding on the matter. Also, the majority of the literature is centered around the regions like Canada, Latin America, South Africa, the Caribbean, Europe, and the Pacific. Eventually, only some studies have focused on SMEs in the South East Asia region, which includes countries like China, India, and Pakistan (Bilal et al., 2020).

The manufacturing sector is the second greatest contributor to Pakistan's gross domestic product (Pakistan Economic Survey, 2020). The textile industry dominates the manufacturing sector and accounts for 21% of the gross domestic product. In Pakistan, there were a total of 2,7250 SME textile establishments. As shown in Table 1.1 in appendix, the textile industry is, therefore, the most important contributor to Pakistan's manufacturing sector.

According to the research that was done, the failure rate of small and medium-sized businesses (SMEs) is extremely high in developing countries, emerging countries, and developed countries alike. According to previous research, a sizeable proportion of newly established small and medium-sized enterprises (SMEs) fail to survive beyond their first five years in existence. This is something that occurs in the textile industry as well. The performance of Pakistan's textile industry is deteriorating, even though it has historically been one of the country's primary sources of revenue from exports of goods and services. According to Hassan, Malik, Hasnain, Faiz, and Khalique et al. (2015), the most major factors contributing to this reduction are a reliance on older technology and a lack of focus towards innovativeness and the formation of intellectual capital.

The textile industry is the primary contributor to the manufacturing sector, as can be seen in Table 1.1, which can be found above. However, Pakistan's textile sector is expanding at a slower rate than its equivalents in China, India, and Bangladesh (Pakistan Ports and Customs, 2015). Bangladesh's textile industry is one of the fastest growing in the world. Pakistan has been dealing with rivalry from its regional players over the past few years. Pakistan's share of the global textile market fell from 2.2% to 1.8% throughout the last few years, while Bangladesh's share rose from 2% to 3.3%, China's share rose from 4.1% to 5.5%, and India's

share rose from 3.4% to 4.7% as per Pakistan ports and Custom, 2015. Therefore, it would be beneficial to do research on the performance of small and medium-sized enterprises (SMEs) in Pakistan's textile industry.

Furthermore, it was stated by Pakistan Today (2018) in which SMEs contribute to 30% of the Pakistan's GDP, 25% to the overall exports and 78% to industrial employment which reflects the role of SMEs in economic development. Nearly 3.2 Million people are engaged as employees in the SMEs of Pakistan but still Pakistan is being quite behind as compared to their counterparts including China and India who are growing on a tremendous rate. The contribution of Pakistan stands at 30%, India is at 40% and China at 60% (as shown in the figure below):

As per the Economic Survey of Pakistan (2020), Table 3 highlighting the data points and critical aspects of SMEs in the economy of Pakistan.

Table 3: Breakdown of SMEs share in Pakistan's Economy

Total number of establishments	3.2 Million
Total number of SMEs	99% of all enterprises
Contribution in employment	90%
Total contribution by SMEs (in employment)	78%
Average no. of employees in SMEs	1 – 10 individuals
Share in exports	25%
Share in GDP	30%

SMEs in Pakistan keep on suffering from the shortcomings as they are unable to take the full use of the opening of the economy and the available world markets. The other territories which have remained compromised are financial complications including financing, credit availability, and taxation and even including the capacity and ability to trade (Pakistan economic survey, 2020). In ease of doing business, Pakistan also suffered for a major chunk of time, in 2010, Pakistan was ranked as 96 among 183 but then it kept on falling to 105 in 2011, 106 in 2012, 110 in 2013, 136 in 2014, 148 in 2015, 144 in 2016, 147 in 2017, and 136 in 2018.

But it improved tremendously in 2019 to 108 (World Bank Report, 2020). In a major city of Pakistan, Karachi, which is also the economic hub of the country, only 9% of the youngsters are engaged in running their own business (Zafar et al., 2017).

The poor performance of SMEs is one of the reasons of having poor economic performance (Osotimehin et al, 2012). The problems being faced need to be analyzed by the government so the issues can be resolved, and business performance can be improved. SMEs also talk of the lack of support from the government or regulatory bodies but government keeps on mentioning of their initiatives, hence, there is a need to bridge this much needed gap. But SMEs also need to capitalize on the available opportunities by applying intellectual capital and making their enterprises as agile (Agarwal et al, 2006). This can help them in improving their performance and raising the economy. A paradigm shift is taking place in Pakistani companies' perspectives on, and approaches to, making use of their intellectual capital. Pakistan is a country with a thriving entrepreneurial culture and a burgeoning SME sector.

Historically, Pakistani small and medium-sized enterprises gauged their level of competitive advantage by using tangible assets such as physical facilities and financial resources. However, the rapidly changing business environment, which is characterized by rapid technology breakthroughs, globalization, and knowledge-based economies, has prompted a revaluation of the variables that lead to sustainable success. This revaluation was needed due to the need to account for the effects of these changes. Increasing numbers of small and medium-sized enterprises (SMEs) are realizing that their intellectual capital—frequently kept secret within their employees' heads and ingrained within their organizations' operations—is the primary factor in determining whether or not they will be successful in the long run. In addition, the significance of intellectual capital in the process of opportunity recognition in small and medium-sized enterprises is mainly unexplored, especially in the context of small and medium-sized enterprises in Pakistan, despite the fact that prior research has investigated the elements that influence opportunity identification in SMEs. The ties that a company has with various stakeholders, such as customers, suppliers, and partners, are what constitute the company's relational capital. These several types of intellectual capital, when combined, provide the groundwork for new product development, increased levels of competition, and long-term economic expansion (Ciric et al, 2018).

2.2 Intellectual Capital

The 21st century has brought up the concept of knowledge economy and intangible assets are among the major resources of the organization. These intangible assets can also be termed as intellectual capital which is an important part of the organization's resources (Alvino et al., 2020). Intellectual capital has not only been researched in the field of management but also applied to the practice. Many researchers had aimed to define the concept of intellectual capital but majority of the researchers agree to as he defined intellectual capital as knowledge based resource including property, protocols, tacit knowledge and systems. Initially, intellectual capital was based on two components including human capital and structural capital. The abilities, expertise and skills of individuals formed human capital, whereas the procedures and policies made structural capital. Both of the structures were aimed at boosting the market performance of the organization.

Later on, a sub-category of structural capital was made including administrative structure and technical structure. But intellectual capital into three different components including human, structural and relational capital. A widespread definition of intellectual capital has been provided recently, he defines it as acquisition of experience, knowledge, professional skills, and technological capacities; when executed, it brings benefits to the organization. Tracing the journey of intellectual capital, one can go up to 1969, when for the first-time intellectual capital model was discovered in a letter from John Kenneth Galbraith to Michael Kalecki. However, it was first researched in 1991 by Tom Stewart. Resource based view (RBV) suggests that intellectual capital is a primary source for improving performance of the business (Edvinsson et al, 2022; Collins, 2021).

The importance of both tangible and intangible resources in the reality of sustainable performance in a volatile market is highlighted by RBV theory. For high performance, productivity, and competitive advantage, both resources are absolutely essential (Vadi et al, 2019). Recent studies, however, contend that intangible elements are more important than tangible ones when it comes to productivity and sustained competitive advantage in SMEs (Pattanayak, 2019). Several researches like Ying et al, (2019) corroborate this idea. IC is seen as an intangible factor that has continued to be a prominent force behind SMEs' profitability, long-term viability, and opportunity exploitation. The lack of resources in SMEs, their size, and their inability to invest in tangible resources are the driving forces behind the importance

of intangible resources in SMEs. For instance, Kraja (2018) did a study to compare the significance of tangible and intangible resources and found that the performance of SMEs is more strongly influenced by intangible resources. Khan et al (2019) also made the case that investing in intangible resources enables rising SMEs to achieve superior performance in the competitive marketplaces. In fact, intangible resources cost less yet offer more benefits. To strengthen their position in the market, SMEs therefore place a strong emphasis on intangible resources, particularly IC (Jain et al, 2017). One of the most important business decisions is investing in human capital because it considerably increases productivity (Onkelinx et al, 2016; Davidsson and Honig, 2003). Human capital considerably and favorably raises the productivity of both private and public firms in China, according to Kong and Kong (2017). According to Haris et al, (2019), structural capital in Pakistan's rising market considerably supports the banking industry's profitability. As stated by Stam, (2005, p. 139–140), "Structural capital is, what Romer would call "ideas," because it can be recreated at cheap cost and on a vast scale. This suggests that the real driver of productivity is structural capital. Leal-Millán et al, (2016) also state that customer capital is essential for performance and sustainability in a challenging environment since customer knowledge results in greater advantages. Therefore, it has been observed that the RBV theory's central thesis—that IC, an intangible asset, plays a critical role in SMEs' productivity and gaining opportunity—is supported by a substantial body of research.

As a result of this, most of the researchers had studied intellectual capital and its role on business (Bontis, 2000). Mostly research studies have been conducted on intellectual capital and its role on organization’s performance but the factor which has been ignored is to study the components of intellectual capital. The literature not only has a different view of intellectual capital alone but it is also divided on components and their definitions. However, majority of the components agreed by the researchers are human, structural and relational capital. Keeping in view, the influence and impact, intellectual capital can have, various methods were created for measuring intellectual capital.

Few of the widely used methods for measuring intellectual capital were EVA, MVA, Balanced Scorecard, Calculated Intangible Value, Intellectual Capital Services (IC Index), Skandia IC Navigator, Tobin’s Q, Technoloy Broker’s IC Audit, Intangible Asset Monitor, and Value Added Intellectual Coefficient (VAIC) model (Bontis, 2001; Isola et al, 2017).

VAIC model has been used for measuring intellectual capital in Pakistani Banks and following table 4 represents the same

Table 4: Intellectual capital measurements in banks of Pakistan

Year	VAIC	CEE	HCE	SCE	VA (Rs.MN)	VA-Growth
2007	4.2805	0.2897	3.2943	0.6964	153,954	-
2008	2.9774	0.2833	2.1576	0.5365	148,939	−0.0326
2009	3.0766	0.2917	2.2328	0.5521	180,547	0.2122
2010	3.2144	0.3273	2.3184	0.5687	216,163	0.1973
2011	3.7337	0.3842	2.7175	0.632	292,035	0.3510
2012	3.5744	0.3721	2.5886	0.6137	320,523	0.0975
2013	3.3498	0.3455	2.4179	0.5864	319,024	−0.0047
2014	3.7437	0.3393	2.766	0.6385	408,827	0.2815
2015	4.1058	0.3941	3.0406	0.6711	494,906	0.2106
2016	3.9186	0.3926	2.874	0.652	508,029	0.0265
2007–2016	**3.5975**	**0.3420**	**2.6408**	**0.6147**		

Notes: VAIC, Value added intellectual capital coefficient; CEE, Capital employed efficiency; HCE, Human capital efficiency; SCE, Structural capital efficiency; VA, Value-added. Period 2007–2016 represents average results. VA-Growth represents the annual growth in value added of banking industry. The negative VA growth during the year 2008 and 2013 was due to the government elections in Pakistan. Source: compiled by authors.

Source: Haris et al., (2019)

In this day and age of globalization, information has become one of the most vital aspects for the organization. The information is not classified as the data carried in the systems of the organization rather it is the skills, knowledge and intellect ability of the individuals of the organization (Topal et al., 2013). This sort of capital possessed by the organization is termed as intellectual capital. This sort of capital is intangible but of high value for the firms. This is abstract in the business world but gives competitive advantage over the other firms (Bontis, 2001; Topal et al., 2013). Intellectual capital is also observed as the mixture of two processes, in which one is the combination of intellect and second is related to exchanging of the same (McGrath and Sparks, 2006; Razzaque, 2019). This can be understood by the fact that when intellectual capital is combined with the new and existing knowledge which was previously present but lacked its connectivity. In line to the same, the exchange process takes place when this knowledge is connected between the individuals or factors. In simplistic terms, it can be said that those potential factors which are already present in the organization but are then converted into useful assets are categorized as intellectual capital (Grajkowska, 2011).

The term of intellectual capital was first coined in 1969 by John Galbraith, he defined intellectual capital as the contribution put in by the individuals in their personal capacity. The concept was further extended as other aspects were added in the intellectual capital. The aspects of education, knowledge, information, intellectual property and expertise was added in the concept of intellectual capital (Carrell, 2007). The concept is narrated by multiple scholars and in the modern-day business environment, it has become more relevant to study the same as businesses face numerous challenges. Intellectual capital has been studied around the globe and it is worthwhile of mentioning that what the researchers have been able to found out. The Serbian research scholar comments on intellectual capital in a manner which suggests that it has multiple benefits for the organization. Firstly, the benefits are for a longer period of time, secondly, the assets don't have physical presence, but they have importance as high as any of the financial resources of the organization. Furthermore, it adds value for the enterprises and components of the intellectual property are associated with one another. Lastly, more are the intellectual assets used more is the potential of intellectual capital to increase in comparison to other assets which are reduced when used.

Intellectual capital has been stated as the foundation of creating a advantage or a factor of consistent growth for the organization. The three components of intellectual capital were broadly divided into three categories, human capital, structural capital and relational capital. The studies have also found out that intellectual capital is significantly associated with knowledge management and organizational performance (Khaliq et al., 2016). In Pakistan, intellectual capital needs to be studied in line with SMEs as these enterprises play an important role in developing economies. Intellectual capital when studied with SMEs, it has been found to be positively associated with the performance of SMEs.

However, the results in Pakistan are indifferent as some of the components have been found to be negatively associated, whereas some of those have been found out to be moderate to significantly associated (Khalique et al., 2015). Human capital in some of the studies have been found to be either negatively or moderately significant but is categorized as key component for the organizations to progress and prosper but the findings are indifferent in Pakistan. There could be multiple reasons for the same but one of the reasons is the underdeveloped knowledge economy of Pakistan as it doesn't stand at par with the knowledge intensive economies, such as, Finland, Sweden or may be even China (Khalique et al., 2020).

The studies had also highlighted the importance of human capital as a component of intellectual capital and one of the critical success factors for enhanced organizational performance (Chen et al., 2006; Boarini et al, 2012). The human capital has not been so much significant in the context of Pakistan but it could be improved with building capacity of the individuals, but the training setup or industry of the country is also in woes. One of the major barriers for the poor performance of SMEs is the lack of skilled labor force in the job market, and employers don't have such lucrative packages for the ones who are competent enough (Khalique et al., 2015). Another challenge for the SMEs is that there is a lack of communication between the regulatory bodies, government establishments or bodies and SMEs (Fayyaz et al., 2009; Memon et al., 2005).

The lack of major emphasis on human capital in Pakistan is a pressing concern that deserves attention. The workforce's skills, knowledge, and expertise, together known as human capital, have a significant impact on fostering innovation, enhancing productivity, and facilitating economic growth. Nevertheless, the current state of affairs indicates a dearth of focus on augmenting the aptitudes and capabilities of individuals. The issue at hand is of significant importance, since the presence of a well-developed human capital foundation is crucial for fostering a skilled workforce that possesses the ability to recognize and seize economic prospects. Furthermore, the enhancement of human capital is widely acknowledged to be a viable approach for building capacity, with training being a key technique in this regard (Sima et al, 2020) .

Nevertheless, the provided material sheds insight on the obstacles encountered by Pakistan's training infrastructure and industrial sector. The inadequate condition of training facilities and resources has the potential to impede individuals' ability to obtain high-quality education and develop essential skills. The aforementioned factor has a direct influence on the capacity to develop a proficient labor force that can make valuable contributions to the expansion of small and medium enterprises (SMEs). The presence of inadequate training infrastructure has a detrimental impact on the capacity to address the skills gap and impedes the cultivation of a skilled workforce (Mashenene, 2014).

Additionally, the dearth of proficient workforce in the employment market poses a substantial barrier to the performance of small and medium-sized enterprises (SMEs). In order for small and medium-sized enterprises (SMEs) to achieve success, it is imperative that they possess a

workforce consisting of proficient individuals capable of fostering innovation, effectively overseeing operational processes, and promptly adapting to market dynamics. Nevertheless, the data emphasizes the scarcity of skilled labor in terms of availability. Moreover, the difficulty is exacerbated by the absence of appealing remuneration packages for capable workers. The current circumstances pose challenges for small and medium-sized enterprises (SMEs) in their efforts to attract and retain the required workforce, hence hindering their capacity to effectively use human resources for identifying opportunities and achieving growth. The presence of a communication gap among regulatory agencies, government entities, and small and medium enterprises (SMEs) presents an additional obstacle. The establishment of an enabling environment for businesses necessitates the presence of effective communication (Wu et al, 2018).

The absence of well-defined communication channels and effective coordination among diverse stakeholders presents challenges for small and medium enterprises (SMEs) in comprehending legislation, receiving help, and aligning their goals with government objectives. This may impede their capacity to navigate the business environment, adjust to evolving circumstances, and efficiently exploit opportunities. The aforementioned compounded issues contribute to a weakened framework for small and medium enterprises (SMEs) in Pakistan. The absence of proficient workforce, insufficient training facilities, and communication deficiencies collectively contribute to a challenging environment for small and medium enterprises (SMEs) to prosper. The compromised structure restricts their capacity to utilize intellectual resources, hinders their potential to recognize and exploit possibilities, and ultimately impacts their overall performance.

Hence, the aforementioned problems underscore the intricate interaction of several factors that influence the development of human capital and the performance of small and medium enterprises (SMEs) in Pakistan. To effectively tackle these difficulties, it is imperative to foster collaboration among governmental bodies, industry participants, and educational establishments. Enhancing the training infrastructure, facilitating skill development, establishing effective communication channels, and implementing supporting policies can all contribute to the enhancement of human capital and enable small and medium enterprises (SMEs) to overcome barriers and realize their growth potential. The framework for SMEs is compromised, therefore, it becomes difficult for them to thrive in such a scenario.

2.2.1 Human Capital

The concept of human capital is derived from the term of intellectual capital, as it has been categorized as one of the components of intellectual capital. The set of skills and knowledge which includes all individuals' knowledge, abilities, skills, capabilities, experience, wisdom, attitude, commitment and creativeness used for stimulating economic growth is known as human capital (Chen et al., 2006; Yong et al , 2022). Human capital has been categorized into two different types; one is the general human capital and second, specific human capital. The skills, knowledge, and capabilities that are valuable for performing activities and task within the firm are known as general human capital. Secondly, the skills and capabilities that an individual has for working in a specific firm, industry or a specific geographical area is termed as specific human capital (Florin and Schultze, 2000; Seth, 2014).

Human capital is not only termed as a component of intellectual capital, but they are significantly associated with the financial performance of the organizations. The financial performance is a critical aspect of business performance and if human capital is positively significant, it means that human capital is critical for the organizations (Moradi et al., 2013). Likewise, the findings were replicated in the IT industry as Managers reported that human capital has positive effects on the organization performance (Seleim et al., 2007; Mahmood, 2015; Kang et al, 2015). One of the aspect of viewing human capital is in the form of teamwork as it helps the organization in providing them competitive advantage over their rivals. As a result of that, the organizations reward their employees in a better manner as compared to their earlier appraisals. In addition to that, teamwork is one of the vital factors which helps organizations in not only learning but exchanging information among others (Choudhury and Mishra, 2010). Intellectual capital was researched in manufacturing firms of Malaysia and it was found out that human capital has the greatest of impact on entrepreneurial intentions for the owners as well as organizational performance (Mohammad et al., 2013).

More often or not, it is said that human capital is the most important capital out of all but why is it so. The main reason is that it is considered as an indispensable resource for an organization. It is difficult to imitate and improves competitiveness for the firms which as a result makes the organization vibrant in the external market (Diez et al., 2010; Andes et al, 2020). The organizations which are working on a global level can benefit to the maximum extent with the use of human capital as it increases productivity on a global level (Cannon, 2000; Kim et al,

2014,2018). One of the critical success factors for an organization is not intellectual capital as collectively but human capital solely also plays a significant role on the performance of a firm (Marques et. al. 2022; Al-Omoush et al, 2022).

The world is moving at a rapid pace and so are the businesses, therefore, there is a need to study human capital in industry 4.0. Implementation of new technologies impacts organizations as well as individuals; therefore, there is a need to look HR from this lens. The research suggests that there are six types of HR practices that have a major influence on organization. This includes policy making, training, recruitment, rewards, job design and knowledge management. These practices can lead to improved organizational performance as this equips people with new skills ultimately improving human capital (Hussain et al, 2015). There is an ever so required need of identifying organizational level strategies which can help to adapt to the substitute of human workers through using robots and automation (Ahmad et al., 2013).

Industry 4.0 is powered by the real time exchange of information and this cannot take place without automation. Previously, technological model was information + knowledge + innovation but the model has now changed to human intelligence + new information technology + information + innovation. Therefore, the creativity factor which is strongly influenced by human capital is the qualitative input into it. There is also a need for adapting the employee training programs accordingly so employees can learn knowledge which would actually contribute to industry 4.0. The new industry might have changed roles for some of the earlier human tasks as use of automation has already made those changes. But research ON human capital will undergo a major transformation but would have a major role to play for businesses to grow. Modern day business environment is complex enough and no one has his or her own silo of work, whether someone is a designer, worker, manager or a customer; all are involved in the entire production system. Therefore, the future belongs to integration of all individuals involved and same to be communicated among all stakeholders.

2.2.2 Relational Capital

Relational capital covers the aspects of social capital and customer capital but it has remained quite unexplored in comparison to other two components of intellectual property (Bontis et al., 2000; Hussinki et al, 2019). Relational capital can be termed as the sum of those intangible assets that are embedded among the suppliers, customers, governments and other industry associations. Due to the scope of this component of intellectual capital which has a large width and breadth, the potential of organization enhances with deploying relational capital. The other perspective with relational capital is that it develops trust among the stakeholders of the organization and strengthens the relationship which improves future dealings.

Another benefit that relational capital has on the organization is that it develops the organization. The overall suppliers network improves if the organization has an intellect network of suppliers. In this manner, the overall supplier network develops which is a part of larger organizational development (Blonska et al., 2013). The internal environment of the organization has also been found out to closely related with relational capital. If there is a meaningful and strong relationship between the individuals in the organization, it will create a positive work environment which would help the organization in managing its intangible assets (Danaei and Normohammadi, 2013). The better the relational capital is more are the chances that the relationships will last whether they are customers, suppliers or employees (Liu et al., 2010). The need of relational capital is not only for the externals, but the employees need to be high on it as well. The employees have to serve the customers; therefore, they should know how to build relationships and then foster them for a longer period of time, this is how the overall efficiency of the organizations can improve (Ali and Ali, 2022). Hence, the same study suggests that employees need to be trained for developing and improving their relational capital. When intellectual capital was studied in a local organization in a developing economy, it was clarified that organizations need to build and strengthen relationships with customers, suppliers and the community for which they work for (Nejadirani et al., 2012).

Majority of researchers had studied relational capital and presented their definitions, majority of the findings indicate that relational capital promotes collective learning, productivity, innovation, financial development, new capabilities and its development. However, development of relational capital requires time as long as five years for getting mature in order to reap benefits from it(Vahlne et al, 2019). Capitalizing the relational capital can pay dividends

during turbulent times. Likewise, Hartmann and Herb, (2014) identifies that firms who have strong ties with their partners often focus on strengthening relational capital due to higher switching costs.

However, strong ties do benefit the firms as well as they can help provide information of those markets in which business tends to enter (Phene et al, 2012). If realizing the true potential of relational capital, it can facilitate knowledge and information exchanges, increases awareness of potential opportunities, and identifies key partners (Zhou et al., 2007; Gao et al, 2015). One of the vital factor identified was that relational capital becomes more critical when supporting institutions are not strong enough. Hence, researchers come to a conclusion that firms should rely heavily on relational capital for uncertain situations as it can help them come out of it.
Researchers have identified that relational capital is important but a complex and multidimensional concept (Kwon and Arenious, 2010; Johnston and Lane, 2018). Historically, there have been three different school of thoughts, first is led by (Liu et al, 2014) who argues that it is based on social organization of trust, netwroks and norms working with a coordinated action. Second school of thought on social capital is put forward by Rogošić et al, 2016, his view of relational capital is of a resource founded among a network and is accessible to its community. The third and last school of though is by Lee et al, 2018, a functional approach is taken for defining relational capital as it is relationship among common people for achieving objectives.

2.2.3 Structural Capital

All those valuable assets which are non-human categorize as structural capital. The assets which are included in the structural capital are patents, concepts, models, charts, manuals, databases, strategies and related are identified as structural capital (Bontis et al., 2000); Hameed and Anwar, (2018). The researchers go on to explain it in simplistic terms as it is what's left in the company after employees go home. The organizations that have basic structural capital in place allows individuals to learn new concepts and share ideas which support performance in a positive manner. Furthermore, supportive structural capital facilitates human capital and other components of the intellectual capital but if it is poor then the entire intellectual capital may fall upon (Seleim et al., 2004; Ali et al, 2022). Like human capital, structural capital also facilitates in creating competitive advantage for the firms in which

growth, productivity and overall quality is impacted (Akdemir & Akpinar, 2003; Vovk et al, 2015).

The structural capital has four basic elements including system, structure, strategy and culture. System is the way in which organization works including decision making patterns, communication channels, information sharing mechanism, and product or service offered. Structure is how well the organization has clarified responsibilities for different positions and how each of those positions are aligned with one another. The next element of strategy is the procedure in which company plans and acts towards its goals and objectives. Lastly, culture is how the individuals act within the organization as people have similar beliefs, values, norms and rituals (Agndal and Nilsson, 2006; Jabłoński et al, 2019).

A firm can go on to improve the innovation and creativity within the firm if structural capital is well-established. The entrepreneurial activities can prosper within the organization and structural capital is also identified as a glue for the organization which helps it stick all of its critical components in place (Moradi et al., 2013). A firm can apparently work fine but value addition can be brought with the use of structural capital. Furthermore, it helps in gaining competitive advantage over the competitors which then gain a critical place for the organization (Khalique et al., 2011). The studies also suggest that structural capital is the one sort of component of intellectual capital that not only improves the elements of structural capital but it is contributive towards influencing other sorts of capital as well. A study conducted in the National Oil Company found out that structural capital can improve organizational performance but at the same time, it also influences human capital (Ahmadi et al., 2013).

The skeleton of the organization can be termed as structural capital. It is one of the important components of intellectual capital. The data, systems, rules, procedures and policies of the organization are referred as structural capital. Some of the researchers agree to the notion that structural capital is most critical component for SMEs as this helps them to record data of their stakeholders and act accordingly as per the governing mechanism of the organization.

Ferreira and Franco (2017) identify that structural capital includes as substantial as licenses, trademarks and databases, whereas, as implicit areas, such as, culture, trust and workplace climate. This is a sort of capital that is strongly influenced by human capital but this is one of

the missing links too. The ideas, licenses, models and framework included in structural capital is made up by individuals but has the ownership rights under the banner of organization. Structural capital covers a wide range of essential elements of the organization including the key business processes. With the help of structural capital, planning can be improved with the use of better management structure through use of information and knowledge for having participatory decision making (Yoon et al., 2017). It is often said that relationships with internal and external stakeholders needs to be made but is this really that easy but in actual, it is a complex mechanism. But with the help of structural capital, the organization can create a framework for knowledge sharing that helps improve the relationship between partners (Gravili et al, 2021; Foss et al, 2013).

2.3 Opportunity Recognition

2.3.1 An Opportunity

Opportunity is a concept that is frequently utilized in managerial and business studies. It is frequently mentioned while talking about the flexibility of the business and is related to entrepreneurship studies. In the relevant literature, the definition of the phrase opportunity is relatively scarce. Entrepreneurship is more frequently used to define it. According to Shane (2003) definition of entrepreneurship, for instance, it is "an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organizing, markets, processes, and raw materials through organizing efforts that previously had not existed". Lewin (2015) notes in his study of Kirzner's writings that the entrepreneurial act for Kirzner is made up of and only of the fleeting awareness of the arbitrage opportunity; it is a revelation or an epiphany Entrepreneurship, according to Kirzner (1973), is the capacity to recognize fresh opportunities. The market will likely "correct" as a result of this realization and grabbing the chance, returning it to equilibrium.

The definitions of opportunity frequently mention when market instability occurs. For instance, Choi and Shepherd propose that chances exist when there is a demand from customers for a new product. Similar to this, Kaish and Gilad describe opportunities as market inequities as mentioned in Shane and Venkataraman (2000) . Alvarez and Barney (2007), describe it as a flaw in the market. This is the basic form of opportunity; however, most researcher’s definitions are more specific, adding on to this idea. One of those more detailed explanations can be” Opportunities are passing situations happening in the subject’s environment which are

a necessary condition for reaching the desirable result or aim intended by the subject" (Trzcieliński, 2007, p.62)

Baron defines opportunity as a perceived means of generating economic value (i.e., profit) that previously has not been exploited and is not currently being exploited by others (Baron, 2006) . The opportunity's objectivity is a crucial distinction. The opportunity can be viewed as an objective market circumstance, regardless of whether a person perceives it or not (Koczerga, 2014, p.91). However, some definitions refer to a subjective opportunity, which is a circumstance that only qualifies as an opportunity as a result of being identified and taken advantage of by a person or organization. In other words, objective opportunity can be accessed by all businesses, however subjective opportunity can only be accessed by one (Trzcieliski, 2007, p.63). The use of an opportunity necessitates a creative combination of resources to provide higher value, according to Ardichvili et al, (2003), who identified this as a key component of the concept of the opportunity. The opportunity to get a pension from the funds involved is discovered or established, according to Douhan and Henrekson (2010). In general, it appears preferable to discuss obtaining the targeted result or aim, which in a unique circumstance might be a pension.

2.3.2 Opportunity Recognition literature review

Opportunity recognition is considered to be one of the entrepreneurial aspects, therefore, most of the studies have reviewed it from entrepreneurial lenses (Chang and Cheng, 2020). One of the way of understanding the opportunity as a concept comes from the entrepreneurial perspective. Entrepreneurial opportunities can be defined as "situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production" (Shane and Venkataraman, 2000, p. 220). This definition emphasizes the profit side of the production of goods. In the book "Opportunity Identification and Entrepreneurial Behavior", the authors recognize three main aspects of the opportunity: newness, potential economic value and desirability (Baron, 2006, p.50). These definitions offer a perspective on the inventiveness of the solution, the potential profit from capitalizing on the circumstance, and potential cost savings. According to this interpretation, the core of an opportunity would be the need for the new products to be offered or innovation that would result in a decrease in costs and, as a result, higher profits. Opportunities are generally capitalized with the help of information, such that, whenever there is an opportunity, the logical

question for gaining information is regarding the sources. Literature suggests that in these scenarios, entrepreneurs acquire information with the help of their jobs, such as, gaining information from people working in Research or Marketing etc. (Klepper and Sleeper, 2001).

Literature presents different perspectives of opportunity recognition, however, the main idea of majority of researchers was that information has a critical role in recognition of opportunities. This is categorized as first step in new venture creation (Gaglio et al, 2017). Earlier studies had also studied opportunity recognition from the ever-changing pattern of technology, politics and economics(Shane, 2003; Ko et al, 2006). Information collection, a crucial component of the approach of opportunity discovery, is further explored in the networking section (Corbett, 2007; Hsieh et al, 2007). The ability to find an opportunity increases with access to the necessary knowledge. Entrepreneurs that are actively looking for opportunities use their resources to study and research. It frequently comes from their own formal or informal business connections, a mentor, or involvement in relevant industry gatherings and seminars. They don't necessarily need to be people the person has a formal business contact with; rather, they can be part of a network of "weak ties" that can offer some relevant information (Ardichvili, Cardozo, and Ray, 2003, p. 115). Conferences, in particular, can be a vital source of these connections. It could be a conference related to the company's industry or an idea conference, where participants from other disciplines get together to share their ideas and perspectives (Dyer, Gregersen, and Christensen, 2009, p. 6).

Opportunities recognition are passing occurrences occurring in the subject's surroundings that are a prerequisite for achieving the desired outcome or purpose intended by the subject, according to one of those more in-depth interpretations (Trzcieliski, 2007, p. 62). The important aspect of this definition is that, since the opportunities stem from the changes in environment, they can be to some extent predicted and anticipated, and in case of agile enterprises, this process of the opportunity recognition is modelled (Trzcieliński, 2007, p.64). This understanding clearly indicates how the opportunity fits with the agile enterprise framework. The whole essence of the agility of an enterprise is to quickly notice and evaluate threats and opportunities from its environment(Trzcieliński, 2007, p.59). It is focused on the opportunities with short life span, using different methods to be able to react quickly, for example the use of concurrent engineering to shorten the development cycle of a new product (Kałkowska and Trzcieliński, 2007, p.75), but also managerial concepts like Virtual Organization, Total Quality Management or Customer Relationship Management.

The market is in an equilibrium state, an entrepreneur cannot take advantage of a business opportunity. According to Kirzner (1973, p. 41–43; Angelsberger et al., 2017, p. 22), opportunities arise in the market because of disequilibrium, which results from incorrect participant decisions, inefficient resource utilization, price discrepancies, or product shortages. Entrepreneurs who become aware of this state (via attentiveness) can choose to take advantage of it.

To describe the recognition of opportunities Entrepreneur awareness is a concept that Kirzner introduced. He defined this word as a type of knowledge that is more about knowing "where to look for knowledge" than it is about knowing specific market data. Shane and Venkatarama (2000) identify two major factors that affect the likelihood that specific individuals will find specific opportunities, the prior knowledge required to find an opportunity, and the cognitive abilities required to evaluate it. Recent articles characterize alertness as having three unique components: scanning and searching for information, tying together previously disjointed information, and determining whether there are any lucrative business prospects Tang et al (2012). According to Lim and Xavier (2015), various cognitive abilities and processes, including prior knowledge and experiences, pattern identification, information processing abilities, and social interactions, all contribute to alertness (Hajizadeh, and Zali, 2016). Given that events in the company's surroundings create opportunities, it stands to reason that knowing about these occurrences can aid in spotting chances. Such information can be obtained, in particular, by performing marketing research, strategic analysis, and scanning and analysing environmental occurrences and changes. From the perspective of cognitive capacities, it appears that professional experience and formal education are also significant factors for those who take part in the processes of opportunity recognition (Baron, 2004; Costa et al, 2018). The findings of a study on whether these characteristics actually aid in the identification of opportunities in medium businesses

The entrepreneur's personality and skills are not the only factors that affect how they find opportunities. Many researchers have agreed to the notion that opportunity recognition process can be facilitated with social capital as much needed information is gathered through this (Shane and Venkataraman, 2000; Ardichvili et al., 2003; Baron, 2006). Those entrepreneurs who are well-connected with others can recognize opportunities in uncertain situations (Tang, 2010; Baron, 2008). Fact that scarce resources can also be accessed with the help of social

capital. There are two different dimensions of literature related to the strength of social capital has on opportunity recognition.

The opposite view also has a significant part in the literature, Alvarez and Barney (2007); Davidsson, (2022) argued that opportunities formation can be analyzed with the help of discovery and creation theories. The discovery theory suggests that opportunities are already available irrespective of entrepreneur's role, however, the process of opportunities exploitation may differ. On the other hand, creation theory is of the view that opportunities don't exist but entrepreneurs can create them. Both of the theories have much in common but are independent from one another as how they start and basis on which they are studied. Whether it is Discovery or Creation Theory, both are different in terms of how they understand opportunities, role entrepreneurs play and process of exploitation Korsgaard, S. (2013).

Moving ahead, the term of alertness was termed for the first time by Kirzner (1997) while narrating the process of opportunity recognition for entrepreneurs. The term of alertness is defined as a process in which some individuals are aware in comparison to others regarding the changes for maximizing the opportunities (McCaffrey et al, 2021). From economics perspective, alertness is also marked as a key variable due to the ability of entrepreneurs in noticing opportunities that have been overlooked. Most of the recent research has advanced the understanding of alertness which is based on cognitive capacities involving prior knowledge, experience, information, skills and social interactions of individuals (Tang et al., 2012; Clements et al, 2021; Lanivich et al, 2022). Three different dimensions of alertness have also been identified by Tang et al., (2015), including alert scanning and search, alert association and connections, and lastly, evaluation and judgments.

Some authors distinguish four components of the opportunity recognition: Social Networks, Prior Knowledge, Alertness and Personality Traits. Those are all approaches on how to recognize the opportunity, with some similarities and differences, but mostly as complementary to one another

The literature has decent evidence of the fact that social capital is also found to mediate the relationship between human capital and opportunity recognition. For entrepreneurs, social network is the main important source of information for new ideas that can turn into real business opportunities (Audretsch et al, 2011). The literature suggests that social capital often

termed as social network is directly proportional to number of opportunities an entrepreneur can perceive. The kind of social capital an individual has will form the basis that how likely they are to spot an opportunity in comparison to other who are unable to recognize opportunities (Arenius and Clercq., 2005). Literature backs tha fact that number of social relationships also moderates opportunity recognition (Singh, 2013). Literature suggests that it has been found that large number of entrepreneurs take decisions influenced by their professional advices and friends (Portyanko et al., 2022). It has also been suggested that often decisions are taken based on weak-ties, whereas, when opportunities are being discovered, strong-ties play majority part (Marry George et al., 2016).

2.3.3 Indicators of Opportunity

Opportunity recognition is the process by which entrepreneurs identify and capitalize on opportunities to create new businesses or enhance existing ones. This process involves perceiving opportunities through several indicators in the external and internal environment, evaluating their feasibility and potential, and then taking action to exploit them as mentioned by Trzcielinski, (2018).

Opportunity recognition indicators, which influence on each opportunity uniquely on the basis of the business's actions that may be assumed to have been taken in connection with the occurrence of the opportunity, it is feasible to determine if the firm is taking opportunities.
Market penetration, entails utilizing the chance to fully capitalize on the current markets and goods. It is accomplished by enhancing product quality, putting into place a flexible pricing strategy, reducing prices, or changing promotions. In essence, the business raises interest in the product and draws in new customers, (Trzcielinski,. 2018),

Business environment analysis Opportunities are favorable conditions that happen in the business world, therefore scanning and analyzing the surroundings is a form of opportunity hunting.

Finding possibilities connected to new client demands may lead to the **introduction of new items to the market** Therefore, possibilities have been identified based on the requirements and expectations.

Another indicator in context to the study is **Industry Knowledge**. A big advantage in recognizing opportunities might come from having a thorough awareness of a certain business or market area(Robinson, 2006). Entrepreneurs with in-depth knowledge of their industry may identify shortcomings or opportunities for improvement that others miss.

Additionally, developing a strong **network** of connections within a sector or entrepreneurial community can offer insightful information and open doors to new opportunities. A network like this encourages **innovation and creativity** among businesses and their managers. Creative businesspeople are more likely to discover chances for innovative goods, services, or procedures. They can think of innovative ideas or methods to enhance current solutions.

An organization that is **customer-focused** acknowledges its customers' demands and expects to meet them. As a result, the needs that will be met are acknowledged as opportunities.

It has been observed that the assessment of **resource availability** is a fundamental step in gauging the feasibility of an entrepreneurial opportunity. Entrepreneurs must assess their access to the required resources, which often include money, technology, and qualified personnel (Wiklund et al, 2009). The key factor is frequently the availability of funds because it supports attempts to start new businesses, produce products, and promote those products. It is equally important to have access to the appropriate technology and trained staff, as they are the forces behind invention and execution. Companies who are aware of when these resources are available can decide whether or not to pursue an opportunity with confidence that they have the resources necessary to turn their vision into reality. Reserve resources exist within the organization. The company's adaptability and capacity to take advantage of unforeseen possibilities may be improved by maintaining reserve resources (Wlodarkiewicz-Klimek, 2014).

Finding an opportunity based on the fact that **the new subcontractor** is capable of delivering faster and more value than the previous one may lead to the establishment of collaboration with new suppliers or subcontractors**.** (Trzcielinski, Trzcielinska, (2011)

By entering new markets, businesses may take advantage of the chance to meet unmet demand for their products or services. It specifically refers to expanding into international markets. Such a strategy involves looking for a wide variety of opportunities. They might be

things like international market demand, broker interest in serving that market, joint venture proposal with a foreign firm, removal of trade and money flow obstacles, among other things.

Product development to meet client expectations. These anticipations are actually opportunities. When a business is customer-focused, it sees the wants and expectations of its customers as possibilities.

Finding possibilities is therefore a challenging process that calls for a range of abilities, such as creativity, problem-solving, market awareness, and industry expertise. Entrepreneurs that are skilled at seeing opportunities and grabbing them tend to be successful.

2.3.4 Summarization

It has been established that the definition of an opportunity in the context of entrepreneurship is the identification of environmental conditions or circumstances that can be used to launch new ventures or expand already existing ones. It entails recognizing these chances, assessing their viability and potential, and then acting to seize them. There are many ways to define opportunity, but in general, it has to do with the discovery of new products, services, markets, or organizational structures that did not previously exist. This frequently happens whenever there is a market need for something novel or whenever defects or injustices in the market are identified. Importantly, depending on whether someone recognizes and seizes an opportunity, market circumstances might be objective or subjective.

An essential component of entrepreneurship, from an entrepreneurial standpoint, is the ability to recognize opportunities. Newness, potential economic value, and desirability are its three key components. Entrepreneurs spot possibilities by observing changes in their surroundings, some of which may be anticipated or forecast. Entrepreneurs frequently receive knowledge through their professional networks, industry gatherings, seminars, and conferences since it is essential for spotting opportunities (Bjerke, 2007). Thus, the findings are useful and focused for the state managed enterprises and regulatory authorities. However, most of the SMEs operating lack understanding of intellectual capital and likewise, are unable to understand its benefits. The findings of this study as well as going through the literature can help them learn of the intellectual capital which allows organizations to become flexible so that they can stay abreast to ever-changing business environment.

Opportunity Focus is characterized by qualities like curiosity, action orientation, and the desire for success. Individuals that are curious seek new concepts and avenues, whereas those who are action-oriented focus on taking initiative to spot chances. People are driven to explore opportunities for success by a need for achievement. Tolerance for ambiguity, inventiveness, independence, self-starting, internal sense of control, and risk-taking tendency are all characterized by uncertainty. While creativity enables the creation of novel ideas, ambiguity tolerance helps people survive in ambiguous conditions. Proactive opportunity seeking is driven by independence and a can-do attitude, and internal locus of control develops the conviction that one can influence the course of events. A readiness to take measured risks when possibilities present itself is reflected in one's risk propensity.

Additionally, networking, coalition building, cooperation, self-efficacy, niche craft, tenacity, and determination are examples of indicators of scarcity. Creating beneficial contacts and collaborations is a key component of networking and coalition building. Utilizing collective abilities requires effective teamwork. People are motivated to look for and create chances when they have faith in their own abilities. Niche craft entails identifying niche markets. It takes persistence and tenacity to overcome obstacles. Improvisation, empiricism, pragmatism, experimenting, and stumbling through are all examples of fluidity. Adapting to changing conditions is improvisation. Learning through experience is emphasized in empiricism. The focus of pragmatism is on workable solutions. New ideas are tested through experimentation and stumbling through refers to negotiating ambiguous circumstances.

Therefore, identifying opportunities is a dynamic process impacted by a variety of indications. In order to effectively recognize and seize opportunities, entrepreneurs in SMEs in Pakistan must combine a variety of key qualities and abilities. This process can be improved by intellectual capital, which includes knowledge, expertise, and networks. These assets offer the tools and perspectives required for seeing and seizing opportunities in the always shifting corporate environment.

3. Research Methodology

The choice of a suitable research methodology is crucial since it establishes the basis for a trustworthy and dependable investigation. The approach used in this study was carefully selected, and its justification was in-depth. Because of the methodical technique used, it is ensured that the methodology's various parts work together to answer the study questions and objectives. The study tries to improve the reliability and robustness of its findings by using a systematic technique (Bell, Bryman, and Harley, 2022). It gives researchers the ability to methodically gather and examine data, ensuring that every step of the research process is well-organized and coordinated. This method assists in lowering bias and improving the study's results' accuracy. Additionally, the methodology of choice enables a thorough examination of the study issue. The research guarantees that the data gathering, analysis, and interpretation processes are consistent and coherent by lining up various components of the technique with one another. This coherence improves the validity of the study's conclusions and offers a solid foundation for making insightful inferences.

3.1 Research Model

For the intent of this investigation, the study has developed a research model that makes use of all three categories of variables: independent factors, dependent variables, and mediating variables. In Pakistan's SMEs (small and medium-sized businesses), the link between intellectual capital and opportunity recognition is a key focus of this study. Both factors, intellectual capital and opportunity recognition, hold paramount importance in the research model. Intellectual capital serves as the independent variable while opportunity recognition serves as the dependent variable. The aim of this research is to enhance our understanding of how changes in a company's intellectual capital impact its ability to identify and capitalize on opportunities. However, it is crucial to thoroughly investigate the relationship between these two factors. Although intellectual capital has received significant attention in academic literature, its examination often revolves around organizational performance (Iqbal et al, 2018). To gain deeper insights into the connection between intellectual capital and opportunity recognition, we expanded the model by incorporating a mediating variable, as shown in the figure below. The researcher employed the agile methodology to assess how a variable impacts the connection between intellectual capital and opportunity recognition. By integrating this variable into the research design, a deeper understanding can be gained regarding the

underlying mechanisms through which intellectual capital influences opportunity recognition in small and medium-sized enterprises (SMEs). The main goal of this in-depth research framework is to understand the intricacies of these linkages and produce meaningful perspectives on how small and medium sized enterprises (SMEs) can efficiently utilize their intellectual assets to seize opportunities amidst a constantly evolving business environment. The figure 1 presents research model.

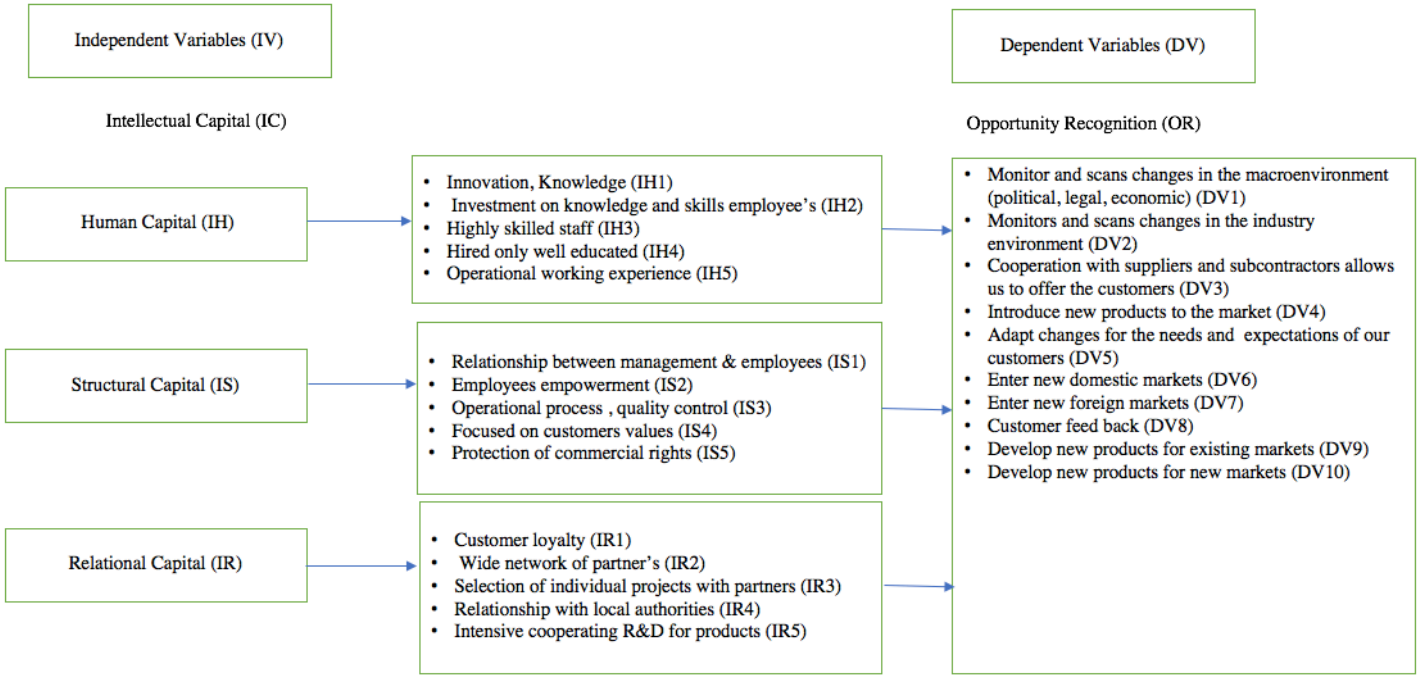


Figure 1, Research Model

3.2 Research Methodology

The study has adapted positivism as research paradigm as through stressing the application of factual data and scientific procedures, the school of thought known as positivism establishes a strong foundation. By investigating social processes, this approach hopes to arrive at an unbiased perception of reality (Benton, 2014). In this study, the link between intellectual capital and opportunity recognition across small and medium-sized businesses (SMEs) was explored using positivism, which offered a suitable framework for collecting and analyzing quantifiable data. The focus on unchanging, measurable facts that positivism emphasizes considerably reduces the potential influence of subjectivity and bias on the researcher (Suri, 2020). It provides a solid research framework for this examination, ensuring more credible and reliable

research into the intricate relationships between intellectual capital and opportunity identification in the context of SMEs. This guarantees that the findings are founded on actual evidence and that they are capable of being duplicated by other researchers in the future. Positivism made it possible for the research to reach broad conclusions that are applicable in situations other than the one in which it was conducted because it relied on empirical facts and methodological approaches as also evident from P ark et al (2020). This not only strengthens the external validity of our findings but also enables us to draw inferences from a broader context. The positivist worldview adheres to stringent research methodologies, such as the use of standardized data collecting and statistical analysis. This improves the study's dependability as well as its reproducibility, which ultimately contributes to the study becoming more robust and believable.

In addition, Positivism enables us to determine the links between variables in terms of their causes and effects (Rahi, 2017). The researcher was able to investigate potential causal relationships and pinpoint factors that have an effect on the outcome if we investigate the effect that intellectual capital has on the recognition of opportunities.

On the other hand, positivism has a tendency to place an emphasis on factual evidence rather than the contextual nuances of a certain environment. This method may overlook specific cultural, social, and economic elements as evident by Fletcher et al, (2020) in our research on small and medium-sized enterprises (SMEs) in Pakistan. These characteristics have the potential to alter the relationship between intellectual capital and opportunity recognition. The positivist approach places an emphasis on objective statistics, which may or may not adequately represent the subjective experiences and points of view held by persons working in SMEs. Positivism has a habit of simplifying complicated events by reducing them to discrete variables. This may be a problem because it oversimplifies the interrelated nature of intellectual capital and opportunity. In conclusion, the use of positivism as our research paradigm enables us to make use of methodological approaches that are both systematic and empirical in order to explore the influence of intellectual capital on the recognition of opportunities among small and medium-sized businesses in Pakistan. Positivism may have a lot going for it, but we cannot ignore the fact that it has some serious flaws too; if we want to have a well-rounded grasp of the subject at hand, we should look at different research methodologies in addition to positivism.

The study utilized a research method that was quantitative in its approach to the investigation. Using this methodical and organized methodology, the researcher was able to collect numerical data and analyze it in an objective manner (Mohajan, 2020). The ultimate goal was to comprehend the connection that exists between intellectual capital and the identification of opportunities within Pakistani Small and Medium-Sized Businesses (SMEs).

The primary objective of the study was to investigate the ways in which intellectual capital, which encompasses human capital, organizational capital, and social capital, influences the capability of small and medium-sized enterprises (SMEs) in the Pakistani business environment to recognize opportunities and make the most of them. The use of quantitative research provided a number of benefits that were really helpful for the investigation. In the first place, it offered accurate measures of the variables that were being researched, which made it possible for us to quantify the amounts (Austin and Sutton, 2014) of intellectual capital and opportunity recognition that were present in the SMEs. Because of this precision, we were able to conduct a rigorous statistical analysis, which assisted us in recognizing patterns and trends within the data, ultimately leading to findings that were more accurate and reliable.

The sample size that is typically connected with quantitative research was beneficial for our study since it increased the generalizability of the findings (Tsang, 2014). This is something that is commonly linked with quantitative research. We were able to make broader conclusions about the impact of intellectual capital on opportunity recognition throughout the SME sector in Pakistan as a whole thanks to the sizeable sample of Pakistani SMEs that we used in our research.

The emperical research is an excellent method for investigating the cause-and-effect correlations that exist between the variables being studied. The researcher was able to assess whether or not shifts in intellectual capital were connected with shifts in opportunity recognition by utilizing statistical analyses such as regression analysis. This strategy, which focused on causality, made it possible for us to construct meaningful links between the variables of interest and contributed to a better understanding of the relationship between intellectual capital and opportunity recognition in the context of small and medium-sized enterprises (SMEs). In addition, the capability of quantitative research to be replicated was an additional key advantage for the investigation. Other researchers can validate and build upon

our results, which will further enhance the credibility of our research because they would have followed a process that is comparable to ours.

Research that uses quantitative methods has been shown to be effective in a number of different research projects, which provides additional evidence that quantitative research is beneficial. For instance, Rodriguez-Gutirrez, (2015) did research on market orientation and corporate success. They employed quantitative methodologies to establish a robustly positive link between market orientation and financial performance in their findings. In a similar layer, Lin et al, (2015) discovered that quantitative research in organizational studies has considerably helped to a better understanding of organizational behavior. This was accomplished by quantifying variables and evaluating hypotheses.

Quantitative research does, however, have some inherent drawbacks that must be considered. The possibility of overlooking subtle contextual aspects that may influence the relationship between intellectual capital and opportunity recognition in SMEs is one of the method's possible downsides. These factors may have an effect on the relationship between intellectual capital and opportunity recognition. In addition, the inflexible structure of quantitative research may limit our capacity to adjust to unexpected findings or explore new routes while we are collecting data (Avella, 2016), which may cause them to miss out on valuable insights. In addition, there is a possibility that complicated problems will be oversimplified, and certain constructs might not be entirely captured by measurement devices, which could result in measurement bias.

Overall, the researcher found that the quantitative research method was an effective methodology for our study on the influence of intellectual capital on opportunity recognition in Pakistani small and medium-sized enterprises (SMEs). Findings that are reliable and applicable across contexts were obtained through the methodical measurement and analysis of numerical data. However, the researcher was also aware of the limitations of this technique and allowed to investigate the lived experiences of SME stakeholders and make our investigation completer and more in-depth.

Research Instrument

A survey, more precisely a closed-ended questionnaire was employed as the research instrument for this particular study. The decision to use a survey as the research instrument was influenced by a number of considerations that are consistent with the objectives and context of the research. The systematic collecting of data from a large number of respondents can be accomplished through the use of a survey in a way that is both efficient and standardized (Dalati and Marx Gomez, 2018). This methodology was suitable for the purpose of the study, which was to investigate the influence that intellectual capital has on the opportunity recognition of small and medium-sized businesses in Pakistan.

A survey can be used as a research instrument because it has the ability to collect data from a sample that is both diverse and representative. This can result in a more well-rounded understanding of the subject matter under investigation. In addition, surveys provide a systematic format, which not only ensures uniformity in data gathering but also makes it much simpler to compare and analyze respondents' responses (Saganenko et al, 2019). It is possible to quantify the participants' attitudes and views thanks to the Likert scale that was used in the questionnaire. This opens the door for statistical analysis, which can then be used to test hypotheses and make meaningful conclusions.

In addition, surveys are excellent for use in large-scale research since, in comparison to other methods of data gathering; they are both more cost-effective and require less time to complete (Regmi et al, 2016). The use of questions with limited response options makes data entry and analysis easier. This lowers the likelihood of making errors during data entry and increases the overall productivity of the research process. Standardization was one of the most important benefits that the researcher took use of. By requiring each participant to reply to the same set of preset questions with a fixed set of response possibilities, survey questionnaires ensure that the data gathering process is consistent throughout. This standardization helped to reduce bias and guarantees that all participants are evaluated based on the same criteria as evident from Pal et al (2017).

As a result, comparisons and analyses based on the data were more accurate. In addition, close-ended surveys are useful tools for the efficient collecting of data on a broad scale. Because the purpose of our research was to collect responses from a sizeable sample of SMEs in Pakistan, this method enabled us to reach a more extensive audience. The researcher was able to translate the responses provided by the participants into quantitative data and conduct statistical analysis

as a result of the usage of fixed response alternatives (McLafferty, 2016). Due to the fact that intellectual capital can be quantified, researchers were able to use a wide variety of statistical techniques to investigate the links that exist between intellectual capital and opportunity recognition. In addition, it is appropriate for statistical analysis, which enables us to recognize patterns, correlations, and trends within the data. In order to gain a deeper comprehension of the study topics, utilizing statistical methods such as regression analysis could assist in determining the nature and magnitude of the connections that exist between the various variables. Because participants choose their responses from a set of possibilities that have been selected in advance, the potential for bias caused by interpretation is diminished when using close-ended questions. The findings' validity was improved as a result of the data collection's objectivity, and the impact of the researcher's bias is lessened as a result.

However, it is vital to take into consideration a number of potential restrictions associated with the utilization of a survey. The chance of participants providing answers that are socially desirable or not fully disclosing their genuine ideas is one of the limitations of this study. Another drawback is the possibility of participants providing answers that are socially desirable. Researchers should reassure participants that their comments will be kept anonymous and confidential in order to limit the impact of this. In addition, the Likert scale that was utilized in the survey may not have been able to capture the complexities of the participants' attitudes and may have oversimplified nuanced viewpoints (Zeeni et al, 2018). In this particular investigation, the use of a survey can be defended by citing pertinent literature from earlier studies that made use of comparable research procedures. It would be beneficial to the methodological approach if there were studies that used questionnaires or Likert scales to study the relationship between intellectual capital and the recognition of opportunities in other circumstances.

In a great number of studies, researchers have successfully investigated a wide range of organizational and business-related phenomena by employing surveys. For instance, Kim et al, (2020) conducted a study in which they evaluated the influence of corporate reputation on consumer behavior by using a survey questionnaire with limited response options. They were able to draw relevant findings after doing a quantitative analysis of reputation scores thanks to the standardized approach. In a similar vein, Cheng et al. (2018) conducted a study on customer satisfaction and loyalty in the banking industry using close-ended questions. This enabled them to discover important factors of client loyalty through statistical analysis. In conclusion, the

survey was selected as the research instrument for this study because it was found to be aligned with the research aims, it possessed the capacity to collect data effectively from a large sample, and its format was structured in a way that made it simple to analyze the data. Quantification of the participants' responses was made possible by the inclusion of a Likert scale within the questionnaire, which in turn made statistical analysis of the data possible.

Data collection techniques and analysis

A questionnaire with close-ended responses was used to collect data for the study on the influence of intellectual capital on opportunity recognition in small and medium-sized businesses (SMEs) in Pakistan. At the heart of psychological research, the Likert scale emerges as a familiar and widely embraced tool that adds a human touch to the investigation (Beins, 2017). By delving into the depths of human cognition, emotions, and viewpoints, the Likert scale uncovers valuable insights that enrich our understanding of individuals. Participants are graciously invited to lend their voices by expressing agreement or disagreement with a set of carefully crafted statements pertaining to the study's focus.

This engagement empowers researchers to grasp the subtleties and complexities of diverse human perspectives. With its numerical range stretching from 1 to 5 ,where 1 signifies "strongly disagree" and the highest number reflects "strongly agree," the Likert scale masterfully captures the nuances of human sentiments. By using this engaging and easy-to-understand method, researchers build a real link to the ideas and points of view of their subjects. This leads to research that is truly important and centered on people. This method is often used in study across fields because it gives a deep understanding of how people feel. Researchers have been able to get a lot of number information about what people think and feel by using the strong Likert scale.

A carefully made scale asked respondents how they felt about each claim about intellectual capital and how it affected SMEs' ability to see potential. This was done to measure how each claim affected SMEs' ability to see potential. The major goal of the study was to find out if there was a link between the ability of small and medium-sized enterprises (SMEs) to find chances and intellectual capital, which included physical, economic, and social factors. The form that the subjects filled out was well thought out and covered a wide range of issues connected to intellectual capital. Because the Likert measure allow people give the answers, it was much easier to compare and study the data(Williams, 2003). Also, the numeric form of the

Likert data made it possible to do statistical analysis, which improved the legitimacy and depth of the study. This method worked quite well, providing a useful framework for analyzing intellectual capital and its connection to opportunity identification in small and medium-sized enterprises. Thirdly, the scale offers a variety of response alternatives, which enables participants to articulate a nuanced level of agreement or disagreement (Furr, 2011). This enhanced the sensitivity of the data as well as its accuracy.

Having said that, it is critical to point out that the Likert scale does have a few drawbacks. For instance, the scale pre-supposes that there is an equal amount of space between each of the response options, which is not necessarily always the case. Because participants are limited to selecting from a set of predetermined response possibilities, it is possible that it does not capture the entire richness of the participants' opinions. Moving ahead with the completion of the phase involving the acquisition of data, the following stage comprised the analysis of the data that was collected.

In order to investigate the connections between the myriad of variables included in the study and to validate the hypotheses underlying the investigation, numerous statistical analysis methods were utilized. The data were entered into statistical software for the purpose of analysis, and the appropriate statistical tests were applied in order to draw meaningful conclusions from the data. These statistical tests included the interpretation of likert scale data in the form of tables, Cronbach alpha, the Sperman Test, and the Kruskal-Wallis test, all of which highlighted the relationship and significance among the variables.

The data from the Likert scale made it possible to do quantitative analysis; researchers were able to compute measures such as means, standard deviations, and correlations to investigate the extent to which variables are related to one another and the direction in which those relationships point as also evident by Umair et al (2021). In addition to this, inferential statistical techniques were used so that the hypotheses of the study could be evaluated. To evaluate the significance of differences across groups, researchers used t-tests, ANOVA, and Kruskal-Wallis tests. The study's statistical results offer insights into how intellectual capital relates to opportunity recognition in SMEs. Conclusions are drawn based on the data, supporting or rejecting hypotheses. Findings highlight the crucial aspects of intellectual capital, like human, structural, and relational factors, driving opportunity recognition in Pakistani SMEs.

To achieve study objectives, a robust approach combined closed-ended questionnaires and rigorous statistical analysis. This ensures the investigation into the relationship between intellectual capital and opportunity recognition in Pakistani SMEs is grounded in empirical evidence, making valuable contributions to the field.

Population and Sample

The research centered on Punjab, Pakistan's Small and Medium-Sized Enterprises (SMEs) sector, specifically targeting managerial-level employees. Exploring the link between intellectual capital and opportunity recognition made involving managers crucial. To ensure a representative sample, 150 participants were chosen using item response theory, considering ten times the number of questionnaire items. The figure 4 presents participants responded.

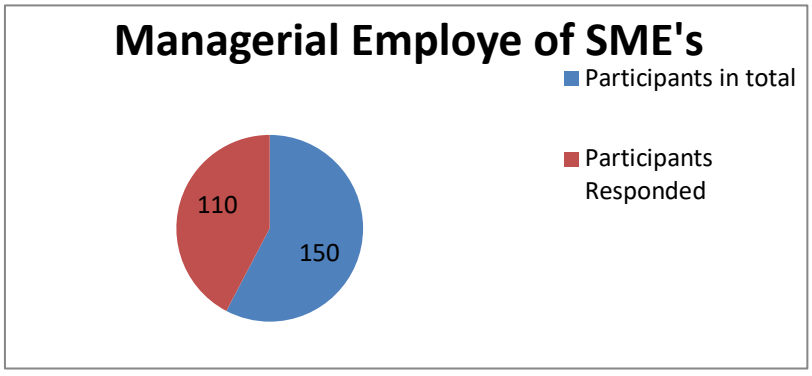


Figure 2. Contributing valuable insights to the study.

The study was carried out in Lahore and Sialkot. According to the Sialkot Chamber of Commerce's survey report, the Sialkot region is home to 11,000 SME's (SCCI, 2021). According to the Small Medium Enterprise Development Authority, there are 75,000 SME's operating in the Lahore region, employing between 10 and 250 people. The internet source naukowiec.org/dobor provided the sample size calculation that is presented in the table 5.

Table 5. Sample size calculation

Population size	86.000
Fraction size	0,8
Confidence level	82%
Margin of error	5%
Sample size	115

The given value of 86,000 SMEs in the research region provides a percentage of the population. Unfortunately, due to the limited access to SME's, the confidence level is 82% based on the margin of error of 5% and the sample size of 115 respondents. Stratified sampling was used as the sampling technique, dividing the population into distinct strata based on relevant criteria, like different sectors or industries within SMEs, ensuring comprehensive representation (Rahman et al, 2022). Within each stratum, simple random sampling was employed to select participants. This approach not only facilitated a representative sample but also enabled insightful comparisons and analyses within various subgroups, enriching the study's findings and validity. To gain access to the participants and conduct the survey, the researchers have collaborated with relevant SMEs and their management. The process involved seeking permission and cooperation from the companies to engage their managerial staff in the study.

Additionally, the researchers have used surveys, email communication, or in-person meetings to approach the potential participants and request their participation in the study. Ensuring the confidentiality and anonymity of participants has been a priority to encourage candid responses and compliance with the survey(Rajasekaran et al, 2022). In summary, the study took place within the SMEs sector of Punjab, Pakistan, involving employees at the managerial level. The sample size was determined based on item response theory, leading to a total of 110 participants initially, and the sampling technique employed was stratified sampling. Access to the participants may have been facilitated through collaboration with SMEs and the use of various communication methods to engage the potential respondents in the research.

Ethical Consideration

In any research study, ethical considerations play a significant part, and this study on the impact of intellectual capital on opportunity recognition in small and medium-sized businesses in Pakistan was no exception. It is quite likely that a number of ethical norms were adhered to in order to protect the health and rights of the participants. Before agreeing to take part in the research, each individual have been given precise and exhaustive information regarding the objectives of the study, its methods, as well as any potential drawbacks and advantages of their participation. Every participant has willingly given their informed consent, and there would have been no use of coercion in the process (Xu et al, 2020). They were informed that their participation is fully optional, and that they have the right to withdraw from the study at any moment without experiencing any adverse repercussions. To ensure that the participants' information was kept secret and private, stringent precautions would have been taken. This was

done to respect the participants' right to privacy. Individual details, such as names and addresses, would have been kept confidential and stored in a different location from the study data. In order to protect the privacy of the participants and prevent them from being identified, all of the responses and data will be aggregated and provided in an anonymous form.
As mentioned by Hasan et al (2021) another crucial component was that the information obtained from this research will not be shared with any other researchers under any circumstances and will be used exclusively for the purpose of the study that is currently being conducted. In order to carry out high-quality research, the researcher strived to maintain ethical standards in all of the activities that are connected to this research and the conclusion of it.

The causal type of research studies is distinguished from the correlational type by the fact that the causal type solely focuses on determining the cause-and-effect link, whereas correlational studies investigate the nature of the relationship that exists between the variables (Kathpalia and Nagaraj, 2021). The current study is a correlational one, and the researcher was just slightly involved in the process. Since this study was not of an experimental nature, the researcher did not play a significant role in the development of the findings. An individual, a group of people, or even an artifact could serve as the research study's unit of analysis. The existing research uses individuals as the basic unit of analysis since the conclusions drawn from the study are drawn based on the respondents, who are individuals in their own right. It is possible for the research to use a longitudinal or cross-sectional approach to time. Because the research for the current study is carried out and data are collected from respondents all at the same moment in time, the study can be classified as cross-sectional in nature. The data for longitudinal studies typically comes from the same respondents multiple times throughout the study's duration.

Access to the participants and SMEs has been facilitated by gatekeepers, such as managers or supervisors, who acted as intermediaries and offered authorization to approach the employees for participation in the study. It was necessary to cultivate a constructive relationship with gatekeepers in order to acquire access to the organizations and to guarantee that the recruitment process goes without a hitch. The data that are collected for this study are guaranteed to be accurate, authentic, appropriate, and relevant to the project at hand. In addition to this, the researcher is responsible for maintaining confidentiality during this study by ensuring that no information concerning respondents or the companies that were questioned is disclosed to the general public (Dwork et al, 2019). The researchers have a responsibility to be aware of any power imbalances that may exist between them and the participants. In this particular

investigation, the researchers ought to have taken precautions to avoid using their positions of authority or undue influence to attempt to manipulate the participants' responses in any way as evident by Levitt et al, (2021). Throughout every stage of the research process, showing the participants proper deference for their independence and agency is of the utmost importance. During the course of the study, the researchers would have taken measures to safeguard the participants' psychological and physiological well-being as a priority. They need to have been sensitive to any indicators of distress or discomfort and given the necessary help or referrals if they were required to do so. There was a possibility that some participants will indicate an interest in gaining access to the study's findings. Participants who expressed an interest in receiving additional information regarding the findings of the study have been given a report or summary of the research findings by the researchers. In general, the ethical considerations included in this research demonstrate a dedication to respecting the participants' rights, privacy, and dignity throughout the course of the investigation. It is necessary to adhere to ethical norms in order to maintain the credibility of the research and to guarantee that the health and safety of the participants is a top priority throughout the duration of the study

3.3 Research Results

The results of the research are provided in this section, emphasizing the information gathered for both independent and dependent variables. The study's main objective was to investigate the connection between intellectual capital and the perception of opportunity in Pakistani SMEs. The independent variables, which were determined via a Likert scale survey, were Human Capital, Relational Capital, and Structural Capital. The information gathered from the participants' responses gave important new insights into the proportions of these factors in the sample of regional SMEs in the Punjab province. The study looked into numerous opportunities related topics for the dependent variables. The Spearman test was also used in the study to examine the association between various variables. By using statistical analysis, the researchers were able to pinpoint any significant connections between the variables under inquiry, offering insightful information about their connections. These variables include Human , relational , Structural capital and opportunity Recognition which have been defined in earlier chapter and will be explained in results section with their results. Reliability is measured using Cronbach alpha analysis of which value shall be equal to or greater than 0.7. The values for the variables represent that data collected for all of the variables are reliable.

The Cronbach alpha analysis is a measure of internal consistency that indicates the reliability of a scale or group of items used to measure a certain concept. A Cronbach alpha value of 0.7 or higher is generally considered to be satisfactory; this indicates that the items contained within the scale provide trustworthy results when measuring the underlying construct. Therefore, The Cronbach Alpha analysis was performed to evaluate the validity of the information gathered for each variable. With Cronbach Alpha values of 0.757, 0.768, 0.760, and 0.779, respectively (as shown in table below), the results for Human Capital, Relational Capital, Structural Capital, and Symptoms of Opportunities suggested a high level of internal consistency and trustworthiness in the data.

The table 6 findings are based on a sample of 110 individuals, all of whom held managerial roles in SMEs in the Pakistani state of Punjab.

Table 6. Cronbach Alpha.

Variable	No. of Items	Cronbach Alpha Value
Human Capital	5	0.757
Relational Capital	5	0.768
Structural Capital	5	0.760
Symptoms of Opportunities	10	0.779

Human Capital as Independent Variable

The variable of human capital comprises of 5 questions (questionnaire attached in appendix) which were given the name IVI, IV2 and so on, as shown in the table 7. And the Likert scales (LS1- LS5) states the options from disagreed to agree by the participants. The below table 7 provides the responses and on those bases the interpretation to the hypothesis 1 is provided

Table 7. Number of respondent Human Capital (Iv)

Likert scale	Innovative, knowledge & experienced Staff. (Iv1)	Investments in the skills of employees (Iv2)	Highly skilled staff (Iv3)	Only Well-educated employees (Iv4)	Operational working experience (Iv5)
1			2	2	
2					
3	4	4		7	2
4	31	34	34	22	36
5	75	72	74	79	72

On the basis of the data that was provided for the Likert scale, which indicated the replies to the study question "Our company is innovative thanks to the knowledge and experience of our employees" **(represented by IV1)**, we are able to evaluate the participants' level of agreement or disagreement with the following statement: According to the findings, we can deduce that 75 of the 110 participants had a strong agreement with the statement that "Our company is innovative thanks to the knowledge and experience of our employees." This suggests that a sizeable majority of respondents believe that the expertise and experience of the company's workers are directly responsible for the innovative nature of the organization. In addition, there are 31 responses who concur with the statement, lending more credence to the concept that the participants typically acknowledge the significance of human capital in generating innovation inside the organization.

In general, the statistics suggest that the respondents have a positive and favorable outlook towards the role of human capital (IV1) in the process of encouraging innovation inside the company. The large number of comments that were "Strongly Agree" shows that there is a strong consensus among the participants, which is a reflection of the organization's positive reputation for innovation and the value that is placed on the knowledge and expertise of its employees leading to support the hypothesis.

On the basis of the data that was provided for the Likert scale for the Independent Variable, which indicates replies to the research question "We employ only staff with high skills" **(represented by IV3),** we are able to assess the participants' level of agreement or disagreement with the following statement: According to the findings, we can see that the vast

majority of respondents (74 out of 110) were in complete agreement with the statement "We only employ staff with high skills." Therefore, the data suggests that the majority of respondents showed a positive inclination toward hiring staff members with a high level of expertise, as revealed in the research findings which is in favor of the hypothesis.

On the basis of the data that was provided using the Likert scale, which indicates replies to the study question "Our R&D employees are very well educated" **(represented by IV4),** researchers are able to assess the participants' level of agreement or disagreement with the following statement: According to the findings, it can be seen that the greatest number of participants (79 out of 110) had a strong agreement with the statement that "Our R&D employees are very well educated." The data reveals a notable perception among respondents that individuals working in R&D within the organization possess a high level of education. It is essential to recognize, however, that different participants hold diverse viewpoints on this matter. Specifically, 36 respondents disagreed or strongly disagreed with the statement, while 34 remained neutral, indicating a variety of perspectives. The findings highlight a significant majority with a favorable outlook concerning the educational level of R&D employees, with a considerable portion strongly providing acceptance with the statement of the hypothesis.

Structural Capital as Independent Variable

The variable of structural capital comprises of 5 questions (questionnaire attached in appendix) which were given the name IV6 to IV10 and so on, as shown in the table below. And the likert scales (LS1- LS5) shows agreement and disagreement with the statements by the participants. The table 8 provides the responses and on those bases the interpretation to the hypothesis 2 is provided

Table 8. Number of respondent Structural Capital (Iv)

Likert scale	Relationship between management and employees (Iv6)	Employees empowerment (Iv7)	Operational process Quality control (Iv8)	Focused on process that customer Value (Iv9)	Protection of commercial rights (Iv10)
1		2			6
2					
3	5	17	2		3
4	48	46	27	26	32
5	57	45	81	84	78

The data provided by the Likert scale, which represents responses to the research question "Our management and operational processes ensure the delivery of products of the highest quality and within deadlines with customers" (the independent variable represented by IV8): According to the findings, the majority of respondents (81 out of 110), who were polled, are in complete agreement with the following statement: "Our management and operational processes ensure the delivery of products of the highest quality and within deadlines with customers." The data indicates a significant majority of respondents hold the belief that their organization's management and operational processes effectively deliver high-quality products to customers within the specified time frame. Additionally, the agreement of 27 participants further reinforces the notion that participants, in general, view these processes as successful in ensuring product quality and timely delivery to clients. The findings indicate that respondents saw structural capital (IV8) as being associated with the guarantee of product quality and fast customer delivery in a positive and favorable manner. The abundance of "Strongly Agree" comments indicates a strong consensus, suggesting the company's management and operational processes are highly valued and successful in meeting customer expectations.

(In-dependent variable (IV9): Based on the findings, it can be shown that the majority of respondents (84 out of 110) agreed with the statement "Our company is focused on processes that are key to customer value." This suggests that a sizeable majority of those who responded believe that their organization places a priority on processes that directly contribute to the value provided to customers leading to accept the hypothesis of the study.

Relational Capital as Independent Variable

The variable of relational capital comprises of 5 questions (questionnaire attached in appendix) which were given the name IV11 to IV15, as shown in the table 9. And the Likert scales (LS1-LS5) shows agreement and disagreement with the statements by the participants. The table provides the responses and on those bases the interpretation to the hypothesis 3 is provided.

Table 9. Number of respondent Relational Capital (Iv)

Likert scale	Customer Loyalty (Iv11)	Wide network of partners (Iv12)	Selection for individual projects with partners (Iv13)	Secure relations with local authorities (Iv14)	Intensive cooperation with R&D for new Products (Iv15)
1		1	2	2	3
2					
3	13	6	11	5	7
4	43	38	32	28	29
5	54	65	65	75	71

For the analysis to the research question "good relations with regional and local authorities" (**represented by independent variable IV14**). According to the findings, it is observed that majority of respondents (74 out of 110) had a strong agreement with the statement "good relations with regional and local authorities." This reveals that a sizeable majority of the individuals who participated in the survey have the opinion that their organization keeps up healthy and productive relationships with regional and local authorities. In addition, there are 28 participants who agree with the statement, which provides more evidence for the assumption that participants generally believe their organization to have positive relations with regional and local authorities (as shown in table 9 above). A positive and favorable view among the respondents regarding the company's contacts with regional and local authorities is shown by the statistics overall (IV14). The high number of responses that were "Strongly Agree" implies that a significant number of participants acknowledge and value the efforts made by the company to maintain positive connections with regional and local authorities.

(**Independent variable IV15),** allow us to interpret whether or not the participants agree or disagree with the following statement: Based on the findings, we can see that the majority of respondents (71 out of 110) (as shown in table 9 above) are in complete agreement with the statement "Research and Development for new market." This suggests that a significant majority of the respondents are of the opinion that their company's research and development efforts are concentrated on expanding into new markets and researching existing ones. In addition, there are 29 people who agree with the statement, lending further acceptance to the idea that participants generally believe their organization to be engaged in research and development activities connected to discovering new market prospects. In general, the statistics

indicate that the respondents had a good and favorable assessment of the company's efforts in undertaking research and development activities centered on new market possibilities (IV15).

Opportunity Recognition as Dependent Variable

The variable of Opportunity recognition comprises of 10 questions (questionnaire attached in appendix) which were given the name DV1 to DV10, as shown in the table 10 &11. And the Likert scales (LS1- LS5) shows agreement and disagreement with the statements by the participants. The table 10 and 11 provides the responses and on that basis the interpretation to table values is provided.

Table 10. Number of respondent Opportunity Recognition (Dv1-Dv5)

Likert scale	Monitor and scan changes in the microenvironment (Political, legal, technology) (Dv1)	Monitor and scan changes in the industry environment (customers, suppliers) (Dv2)	Cooperation with suppliers & distributors (Dv3)	Introducing new product to the market (Dv4)	Adaptation of the changes in the products to meet the customers satisfactions (Dv5)
1	3	1	4	2	1
2	6	6	2	7	
3	11	10	11	25	10
4	45	41	49	49	46
5	45	52	44	27	53

Table 11. Number of respondent Opportunity Recognition (Dv6-Dv10)

Likert scale	Enter new domestic markets (Dv6)	Enter new foreign Markets (Dv7)	Customers feed back (Dv8)	Products Development for existing markets (Dv9)	Products development for new markets (Dv10)
1	11	48		4	11
2	12	1	6	8	11
3	37	13	25	39	29
4	33	29	44	34	38
5	17	19	35	25	21

The following are the responses that were given to the **dependent variable (Dv1)** titled "Opportunities" using the Likert scale that was provided from the above table. The findings

show that the majority of participants (90 out of 110 respondents) (as shown in table 10 above) gave a response of LS4 or LS5, which indicates that they either "agree" or "strongly agree" with the statement of the research that the company monitors and scans changes in the macro environment as part of the opportunities they recognize. The data reveals researchers' ability to gather participants' perspectives on various characteristics or statements related to the study's main topic, using the Likert scale as a data collection tool. Through analysis of responses, researchers can uncover trends, patterns, or changes in participants' attitudes towards the specific dependent variable (Dv1). This valuable information offers insights into how the firm's monitoring practices are connected to identifying opportunities.

For the **dependent variable (Dv3)** "Opportunities": According to the findings, a sizeable proportion of participants (93 out of 110 respondents) gave responses of LS4 or LS5, which indicates that they "agree" or "strongly agree" with the statement of the research that the company is able to provide superior goods or services to customers as a result of its collaboration with suppliers and subcontractors. This shows that participants see a positive relationship between the firm's engagement with its suppliers and subcontractors and the potential the company may capitalize on in order to improve the products and services it provides to its consumers. The analysis revealed the acceptance of the hypothesis in this regard. This information gave vital insights into how the company perceives the collaboration with its suppliers and subcontractors as contributing to the opportunities it has recognized.

The answers that were given in response to the **dependent variable (Dv5)** titled "Opportunities" that was attached with the Likert scale data: A significant proportion of participants (99 out of 110 respondents) responded with LS4 or LS5, which means that the majority of the participants showed acceptance with the hypothesis statement that the company adapts its products and technologies to meet the needs and expectations of its customers. This information gave useful insights into how well the company is regarded to be adjusting its products and technologies to the needs and expectations of customers, as well as how this alignment with the hypothesis contributes to the opportunities that are recognized by the organization.

Cronbach Alpha Analysis of Human Capital

Cronbach's Alpha is a measure of internal consistency and reliability of a scale or a set of items. It indicates the extent to which the items in a scale or construct are correlated and measure the same underlying concept. In this case, the construct being measured is "Human Capital." Below in table 12 are the results for the Cronbach Alpha analysis of the scale of for the Human Capital variables.

Table 12. Cronbach Alpha of Human Capital

Number of items in scale: 5

Number of valid cases: 110
Number of cases with missing data: 0
Missing data were deleted: casewise

SUMMARY STATISTICS FOR SCALE

Mean: 23.090909091	Sum: 2540.0000000
Standard Deviation: 2.194845733	Variance: 4.817347790
Skewness: -1.029826758	Kurtosis: .198632188
Minimum: 16.000000000	Maximum: 25.000000000
Cronbach's alpha: .741559903	Standardized alpha: .757056801

Average Inter-Item Correlation: .396829714

The number of items in the human capital scale was five. Total 110 Valid cases (respondents included in the analysis) were used. In this table no missing value were observed because case wise missing data were removed (meaning any case with missing data was excluded from analysis). The study of the results shows that the Human Capital scale has a Cronbach's Alpha score of 0.74. This value is regarded acceptable for the purposes of research, which indicates that the items being used to measure Human Capital are internally consistent and have a reasonable degree of reliability. To phrase this another way, there is a positive correlation between each of the items on the scale, and the scale as a whole serve to measure the same underlying concept, which is referred to as Human Capital. This shows that the scale is an appropriate instrument for analyzing the authority of human capital on opportunity recognition in small and medium-sized enterprises (SMEs) in Pakistan. The results show a positive

association between human capital and opportunity recognition which supports the idea behind the research.

Moreover, in this instance, the comparatively low standard deviation suggests that the responses are grouped more closely around the mean, showing a certain degree of homogeneity in the participants' assessments of Human Capital. This is supported by the fact that the mean is closer to the center of the responses.

The validity of the research instrument is supported by the findings of the Cronbach Alpha analysis, which demonstrates that the Human Capital scale that was utilized in the study is trustworthy and consistent within itself. The scale displays an adequate level of internal reliability, as shown by a Cronbach's Alpha rating of 0.74. The findings of the study regarding the impact of Human Capital on opportunity recognition in Pakistani SMEs may now be trusted to a greater extent as a result of this. Agyabeng-Mensah and Tang, (2021) study further supports the ***H1*** case based on the relationship between human capital and SME performance and found that human capital significantly influences the ability of SMEs to recognize and seize opportunities in their market environment. The relevance of human capital in innovation and entrepreneurial activity among SMEs is emphasized in the study by Chogozie and Emmanuel, (2018) which his aligned with the study hypothesis.

The identification of opportunities requires these actions. Furthermore, research by Zahra et al. (2014) emphasized the significance of human capital in the opportunity identification process, as skilled and knowledgeable employees can effectively identify and assess potential opportunities. The findings of the current study align with these previous research studies, as Cronbach's Alpha results demonstrate the reliability and consistency of the Human Capital scale in measuring the impact of human capital on opportunity recognition in SMEs. The study's hypothesis align with previous research by showing that human capital plays a significant role in SMEs' ability to recognize and act on opportunities, supporting H1. The references to other studies reinforce the logical basis for hypotheses. Therefore, Cronbach's Alpha highlights the reliability with logical reasoning.

Because of this positive perspective of human capital, small and medium-sized enterprises (SMEs) may have an advantage over their larger counterparts when it comes to recognizing and seizing opportunities, which may ultimately result in the expansion and success of the business as a whole. By doing so, SMEs can improve their ability to recognize and capitalize on opportunities in the dynamic and competitive business landscape of Pakistan.

Cronbach Alpha Analysis of Structural Capital

The findings of Cronbach's Alpha test for the Structural Capital scale demonstrate that the scale is reliable and internally consistent in measuring the impact of structural capital on an organization's capacity to recognize opportunities (also known as create and discover possibilities). In the following table 13 the results are for the Cronbach Alpha analysis of the scale of structural Capital variables.

Table-13. Cronbach's Alpha of Structural Capital

Number of items in scale: 5

Number of valid cases: 110
Number of cases with missing data: 0
Missing data were deleted: casewise

SUMMARY STATISTICS FOR SCALE

Mean: 22.400000000	Sum: 2464.0000000
Standard Deviation: 2.730056961	Variance: 7.453211009
Skewness: -.968013538	Kurtosis: .412594780
Minimum: 13.000000000	Maximum: 25.000000000
Cronbach's alpha: .766052325	Standardized alpha: .760436536

Average Inter-Item Correlation: .409520659

The findings of Cronbach's Alpha test for the Structural Capital scale demonstrate that the scale is reliable and internally consistent in measuring the impact of structural capital on an organization's capacity to recognize opportunities. The value of 0.76 for Cronbach's Alpha is deemed satisfactory for the purposes of the study. This indicates that the items on the scale

have a positive correlation with each other and successfully assess the same underlying concept, which is Structural Capital.

The results from Cronbach Alpha, demonstrating the reliability of the scale that an increase in a firm's structural capital has a beneficial impact on the ability of the organization to recognize possibilities (both create and discover opportunities), are consistent with the existing body of literature that encourages hypothesis **H2**. A number of investigations have highlighted the significance of structural capital in terms of its role as a facilitator of opportunity recognition and innovation within organizations, particularly in the circumstance of small and medium-sized firms (SMEs). In one of their research, Boadu et al. (2022) explored an connection between organizational capital, which includes structural capital, and innovation performance in small and medium-sized enterprises. This association encompassed both organizational and structural capital. The findings suggested that increased structural capital, such as well-designed processes and efficient infrastructure, positively benefited the firm's ability to determine and capitalize on market opportunities, eventually leading to improved innovation performance. Some examples of structural capital include well-designed processes and efficient systems.

In a separate piece of research, Kiprotich et al. (2015) looked into the influence that organizational capital, which included structural capital, had on the entrepreneurial orientation of small and medium-sized enterprises (SMEs) in Kenya. In addition, research conducted by Bontis and Serenko (2007) highlighted the significance of structural capital in elevating an organization's knowledge management capabilities. This is of the utmost importance in the dynamic and competitive business landscape of Pakistan, where small and medium-sized enterprises (SMEs) frequently encounter issues due to a lack of resources and fierce market competition. Cronbach's Alpha value point to the fact that the Structural Capital scale is dependable and consistent when it comes to gauging the idea of structural capital. We also discovered that H2, through structural capital, has a very good effect on intellectual capital for the long-term functioning of SME enterprises, which recognized a big role. This was another one of our discoveries. For instance, the research conducted by Beltramino et al, (2020) discovered that structural capital has a favorable influence on both performance and creativity in small and medium-sized businesses (SMEs). As a result, increasing structural capital would also boost the performance of organizations as well as their innovative capabilities.

Cronbach Alpha Analysis of Relational Capital

These Cronbach's alpha finding claims that an increase in relational capital has a beneficial impact on the capacity of an organization to recognize opportunities (both generate and uncover opportunities), Below the table 14 results indicates that an increase in relational capital positively impacts this ability.

Table-14. Cronbach's alpha for Relational capital

Number of items in scale: 5
Number of valid cases: 110
Number of cases with missing data: 0
Missing data were deleted: case wise
SUMMARY STATISTICS FOR SCALE

Mean: 22.672727273	Sum: 2494.0000000
Standard Deviation: 2.366079446	Variance: 5.598331943
Skewness: -.713205305	Kurtosis: -.613442131
Minimum: 17.000000000	Maximum: 25.000000000
Cronbach's alpha: .707980752	Standardized alpha: .768205697

Average Inter-Item Correlation: .411485398

This idea is supported by the findings of the study, which indicate that Cronbach's Alpha value for the Relational Capital scale is 0.77. The value of Cronbach's Alpha suggests that the items used to measure relational capital are reliable and internally consistent in terms of their ability to measure the underlying concept of relational capital.

The descriptive data provide additional perspectives into how the respondents see Relational Capital and its influence on opportunity recognition in small and medium-sized organizations (SMEs) in Pakistan. In the context of small and medium-sized businesses (SMEs), the research provides support for the hypothesis that there is a connection between relational capital and opportunity recognition. Increasing opportunity identification and utilization in small and medium-sized enterprises (SMEs) has been the focus of a number of research studies, and these studies have shed light on the necessity of significant external networks, collaborations, and interactions with stakeholders.

For instance, Debicki et al (2020) researched the impact relational capital has on the level of innovation performance in small and medium-sized businesses (SMEs). According to the findings, smaller businesses with significant relational capital, defined as strong links with consumers, vendor partners, and affiliates, were more likely to identify and capitalize on market opportunities, which led to superior innovation performance. As a result of relational capital's expanding significance in business and marketing research, it has come to be viewed as the principal type of capital that enables a company to maintain a competitive advantage.

Despite this, the majority of businesses are forced to shoulder ever-increasing transaction costs as a direct result of the opportunistic behavior of their partners (Ausat et al, 2022). Therefore, the continued existence of an organization is contingent on its capacity to capitalize on the intellect and creativity of its workforce, as well as the cultivation of relational capital through an ongoing process of education. According to research carried out by Ryu et al. (2021), SMEs that possessed a high level of relationally had a beneficial effect on the overall worldwide performance of SMEs. The findings of research project H3 can be considered respectable when seen in this light.

When employees have positive relationships with people who are not affiliated with the organization, these employees are better able to comprehend the needs of customers or markets. In a similar research to evaluate the impact that relational capital has on the internationalization of small and medium-sized enterprises (SMEs). The study found that smaller businesses were more likely to spot and capture opportunities in global marketplaces if they had created strong relational capital, especially in the form of strategic alliances and partnerships. The importance of social capital—a subset of relational capital—in encouraging entrepreneurial endeavors and spotting chances in SMEs was also recently underlined by research by Zhang et al (2021). The study's findings highlight the significance of personal and professional networks in the identification and pursuit of business opportunities.

The Relational Capital scale's Cronbach Alpha analysis results provide reliability of the scale used for **hypothesis H3**, which contends that a rise in relational capital has a beneficial effect on a business's capacity to see possibilities and take appropriate action (create and find chances). These results add to the body of evidence already available on the value of creating and utilizing relational capital in the context of SMEs.

In the presented findings, the Cronbach alpha values for all of the variables are higher than 0.7, which is a hint that the findings are favorable. It signifies that the data obtained for each of the variables (Human Capital, Relational Capital, Structural Capital, and Symptoms of Opportunities) are regarded reliable for measuring the relevant constructs. These variables include human capital, relational capital, structural capital, and symptoms of opportunities. The Human Capital variable has a Cronbach alpha value of 0.757, which suggests that the items used to assess this variable have a high level of internal consistency with one another. In a similar vein, Relational Capital has a Cronbach alpha score of 0.768, which indicates that the items connected to Relational Capital, can likewise be relied upon to provide accurate results when analyzing the construct. The Cronbach alpha score for Structural Capital is 0.760, which indicates that the items that are used to assess this variable have a decent degree of reliability.

Opportunities

The below table 15 present the value of opportunities 0.810170516 that was found for the Cronbach's alpha scale is regarded as being in the excellent range

Table-15. Dependent variable (Opportunities)

Number of valid cases: 110
Number of cases with missing data: 0
Missing data were deleted: case wise

SUMMARY STATISTICS FOR SCALE

Mean: 35.045454545	Sum: 3855.0000000
Standard Deviation: 5.570871761	Variance: 31.034612177
Skewness: -.888875816	Kurtosis: 1.807978675
Minimum: 13.000000000	Maximum: 45.000000000
Cronbach's alpha: .810170516	Standardized alpha: 8192702

Average Inter-Item Correlation: .350706645

Higher numbers indicate that the scale has a higher level of internal consistency or dependability. The elements that make up the "opportunities" scale are fairly consistent with one another, as shown by the Cronbach's alpha test result (0.810). In other words, the items on the scale are assessing the same thing, which is the ability to recognize opportunities when they

present themselves. The components on the scale are probably measuring the same fundamental notion, and the scale as a whole can be relied upon. Because of this, the scale generates results that are reliable and consistent, and as a result, it may be used without fear of bias to evaluate the ability of the participants to identify opportunities. In conclusion, the "opportunities" scale displays strong internal consistency and reliability based on the findings of the Cronbach's alpha test. Because the items contained within the scale are consistent and reliable indicators of the construct that is being evaluated, researchers can have confidence in the use of this scale to assess and measure the participants' ability to recognize opportunities.

3.4 Discussion of the results

The primary hypothesis H0 of the dissertation says that “as intellectual capital increases, the firm's ability to recognize opportunities (opportunity creation and opportunity discovery) increases”.

The findings of the Spearman's rank correlation test are in the following table 16 which indicate that there is a correlation between the variables that is statistically significant.

Interpretation of the Spearman Test

Table 16. Correlation

	Spearman Rank Order Correlations (RIC 02)														
Variable	IH1	IH2	IH3	IH4	IH5	IS1	IS2	IS3	IS4	IS5	IR1	IR2	IR3	IR4	IR5
DV1	0.443	0.439	0.093	0.379	0.369	0.215	0.285	0.403	0.434	0.615	0.206	0.572	0.620	0.605	0.591
DV2	0.484	0.489	0.214	0.448	0.443	0.301	0.363	0.452	0.448	0.572	0.187	0.475	0.580	0.541	0.565
DV3	0.257	0.286	0.043	0.280	0.258	0.223	0.169	0.290	0.244	0.415	0.302	0.366	0.354	0.294	0.394
DV4	0.135	0.215	-0.005	0.123	0.164	0.240	0.219	0.189	0.103	0.182	0.314	0.068	0.026	-0.053	0.094
DV5	0.208	0.207	-0.064	0.220	0.238	0.341	0.390	0.307	0.253	0.325	0.427	0.159	0.185	0.104	0.185
DV6	0.005	-0.115	-0.018	0.129	0.071	0.217	0.214	0.065	-0.050	0.047	0.280	0.125	0.077	0.068	0.123
DV7	-0.086	-0.074	0.004	-0.217	-0.038	0.039	-0.101	-0.206	-0.239	-0.178	0.129	-0.227	-0.302	-0.351	-0.235
DV8	0.095	0.204	0.187	0.189	0.299	0.265	0.236	0.060	0.108	0.138	0.300	0.134	0.186	0.095	0.131
DV9	-0.021	0.022	-0.063	0.012	0.119	0.190	0.190	-0.029	-0.052	0.036	0.217	-0.091	-0.146	-0.172	-0.034
DV10	0.013	0.042	-0.052	0.095	0.153	0.231	0.047	0.018	-0.048	0.081	0.312	-0.046	-0.105	-0.104	0.027

- Red numbers present statistically significant correlation

The correlation is calculated to be in the red, this indicates that there is a significant and robust association between the two variables that are being looked at. In this specific situation, a significant correlation indicates that when one variable increases, the other tends to increase in a similar way. The study's focus is on how local small and medium-sized enterprises (SMEs) expand into international markets, represented by the dependent variable (DV7) enter new foreign market. Data for this study was collected from local and provincial SMEs in the

province through their responses to questions about opportunities in the domestic market. Using Spearman's rank correlation, researchers can explore if opportunities in the domestic market influence SMEs' decisions to enter overseas markets. A statistically significant correlation would suggest that as the number of opportunities in the domestic market grows, small and medium-sized businesses are more likely to explore international expansion. The empirical research findings have so successfully met the study's objectives by providing in-depth insights into the relationship between intellectual capital and opportunity recognition in SMEs. The study's practical implications for local SMEs suggest that a positive perception of domestic market potential could inspire these businesses to venture into and expand their commercial operations overseas. However, it's essential to keep in mind that correlation doesn't always mean causation; even though a significant correlation exists between the variables, it doesn't conclusively establish a cause-and-effect relationship. It is possible that the decisions of SMEs to enter overseas markets are also influenced by a variety of additional elements and characteristics.

In the outcomes of the Spearman Rank Order correlation testing that have been provided, we have a table that displays the correlation coefficients between two different sets of data. These sets of variables are referred to as the Independent data (IH1 to IH5, IS1 to IS5, and IR1 to IR5) and the Dependent Variables (DV1 to DV10) as shown in above table. The correlation coefficients, which range from -1 to 1, indicate the quantity of the relationship connecting the variables and also point in the direction of that relationship. It is in your best interest to understand how the analysis of the Spearman test is understood and how it connects to the many variables. When it comes to interpreting the correlation coefficients, it is important to keep in mind that positive correlation coefficients (such as 0.443, 0.484, and 0.257) (as shown in table above) point to a positive connection among the variables. The value of the other variable has a strong tendency to increase in conjunction with the value of the first variable whenever the first variable's value goes up. A negative relationship is indicated when the correlation coefficient is negative (for example, -0.086, -0.021, or 0.013). When one variable's value rises, the other variable's value typically falls due to this relationship.

Magnitude of Correlation

A strong relationship exists between the two variables if the correlation coefficients are relatively near to 1 or -1. For instance, a coefficient of 0.615 shows a moderately strong positive link, while a value of -0.217 suggests a pretty strong negative relationship. A lower degree of correlation between the variables is indicated by correlation coefficients that are closer to 0. For example, figures such as 0.095 or -0.064 point to a relationship that is not as strong.
Below is the detailed interpretation of relations and significance of the variables as per Spearman Testing for the hypothesis.

Hypothesis 1 (H1) - An increase in human capital has a positive effect on a company's ability to recognize opportunities (opportunity creation and opportunity discovery)

The following is what can be determined from the analysis of the Spearman rank order correlations between the independent variables that reflect human capital (IH1 to IH5) and the dependent variables that represent opportunities (DV1 to DV10): IH1, which stands for "Human Capital Aspect 1," has a correlation coefficient of 0.443*, which indicates that it has a positive and moderately strong relationship with opportunities (DV1 to DV10). This would imply that a stronger ability to recognize opportunities is related to the variable of human capital IH2 which is “The basis for the development of our company is investment in the knowledge and skills of our employees”) likewise has a positive correlation with opportunities, and the strength of this correlation is moderately substantial (the correlation coefficient is 0.439*). In addition, IH3 (We employ only staff with high skills), which has a correlation coefficient of 0.093, has a weaker positive link with opportunities than the other two aspects of human capital. Even while it is still positive, the link is lower than it was between IH1 and IH2. IH4 (Human Capital Aspect 4) has a correlation coefficient of 0.379*, which indicates that there is a positive and moderately high link between opportunities and IH4 (Our R&D employees are very well educated).

Overall, the high positive correlations between elements of human capital (IH1, IH2, and IH4) and opportunities imply that when these aspects of human capital rise, the company's capacity to recognize opportunities (both creation and discovery) also tends to improve. This is because of the substantial beneficial associations among variable of human capital as mentioned in (questionnaire appendice) (IH1, IH2, and IH4) and opportunities. However, it is crucial to consider the weaker link with IH3, which shows that this particular facet “We employ only

staff with high skills" of human capital may have a smaller impact on recognizing opportunities. This is something that needs to be taken into consideration.

Hypothesis 2 (H2) - An increase in structural capital has a positive impact on a company's ability to recognize opportunities (create and discover opportunities).

The results of the Spearman rank order correlations among the independent variables that represent structural capital (IS1 to IS4) and the dependent variables that represent opportunities (DV1 to DV10) show that IS1 (The relationship between management and employees in our company is friendly) demonstrates a positive and moderately strong correlation with opportunities, with a correlation coefficient of 0.215*. This pertains to hypothesis 2, which states that structural capital is positively correlated with opportunities. IS2, Our employees have a high degree of decision-making autonomy (empowerment)" exhibits a similarly positive and relatively significant link with opportunities, as measured by a correlation coefficient of 0.285*.

Additionally, if we take a look at the IS3 (Our management and operational processes ensure the delivery of products of the highest quality and within deadlines with customers), we can see that there is a positive and moderately robust association between opportunities and structural capital, with a correlation coefficient of 0.403*. The fourth aspect of structural capital, known as IS4 (Our company is focused on processes that are key to customer value), has a correlation coefficient of 0.434*, which indicates a positive and moderately significant connection between the two.

As a whole, the large positive correlations between characteristics of structural capital (IS1, IS2, IS3, and IS4) and opportunities represent that as these components of structural capital rise, the company's ability to recognize opportunities (both creation and discovery) also tends to improve. This is because of the significant positive correlations between structural capital and opportunities. Given the substantially greater association with IS3, this part of structural capital may have a more significant impact on recognizing opportunities. This is shown by the fact that the correlation is relatively stronger.

Hypothesis 3 (H3) - An increase in relational capital has a positive impact on a company's ability to recognize opportunities (create and discover opportunities).

Subsequently, in regard to the third hypothesis, the Spearman rank order correlations between the independent variables that represent relational capital (IR1 to IR3) and the dependent variables that represent opportunities (DV1 to DV10) are IR1 (Our customers are very loyal to our company) exhibit a positive and moderately strong correlation with opportunities, with a correlation coefficient of 0.206*. This indicates that the first hypothesis is supported by the variables. The IR2 (Our company has a wide network of partners with whom it maintains regular cooperation) score has a correlation coefficient of 0.572*, which indicates that there is a positive and moderately high link among IR2 and opportunities. In addition, Relational Capital Aspect 3, often known as IR3 (Our company has a wide but variable network of partners, which it selects for individual projects), exhibits a positive link with opportunities, albeit a weaker one, as measured by a correlation coefficient of 0.620*.

The considerable positive correlations between relational capital elements (IR1 and IR2) and opportunities show that when these aspects of relational capital rise, the organization's ability to recognize opportunities (both creation and discovery) tends to improve. This is similar to the ideas that were presented earlier. On the other hand, the reduced link with IR3 suggests that this particular facet of relational capital has a minor effect on one's ability to recognize opportunities. In conclusion, the Spearman rank order correlations provide valuable insights into the links between the many dimensions of opportunity recognition, relational capital, structural capital, and human capital that were examined in your research. You may decide which features of each form of capital are most influential in recognizing opportunities by doing an analysis of the correlations and taking into consideration the statistical significance of those associations. The results of this study contribute to the comprehension of how different forms of capital can boost a company's ability to identify and grasp opportunities in the business environment leading to support the hypothesis and the acceptability for the research. This understanding is crucial for making educated managerial decisions and attaining success in the business world.

Significant impact of human capital variables on dependent variables

The independent variables are significantly related and impacted on the symptoms of opportunity recognition. Figure 3 presents the human capital independent variables investigated, (IH1), (IH2) (IH3), (IH4), (IH5) collectively contribute to SMEs' ability to monitoring and scanning the-changes in the macro-environment (Dv1), encompassing political, legal, and economic shifts. If a company's employees possess a high level of knowledge and experience, they are more likely to understand market trends and systemically developing the strategies on the industrial level (Dv2). Increase in human capital could be the outcome Finding an opportunity based on the fact that the subcontractor is able to produce quicker and more value than the present supplier can lead to the establishment of collaboration with new suppliers and subcontractors (Dv3). Investment on human capital may enhance the ability to take leading position to search and seize the opportunity related customer need to introduce new product (DV4). Skilled employees they recognize the need and expectation, to give maximum customer satisfaction, which identify the customer-oriented opportunity (DV8).

The case of negative correlation between IH4 and DV7 (entering new foreign markets) is difficult to interpret in the light of our studies. A potential explanation may be that more educated workers first seek easier opportunities in huge domestic markets rather than more difficult opportunities in foreign markets.

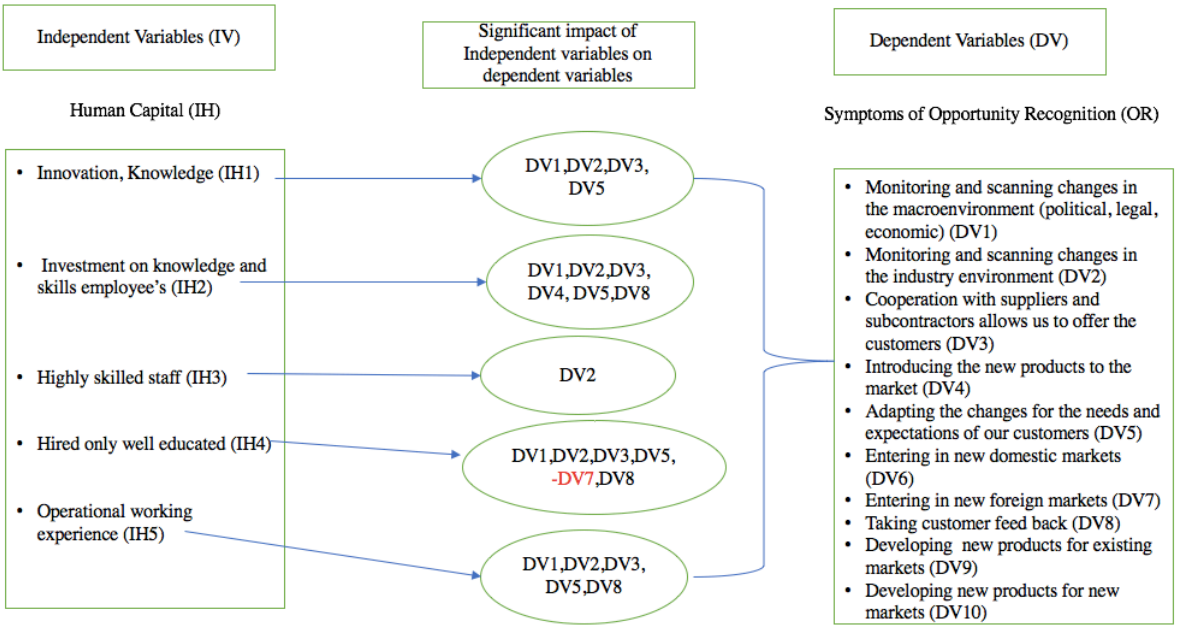


Fig 3 Significant impact of human capital variables on dependent variables

Significant impact of structural capital variables on dependent variables

Structural capital, which embrace knowledge management arrangement and development, is a significant factor in increasing opportunity recognition and plays a crucial part in the overall value of the company. Figure 4 presents the independent variables of structural capital (IS1), (IS2), (IS3), (IS4), (IS5) have common essential impact on monitoring and scanning the legal and economic changes to enhance the company ability to create an opportunity (DV1), Empowered employees are more proactive in identifying customer knowledge in results the greater advantages in competitive and industrial environment (DV2). The company systemic operation process is situations in which collaborating with new subcontractors, services providers, supplier of raw materials and markets analysis (DV3). Focused on customers value is favorable situation to finding an opportunity for the new products launch (DV4). Moreover, prioritizing operational processes and quality control that directly impact customer value ensures that product development and changes to retain customers (DV5).

The respondents are more eager to identify opportunities within the domestic market. which would offer them more possibilities and a chance to attract customers and control all the processes. Therefore, negative correlation between (IS3), (IS4), and DV7 (entering new overseas markets)

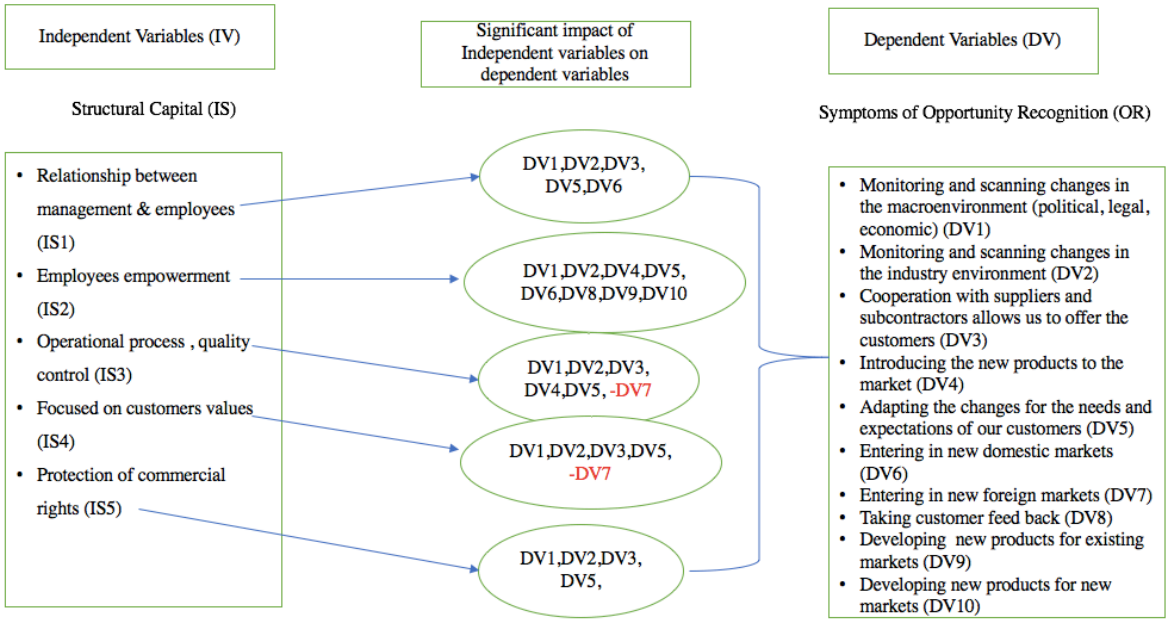


Fig 4 Significant impact of structural capital variables on dependent variables

Significant impact of relational capital variables on dependent variables

Relational capital build strong relationships with external stakeholders, such as suppliers, consumers, and colleagues in the sector, it provides assistance to the managers. The figure 5 presents independent variables of relational capital (IR1), (IR2), (IR3), (IR4), (IR5) has common impact to gain and access the use full information of legal and economic changes which identify and capitalize on developing market trends and business opportunities (DV1). It is important to have extensive networks and strategic partnerships with better position to identify the changes in industrial sectors (DV2). As a wide network of cooperative partners can provide access to resources and expertise that enhance your ability to offer customers a broader range of products or services (DV3).Moreover, Collaboration with R&D individual partners can boost innovation capabilities. It can lead to the development and introduction of new and innovative products to the market (DV4) customer feedback is valuable source of insights for making necessary changes or modifications to meet customer expectations (DV5). Feedback from the loyal customer play a vital role in the innovation and product development, and a smoother entry into new markets (DV6).

A possible explanation is that professional people first go for simpler chances in sizable domestic markets rather than more challenging ones in international markets. This potentially effect negative correlation of independent variables (IR2),(IR3)(IR4),(IR5) with dependent variable DV7.

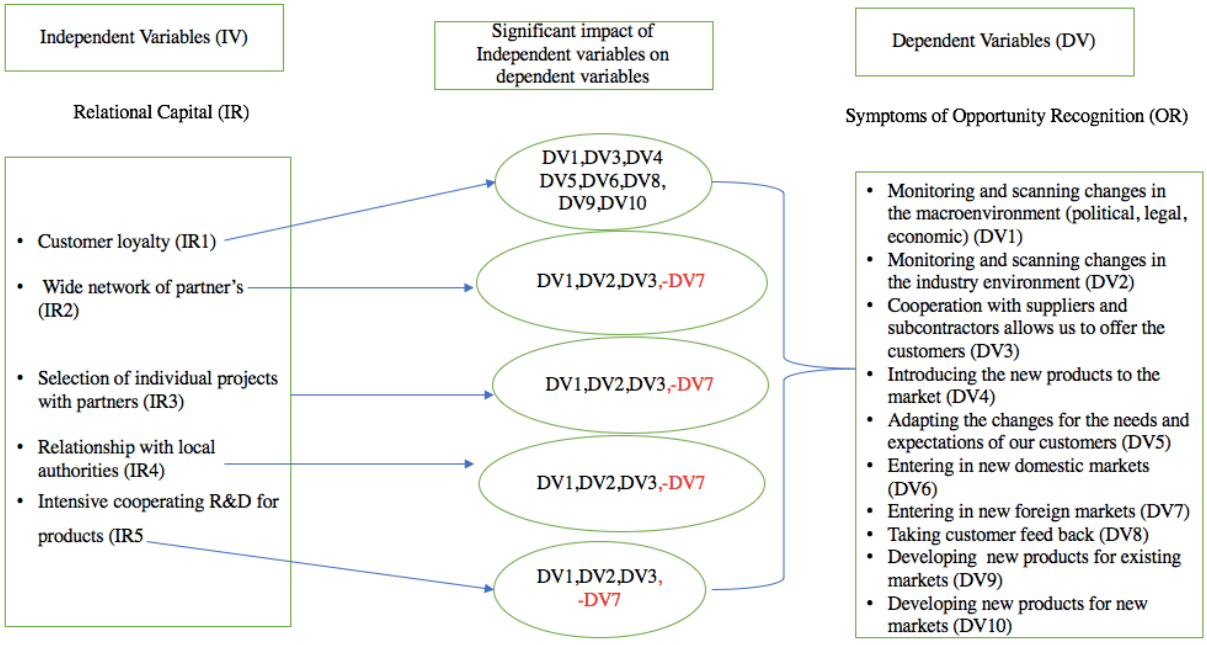


Fig 5 Significant impact of Relational capital variables on dependent variables

Kruskal-Wallis test Results

Human Capital

The Kruskal-Wallis test is a non-parametric test used to determine whether there are significant differences between three or more levels (IV1) on a dependent variable (DV1) that is measured on an ordinal scale. In this case, the Kruskal – Wallis test is applied to the data provided as shown in the form of table 17 to assess whether there are any statistically significant differences in DV1 among the variables represented by IV1 values of 3, 4, and 5.

The category or group identification in the data is referred to as the "Code". Three classifications or groups—designated 3, 4, and 5—in this instance as shown in table 10 below. The number of valid observations (samples) inside each category or group is shown in the "Valid" column. For instance, there are 4 valid observations under category/group 3, 31 valid observations under category/group 4, and 75 valid observations under category/group 5. For each category or group, the dependent variable's (DV1) sum is shown in the "Sum of" column. It represents the sum of each group's individual values. As an illustration, the total of the DV1 values for category/group 3 is 139.500, group 4 is 113.000, and group 5 is 4835.500. The dependent variable's (DV1) mean (average) value for each category or group is shown in the "Mean" column. It is determined by dividing the total of each group's DV1 values by the total number of reliable observations in that group. The means for categories/groups 3, 4, and 5 are 34.87500 for category/group 3, 36.45161 for category/group 4, and 64.47333 for category/group 5.

Following the table 17 presents the results of Kruskal-Wallis test results of Independ variable 1 and dependent variable 1.

Table-17: Kruskal-Wallis test

(IV1) Innovation, knowledge Experience

(DV1) Monitor and Scan changes macroenvironment

Kruskal-Wallis ANOVA by Ranks; Dv1 (RIC IHV1)
Independent (grouping) variable: Iv1
Kruskal-Wallis test: H (2, N= 110) =21.65074 p =.0000

Depend.: Dv1	Code	Valid	Sum of	Mean
3	3	4	139.500	34.87500
4	4	31	1130.000	36.45161
5	5	75	4835.500	64.47333

The Kruskal-Wallis test results indicate that the p-value is 0.0000, which is highly statistically significant ($p < 0.001$). This suggests that there is a significant relationship between the independent variable (human capital, IV1) and the dependent variable (opportunity recognition, DV1).

This infer importance about the relationship between opportunity recognition (DV1) and the various levels of human capital (IV1) in the context of the research topic, which is the influence of intellectual capital on opportunity recognition in SMEs, based on the outcomes of the Kruskal-Wallis test and the accompanying summary statistics. Practically, this approach emphasizes the importance of funding the development of human capital within SMEs. A company's ability to spot possibilities that might otherwise go overlooked can be improved through enhancing employee skills, knowledge, and experience. The results provide support for the hypothesis that increasing human capital can lead to improved opportunity recognition in the context of the research question.

Significance of IVI-DV1

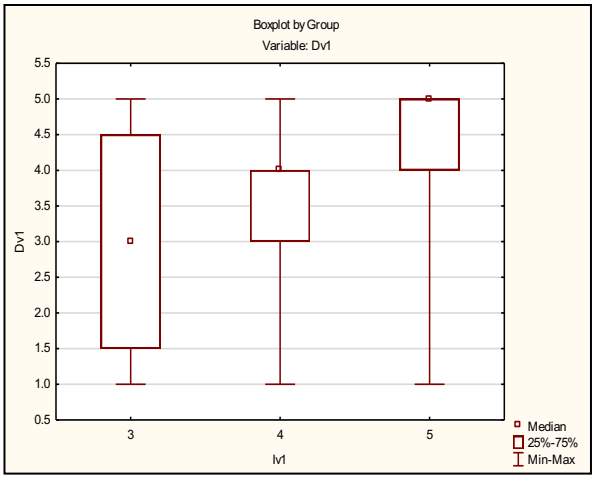
Following table 18 presents the test result of independent variable IV1 and dependent variable DV1

Table-18 Different impact of levels

(IV1) Innovation, knowledge Experience

(DV1) Monitor and Scan changes macroenvironment

	Multiple Comparisons p values (2-tailed); Dv1 (RIC IHV1) Independent (grouping) variable: Iv1 Kruskal-Wallis test: H (2, N=		
Depend.:	110) =21.65074 p =.0000		
Dv1	3	4	5
3		1.000000	0.211725
4	1.000000		0.000117
5	0.211725	0.000117	



According to the findings of the Kruskal-Wallis test, the value of the test statistic, denoted by the letter H, is determined to be 21.65074, and the p-value is given as p = 0.0000 (or p 0.001).

This evaluation's independent variable is the statement that "(IV1) Our company is innovative thanks to the knowledge and experience of our employees." This presents the company's degree of human capital. This analysis' dependent variable is the claim that "(DV1) The company monitors and scans changes in the macroenvironment (political, legal, economic, technological)."

This difference means that level (4) of innovation (IV1) has a different statistically significant impact on environmental monitoring and scanning (DV1) than level (5). However, the relationship between levels (3) and (4) is linear and the impact of levels (3) and (5) is different but is not statistically significant.

Therefore, the results of this analysis provide evidence to support Hypothesis 1. They suggest that the level of human capital (as indicated by the statement about employee knowledge and experience) has a significant effect on the company's ability to recognize changes in the macro environment, which is a crucial aspect of opportunity recognition.

Significance of IVI-DV2

Following table 19 presents the test result of independent variable IV1 and dependent variable DV2

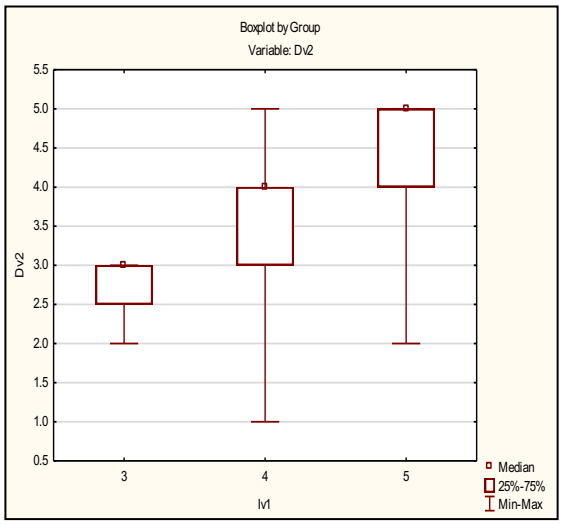
Table-19 Different impact of levels

(IV1) Innovation, knowledge Experience

(DV2) Scan changes in the industrial microenvironment

Multiple Comparisons p values (2-tailed); Dv2 (RIC IHV1)
Independent (grouping) variable: Iv1
Kruskal-Wallis test: H (2, N= 110) =26.99692 p =.0000

Depend.: Dv2	3	4	5
3		0.282327	0.002743
4	0.282327		0.000429
5	0.002743	0.000429	



Given that Hypothesis 1 (H1) asserts that an increase in human capital has a positive effect on a firm's ability to recognize possibilities (opportunity creation and opportunity discovery), The results presents that independent variable is the statement that "(IV1) Our company is innovative thanks to the knowledge and experience of our employees." This presents the company's degree of human capital. This analysis' dependent variable is the claim that "(DV1) The company monitors and scans changes in the microenvironment (industrial, supplier, competitors). "

When comparing level 3 "innovation and knowledge" and level 4, the impact is different, not statistically significant. However, level 5 of DV2 "Scan changes in the industrial microenvironment". Has more impact of (IV) Our company is innovative thanks to the

knowledge and experience of our employees. This means that the variable of human capital within these two groups plays a significant role in shaping the company's ability to spot opportunities in the market.

In more straightforward terms, having a well-equipped workforce and investing in human capital development can greatly enhance a business's potential to identify and capitalize on opportunities in the market

Structural Capital

Significance of IS1-DV2

Multiple Comparisons of variable IS1 with Dependent variable DV2 in following table 20.

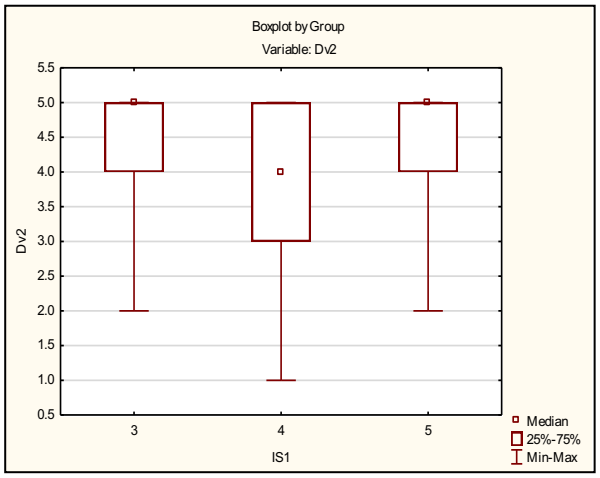
Table-20 Different impact of levels

IS1(Relationship between management & employee)

DV2 (Scan changes in the industrial microenvironment)

Multiple Comparisons p values (2-tailed); Dv2 (RIC IS1) Independent (grouping) variable: IS1 Kruskal-Wallis test: H (2, N= 110) =12.88725 p =.0016

Depend.: Dv2	3	4	5
3		0.949747	1.000000
4	0.949747		0.003083
5	1.000000	0.003083	



The dependent variable is the statement that (DV2) "The company monitors and scans changes in the industry environment (customers, suppliers, competitors)." According to this claim, the organization is capable of identifying changes in the industry environment, which is essential for finding opportunities.

The there is a linear relationship between level 3 and level 4, but statistically not significant, the difference between level (4 and 5) in terms of the company's capacity to track and scan

changes in the industry environment. present statistically significant impact on environmental monitoring and scanning (DV2). The more employee-oriented companies scan the macroenvironment more effectively and efficiently.

it can be deduced that businesses with greater levels of structural capital have a significantly increased likelihood of both creating and discovering opportunities, in comparison to those businesses with lower levels of structural capital.

Significance of IS5-DV2

Multiple Comparisons of variable IS5 with Dependent variable DV2 in following table 21.

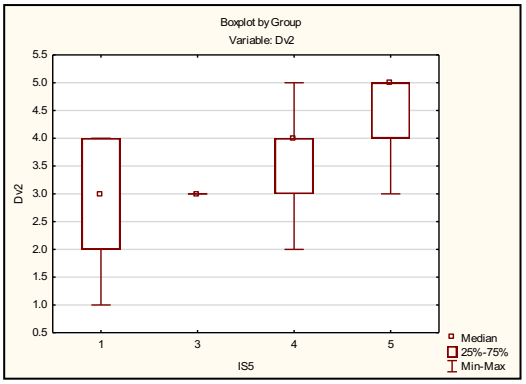
Table-21. Different impact of levels

(IS5) Protection of commercial rights

(DV2) Scan changes in the industrial microenvironment

Multiple Comparisons p values (2-tailed);
Dv2 (RIC IS1)
Independent (grouping) variable: IS5
Kruskal-Wallis test: H (3, N= 110)
Depend.: =36.21616 p =.0000

Dv2	1	3	4	5
1		1.000000	1.000000	0.004894
3	1.000000		1.000000	0.026598
4	1.000000	1.000000		0.000254
5	0.004894	0.026598	0.000254	



In this analysis, the independent variable IS5 is referred to as "Our company owns numerous protected commercial rights (patents, copyrights, trademarks)." This most likely indicates the degree to which the business is in possession of structural capital, which includes intellectual property rights like patents, copyrights, and trademarks.

The Kruskal-Wallis test findings show a statistically significant difference between level (1, 3, 4, and 5) in terms of the company's capacity to track and scan changes in the industry environment. The ability to monitor and scan the industry environment is significant between

level 1 and 5, according to the p-value of 0.004894 for this comparison. Level 5 appears to be very different from level 1 in comparison.

Therefore, the outcomes of this investigation strongly support Hypothesis 2. They contend that a company's capacity to track and scan changes in the industry environment, an essential component of opportunity recognition, is directly tied to the degree to which it possesses protected commercial rights, such as patents, copyrights, and trademarks.

Relational Capital

Significance of IR1-DV5

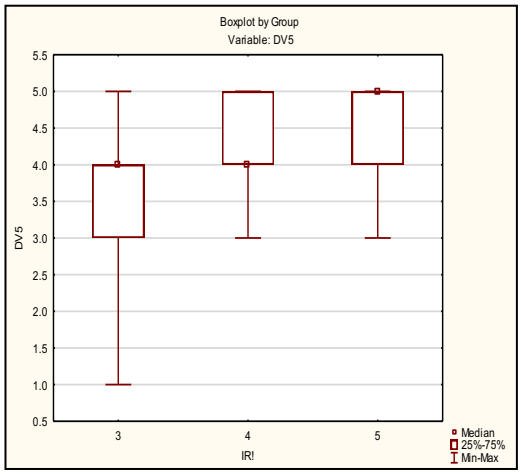
Multiple Comparisons of variable IR1 with Dependent variable DV5 in following table 22.

Table-22. Different impact of levels

(IR1) Customers loyalty

(DV5) Cooperation with supplier and subcontractor's

	Multiple Comparisons p values (2-tailed); DV5 (RIC IR1) Independent (grouping) variable: IR! Kruskal-Wallis test: H (2, N= 110) =19.83877 p =.0000		
Depend.: DV5	3	4	5
3		0.688766	0.002768
4	0.688766		0.004944
5	0.002768	0.004944	



In this analysis, the independent variable is (IR1)"Our customers are very loyal to our company." The strength of the company's relational capital, particularly in terms of client loyalty, is likely reflected by this characteristic. This analysis' dependent variable is the claim that (DV5)"We adapt our products and technologies to the needs and expectations of our customers." This claim shows that the business can adapt its products and technologies to match the needs and expectations of customers, which is a crucial component of opportunity

recognition. The findings between level (3, 4 and 5) (IR1)"Our customers are very loyal has shown a statistically significant impact in terms of the (DV5)"company's capacity to modify its products and technology in response to the demands and expectations of its customers". Therefore, the results of this analysis provide support that the level of relational capital, particularly in terms of customer loyalty, is significantly related to the company's ability to adapt its products and technologies to customer needs and expectations

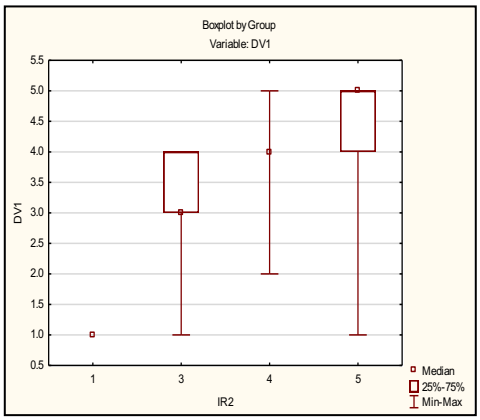
Significance of IR2- DV1

Multiple Comparisons of variable IR2 with Dependent variable DV1 in following table 23.

Table-23. Different impact of levels
(IR2) Wide range of network and partner's
(DV1) Monitor and scan changes in macroenvironment

Multiple Comparisons p values (2-tailed);
DV1 (RIC IR1)
Independent (grouping) variable: IR2
Kruskal-Wallis test: H (3, N= 110)
Depend.: =36.19167 p =.0000

DV1	1	3	4	5
1		1.000000	1.000000	0.222192
3	1.000000		1.000000	0.003448
4	1.000000	1.000000		0.000025
5	0.222192	0.003448	0.000025	



The Kruskal-Wallis test findings show that there is a statistically significant difference between level (1, 3, 4, and 5) in terms of the company's capacity to track and scan changes in the macroenvironment. There are significant differences between the groups, as shown by the accompanying p-value, which provides strong evidence to reject the null hypothesis.

Therefore, the results of this analysis provide support for Hypothesis 3. They suggest that the level of relational capital, particularly in terms of a wide network of partners and collaborations, is significantly related to the company's ability to monitor and scan changes in the macroenvironment.

4. Conclusions

4.1 Theoretical and managerial implication

The research findings and their theoretical and managerial applications are of utmost importance for both academic and managerial settings, and this research paper study on the "Impact of Intellectual Capital on Opportunity Recognition in SMEs of Pakistan" does much better explain the significance of these findings.

Theoretical Implications

The investigation has made a contribution to the current body of information on Intellectual Capital Theory as a result of this research, which is a step in the right direction toward advancing the theory. The research has improved the theoretical knowledge of how intellectual capital improves the capability of small and medium-sized enterprises (SMEs) to recognize and capitalize on opportunities. Specifically, the research has done this by experimentally confirming the links between human, structural, and relational capital with opportunity recognition in SMEs. In addition to this, the outcomes of the study are consistent with creation Theory, which places emphasis on the role that organizations play in the process of knowledge production and dissemination within their ranks.

The findings support the premise that cultivating a learning culture and investing in intellectual capital can boost the proactive nature of small and medium-sized enterprises (SMEs) in recognizing and capitalizing on possibilities in their respective business environments by proving the positive influence that intellectual capital has on the recognition of opportunities.

In addition, the study uses a deductive method to research, meaning that the researchers formulated hypotheses based on previously established ideas and then tested those assumptions using actual data. The fact that these hypotheses were validated through statistical analysis lends credence to the efficiency of the deductive method when it comes to investigating the correlations between the variables associated with intellectual capital and opportunity recognition. The already extensive body of research on this topic is expanded upon by the addition of the agile methodology as a variable. The research results provide beneficial information for academics interested in the junction of intellectual capital and agile methodologies as a result of our investigation into the dynamic relationship between agile

practices and intellectual capital. Nevertheless, the ramifications of the findings of the research on stakeholder theory and managerial strategy are discussed. The relative importance of different stakeholders in different nations has an effect on the strategic management of businesses, regardless of the scale of those organizations' operations (whether local or global) (Ioannou and Serafeim, 2012). From the diverse perceptions of legitimacy, power, and urgency ascribed to the various stakeholders during the research, it would appear that not all stakeholders are regarded in the same manner in all of the numerous geographical locations. The societal, political, and economic dynamics at play all contribute to the formation of stakeholders and the organizations with which they are affiliated. Previous research has provided copious amounts of evidence that culture has a significant bearing on the management of organizations.

Managerial Implications

The outcomes of this study have numerous useful managerial implications for the relevant parties, including private companies, public organizations, and other stakeholders particularly the managerial level employees working in those firms. The findings could serve as a reference for small and medium-sized enterprise managers and owners to identify the best opportunities for entrepreneurial ventures. The outcomes of this research can provide us, as managers and decision-makers in SMEs, with valuable information that can inform resource allocation methods.

The independent variables are significantly related and impacted to dependent variables in context to macro and industry environment Based on the figure 6. The independent variables investigated, including innovation and knowledge (IH1), investment in knowledge and skilled employees (IH2), emphasis on hiring well-educated individuals (IH4), and operational working experience (IH5), collectively contribute to SMEs' ability to monitor and scan changes in the macroenvironment, encompassing political, legal, and economic shifts (DV1). By fostering a culture of innovation (IH1) and investing in employee development (IH2), SME managers can equip their teams with the knowledge and skills necessary to effectively analyze and adapt to changing external factors. Prioritizing the recruitment of well-educated individuals (IH4) and valuing operational experience (IH5) further enhances the company's capacity to comprehend and respond to macro environmental changes.

Moreover, the relational capital aspects, such as the relationship between management and employees (IS1), employee empowerment (IS2), efficient operational processes and quality control (IS3), a focus on customer values (IS4), and the protection of commercial rights (IS5), have profound implications for monitoring the macroenvironment. A positive management-employee relationship (IS1) fosters open communication and ensures that valuable insights regarding political, legal, and economic changes are effectively shared and acted upon. Employee empowerment (IS2) encourages a proactive approach to monitoring, where employees take ownership of tracking and responding to external shifts. Efficient operational processes (IS3) and a customer-centric focus (IS4) streamline operation and ensure that the company remains agile in adapting to macroenvironmental changes. Additionally, protecting commercial rights (IS5) safeguards intellectual property and knowledge assets, which are crucial in navigating the complex macroenvironment. The relational capital variables further strengthen the link to DV1 by collectively enhancing an organization's ability to monitor and scan changes in the macroenvironment.

The independent variables identified in this study possess significant implications for a manager and firm ability to monitor and scan changes in the industry environment, as represented by DV2. Innovation (IH1) is paramount; fostering a culture of innovation empowers managers to stay ahead in dynamic markets by investing in research and development and encouraging creative thinking among employees. Investing in knowledge and skill employees (IH2) ensures that the workforce is equipped to analyze and respond to emerging trends effectively. Similarly, highly skilled staff (IH3) and well-educated recruits (IH4) bring valuable insights and fresh perspectives to industry analysis. Operational working experience (IH5) is crucial, as it enhances the ability to identify changes in the industry environment through practical knowledge.

Furthermore, the relationships and collaboration aspects of relational capital play a vital role. A positive relationship between management and employees (IS1) fosters open communication and idea-sharing, enabling the efficient dissemination of insights regarding industry changes. Employee empowerment (IS2) facilitates a proactive approach to industry monitoring, as empowered employees take ownership of this responsibility. Effective operational processes and quality control (IS3) are essential for reducing distractions and errors, ultimately enhancing industry monitoring. Focusing on customer values (IS4) helps align strategies with customer preferences, ensuring that industry changes do not go unnoticed.

Additionally, the protection of commercial rights (IS5) contributes to a company's ability to monitor industry shifts by safeguarding intellectual property assets. A wide network of partners (IR2) provides valuable market insights and diverse industry knowledge, enriching the company's monitoring capabilities. Collaborative research and development efforts (IR5) through intensive cooperation can yield innovative products and position a company advantageously in its industry. Finally, a strong relationship with local authorities (IR4) offers access to industry-relevant information and regulatory insights, helping companies stay informed about changes in the industry environment. In essence, each of these independent variables contributes to enhancing an organization's ability to monitor and adapt to changes in the industry environment, collectively strengthening the link to DV2.

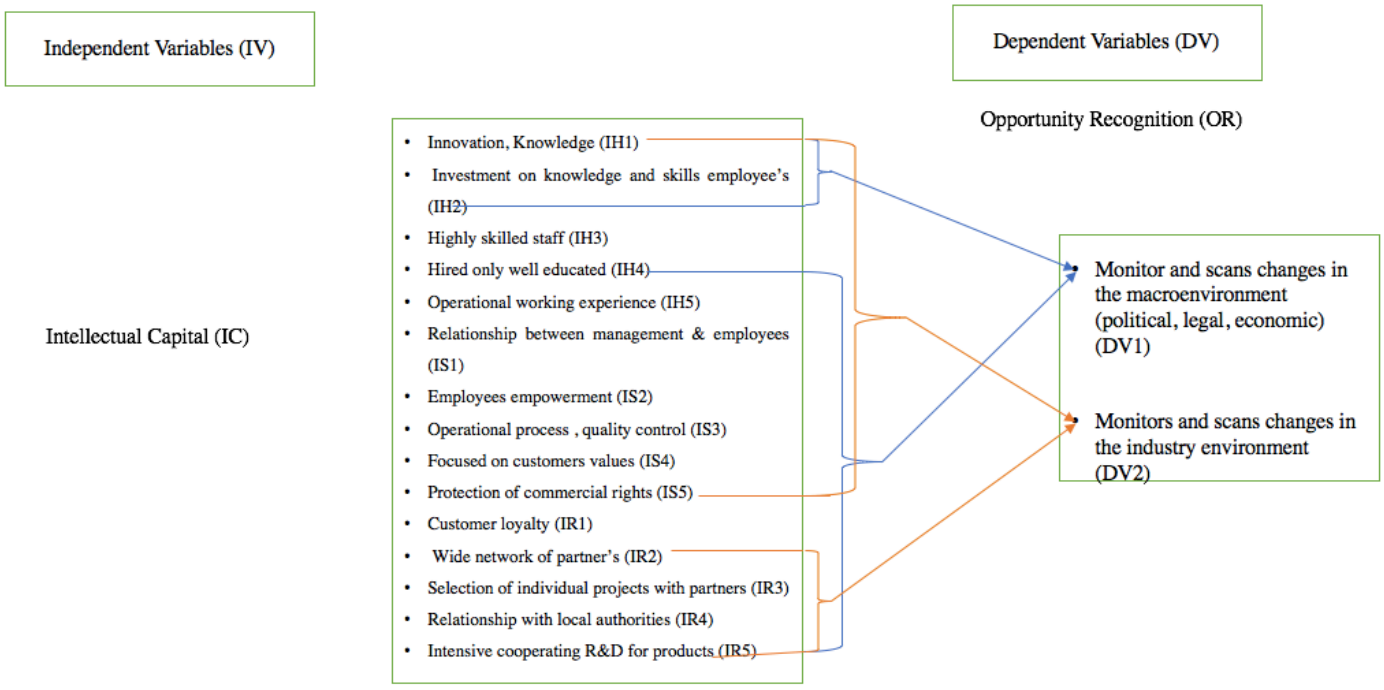


Figure 6. Sub contrast of independent variables with dependent variables

In this aspect as well, the use of mixed-methods research approaches could provide depth to the knowledge of the impact that intellectual capital has on the recognition of opportunities. When quantitative data from surveys are combined with the qualitative insights gained from interviews or case studies (Antwi and Hamza, 2015), it is possible to offer extensive and comprehensive perspectives on how intellectual capital influences the decision-making and opportunity recognition processes in small and medium-sized enterprises (SMEs). In addition,

conducting international comparisons between SMEs located in numerous nations can provide cross-cultural observations regarding intellectual capital's function in opportunity recognition. The worldwide comprehension of this issue can be improved by investigating how cultural and institutional differences affect the association between intellectual capital and opportunity.

As a result, the theoretical and managerial implications of our research provide extremely helpful viewpoints and results into the function of intellectual capital in the process of opportunity recognition for SMEs. As managers of small and medium-sized enterprises (SMEs) in Pakistan, the knowledge that we have obtained from this research enables us to strategically harness our intellectual capital and cultivate a culture of perpetual learning and innovation. In the constantly shifting environment of the business world, continuing to do this can improve our capacities to recognize and seize possibilities for long-term growth and success within the organization.

4.2 Limitation of the research

The study's reliance on a specific sample size, determined by the item response theory, might limit the generalizability of the findings. While the sample size calculation is a practical consideration, it may only partially represent the diverse population of SMEs in Pakistan. Larger sample sizes or more diverse sampling methods could provide more robust and comprehensive insights into the relationship between intellectual capital and opportunity recognition.

Further investigations will undoubtedly have to pay greater consideration to these research limitations. Initially, the fact that the data were gathered in Pakistan could have an impact on the generalizability of this study since it was conducted only in the setting of Pakistani small and medium-sized businesses. Replicating the study in different regions or cultural settings can enhance the research's external validity and contribute to cross-cultural comparisons as supported by De Witte et al (2021). Considering the European Green Deal seeks to transform the European Union's economy into one that is resourceful, sustainable as well as carbon neutral by 2050, the level of practices adopted by SMEs in European countries companies may provide additional information into sustainable procurement (Concerne and FR, 2020). Future studies may take advantage of cross-national and cross-cultural samples, where the level of assistance for SMEs' strategies may vary. Secondly, while different business kinds were established for this research in order to choose a variety of samples, it needs to be specified if this sample also accurately represents the characteristics of the sector. Both evaluating

innovation and determining how it aligns with the principles of sustainable development depends heavily on the industry-specifics. Researchers in the future might require filling in this vacuum in order to comprehend sustainability requirements for every sector; hence a mixed research design might be highly advised.

In addition to the above limitations, the data collected through a close-ended questionnaire based on a Likert scale might be subject to self-report bias. Respondents may provide socially desirable responses or overstate their intellectual capital practices and opportunity recognition capabilities, which could impact the accuracy and validity of the results. Utilizing multiple data collection methods, such as interviews or observations, could mitigate this limitation and provide a more holistic view of the phenomenon. Moreover, the research's cross-sectional design, which captures data at a single point in time, restricts our ability to establish causality between intellectual capital and opportunity recognition. Longitudinal studies or experimental designs would be better suited for inferring causality and understanding how changes in intellectual capital influence opportunity recognition over time. Although the scales used to measure intellectual capital, opportunity recognition, and agile methodology are well-established, they may need to fully capture the complexity of these constructs within the context of SMEs in Pakistan. Alternative or additional measures could offer a more comprehensive understanding of these variables and their impact on each other.

The study's focus on SMEs within the province of Punjab may introduce sampling bias, as it excludes SMEs from other regions of Pakistan. As a result, the findings may only partially represent some of the country's SME landscape. Considering a more diverse and nationally representative sample could enhance the external validity of the research. Moreover, endogeneity concerns may arise due to the simultaneous relationship between intellectual capital and opportunity recognition. Opportunity recognition influences investments in intellectual capital as much as the reverse. Addressing endogeneity concerns through advanced statistical methods or experimental designs can strengthen the study's causal claims. The study's analysis does not include control variables that could confound the relationship between intellectual capital and opportunity recognition. Factors such as firm size, industry type, and external market conditions may impact the observed relationship. Controlling these variables in future research could yield more accurate and precise results. Agile methodology's inclusion as a variable in the study relies on subjective perceptions of its adoption within SMEs. The varying interpretations of agile practices across organizations may introduce measurement

ambiguity and affect the reliability of the findings related to this variable. As the researcher has personal associations and links within the province of Punjab, there may be potential researcher bias in data collection and analysis. Conscious efforts to minimize bias and ensure objectivity in the research process are necessary to maintain the study's integrity. In spite of these limitations, the research offers important new perspectives on the connection between intellectual capital and opportunity recognition in small and medium-sized enterprises (SMEs) in Pakistan. The robustness and application of findings can be improved, and a deeper understanding of the subject matter can be achieved as a result. This can be accomplished by recognizing the limitations of the study and working to overcome them in subsequent research.

4.3 Prospective research

Prospective research, also known as future research or future directions, refers to potential areas of investigation and study that can build upon the existing research and address any limitations or gaps identified in the current study. Complementing the current quantitative research with qualitative studies, such as interviews or focus groups, can provide a deeper understanding of how intellectual capital influences opportunity recognition. Qualitative approaches can capture rich narratives and contextual factors that quantitative data might only partially capture. It may be possible to establish a causal relationship between shifts in intellectual capital and the recognition of new opportunities in SMEs by carrying out longitudinal research over an extended period. Research that is conducted over a longer period would provide useful insights into the dynamic nature of the relationship and how expenditures in intellectual capital affect the long-term results of a business.

In addition, researching case studies of prosperous small and medium-sized enterprises (SMEs) in Pakistan that are well-known for their excellent opportunity recognition can provide useful insights into the practical use of intellectual capital in situations that occur in the real world. Learning's that can be applied to other companies can be gleaned from these small and medium-sized enterprises (SMEs) by analyzing their business practices, strategies, and decision-making processes. When comparing the impact of intellectual capital on opportunity recognition across different industries, one can gain insight into patterns and issues that are unique to that industry (Andersson and Evers, 2015). There may be a variety of linkages between intellectual capital and prospects in various industries. These industries may have characteristics that are uniquely knowledge-intensive or technology-driven. Although the primary objective of this research was to investigate how intellectual capital influences

opportunity recognition, there is room for additional investigation into how investments in intellectual capital effect a variety of non-financial consequences. This is an area where further study is warranted. For example, doing research into the relationship between intellectual capital and the success of innovation, employee happiness, or customer loyalty could provide a more thorough understanding of the benefits that intellectual capital offers to small and medium-sized businesses (SMEs).

In addition, it is absolutely necessary to investigate the part that leadership plays in the process of cultivating a culture that respects intellectual capital and welcomes the recognition of opportunities. It is possible for research to investigate how various leadership styles and practices influence behaviors pertaining to innovation, knowledge-sharing, and overall organizational agility. When it comes to small and medium-sized enterprises (SMEs), having an understanding of the dynamics of leadership can offer light on how to develop a culture of innovation. In conjunction with this, it is required to investigate the dynamic relationship between intellectual capital and the external environmental elements. How small and medium-sized businesses (SMEs) make use of their intellectual capital to recognize possibilities can be influenced by a variety of factors, including changing rules, shifting market dynamics, and advances in technology. Businesses are able to change their tactics and make them more aligned with their goals when they evaluate the influence of these external factors. The creation of benchmarking tools to evaluate and evaluate intellectual capital practices among SMEs could provide useful insights into best practices and areas for improvement. Studies of benchmarking could make it easier for small and medium-sized businesses to share expertise and work together. The investigation of the connection between intellectual capital and the success of SMEs can provide extremely helpful insights into the wider business ramifications. When small and medium-sized businesses (SMEs) have a better understanding of the ways in which intellectual capital influences financial performance (Dženopoljac et al, 2016), growth, and sustainability, they will have more compelling evidence to support the decision to invest in their intangible assets.

These prospective research directions can enrich the understanding of the impact of intellectual capital on opportunity recognition in SMEs of Pakistan and contribute to the development of evidence-based strategies for SME growth and success. By exploring these areas, researchers can continue to advance knowledge in the field and offer practical implications for SME managers and policymakers.

4.4 Summarization

The research findings discussed above offer insightful information about the connection between intellectual capital and opportunity recognition in Pakistani SMEs. The study set out to accomplish a number of goals, and the results have provided knowledge regarding how members view various areas of the organization's operations and financial assets. Significant trends and patterns have been found in the observation and conclusions. It emphasizes how crucial it is for SMEs to foster a culture of learning and to make investments in their intellectual property. These investments demonstrate a beneficial impact on SMEs' proactivity in spotting and seizing opportunities. The methodology of the study is important because it develops hypotheses based on accepted concepts and statistically tests them against actual data. This method strengthens the validity of deductive methods for researching the relationships between intellectual capital variables and opportunity awareness. The results are quite relevant from a management standpoint.

This study can be used as a guide by SME owners and managers to pinpoint the most promising business opportunities. The findings provide useful information for resource allocation strategies. In the process of identifying opportunities, it has been discovered that human capital is of utmost importance. Programs that train and develop their workforce should be managers' top priorities. Human resources who are educated and knowledgeable are more likely to take entrepreneurial actions, promoting an organizational culture of opportunity recognition. Improvements in customer satisfaction and market competitiveness can be achieved by investing in the knowledge and abilities of employees. Furthermore, highly educated research and development (R&D) staff are essential for developing novel, improved products, which are necessary for market expansion.

Additionally, structural capital, which includes effective processes and knowledge management systems, is crucial in identifying opportunities. Companies with simplified procedures and excellent knowledge management techniques are better able to discover new possibilities in the market. Therefore, managers ought to think about fostering a culture of continuous learning and knowledge sharing, as well as fostering a positive work environment and cross-functional collaboration. Additionally, it aids in building positive relationships with customers. Positive interactions with loyal consumers increase their propensity to provide insightful criticism that helps product designers make the required adjustments to satisfy

consumer demands. Therefore, intellectual capital, which consists of human, structural, and relational components, greatly improves SMEs' capacity to spot and grab opportunities. These insights may help managers capture consumer satisfaction and demands by helping them make well-informed choices, allocate resources wisely, and foster a culture of opportunity awareness inside their firms. The link between intellectual capital and opportunity recognition may be studied via longitudinal studies, cross-industry or cross-regional comparative assessments, and investigations into mediating and moderating variables.

References

Abbas, S. K., Hassan, H. A., Hashmi, Z. M., Junaid, H. M., Majid, S., & Ijaz, T. (2018). Intellectual capital impact on organizations' performance. *International Journal of Advanced Engineering, Management and Science (IJAEMS) Vol-4, Issue-7*.

Agarwal, A., Shankar, R., & Tiwari, M. K. (2006). Modeling the metrics of lean, agile and leagile supply chain: An ANP-based approach. *European journal of operational research*, *173*(1), 211-225.

Agndal, H., & Nilsson, U. (2006). Generation of human and structural capital: Lessons from knowledge management. *Electronic Journal of Knowledge Management*, *4*(2), 91-99.

Agostini, L., Nosella, A., & Filippini, R. (2017). Does intellectual capital allow improving innovation performance? A quantitative analysis in the SME context. *Journal of Intellectual Capital*.

Agyabeng-Mensah, Y., & Tang, L. (2021). The relationship among green human capital, green logistics practices, green competitiveness, social performance and financial performance. *Journal of Manufacturing Technology Management*, *32*(7), 1377-1398.

Ahangar, R. G. (2011). The relationship between intellectual capital and financial performance: An empirical investigation in an Iranian company. *African journal of business management*, *5*(1), 88.

Ahmadi, A. A., Ahmadi, A., & Shakeri, S. (2013). The survey of relationship between Intellectual capital (IC) and Organizational performance (OP) within the National Iranian South Oil Company International. *International Journal of Social Sciences and Entrepreneurship*, *1*(3), 46-56.

Akdemir, A., & Akpinar, A. T. (2003). *Intellectual Capital. Management Review*, 332-340.

Ali, M., Puah, C. H., Ali, A., Raza, S. A., & Ayob, N. (2022). Green intellectual capital, green HRM and green social identity toward sustainable environment: A new integrated framework for Islamic banks. International Journal of Manpower, 43(3), 614-638.

Al-Omoush, K. S., Palacios-Marques, D., & Ulrich, K. (2022). The impact of intellectual capital on supply chain agility and collaborative knowledge creation in responding to unprecedented pandemic crises. Technological Forecasting and Social Change, 178, 121603.

Alvarez, S. A., & Barney, J. B. (2007). Discovery and creation: Alternative theories of entrepreneurial action. *Strategic entrepreneurship journal*, *1*(1-2), 11-26.

Andersson, S., & Evers, N. (2015). International opportunity recognition in international new ventures—a dynamic managerial capabilities perspective. *Journal of International Entrepreneurship*, *13*(3), 260-276.

Andes, S. L., Nuzula, N. F., & Worokinasih, S. (2020). Competitive advantage as mediating factor for creating firm value: A literature review. *Bisnis & Birokrasi: Jurnal Ilmu Administrasi dan Organisasi*, *27*(1), 44-57.

Angelsberger, M., Kraus, S., Mas-Tur, A., & Roig-Tierno, N. (2017). International opportunity recognition: an overview. Journal of Small Business Strategy (archive only), 27(1), 19-36.

Antwi, S. K., & Hamza, K. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European journal of business and management*, *7*(3), 217-225.

Anwar ul Haq, M. A., Usman, M., & Hussain, N. (2014). Entrepreneurial activity in China and Pakistan: A GEM data evidence. *Journal of Entrepreneurship in Emerging Economies*.

Anwar, M., & Ali Shah, S. Z. (2020). Managerial networking and business model innovation: Empirical study of new ventures in an emerging economy. *Journal of Small Business & Entrepreneurship*, *32*(3), 265-286.

Ardichvili, A., Cardozo, R., & Ray, S. (2003). A theory of entrepreneurial opportunity identification and development. *Journal of Business venturing*, *18*(1), 105-123.

Arenius, P., & Clercq, D. D. (2005). A network-based approach on opportunity recognition. *Small business economics*, *24*(3), 249-265.

Audretsch, D. B. (2004). Sustaining innovation and growth: Public policy support for entrepreneurship. *Industry and innovation*, *11*(3), 167-191.

Audretsch, D. B. (2005). The knowledge spillover theory of entrepreneurship and economic growth. In *The emergence of entrepreneurial economics*. Emerald Group Publishing Limited.

Audretsch, D. B., Aldridge, T. T., & Sanders, M. (2011). Social capital building and new business formation: A case study in Silicon Valley. *International Small Business Journal*, *29*(2), 152-169.

Ausat, A. M. A., Widayani, A., Rachmawati, I., Latifah, N., & Suherlan, S. (2022). The Effect of Intellectual Capital and Innovative Work Behavior on Business Performance. *Journal of Economics, Business, & Accountancy Ventura*, *24*(3), 363-378.

Austin, Z., & Sutton, J. (2014). Qualitative research: Getting started. *The Canadian journal of hospital pharmacy*, *67*(6), 436.

Avella, J. R. (2016). Delphi panels: Research design, procedures, advantages, and challenges. *International Journal of Doctoral Studies*, *11*, 305.

Baima, G., Forliano, C., Santoro, G., & Vrontis, D. (2021). Intellectual capital and business model: a systematic literature review to explore their linkages. *Journal of Intellectual Capital*, *22*(3), 653-679.

Baron, R. A. (2004). OPPORTUNITY RECOGNITION: A COGNITIVE PERSPECTIVE. In *Academy of Management Proceedings* (Vol. 2004, No. 1, pp. A1-A6). Briarcliff Manor, NY 10510: Academy of Management.

Baron, R. A. (2006). Opportunity recognition as pattern recognition: How entrepreneurs "connect the dots" to identify new business opportunities. *Academy of management perspectives*, *20*(1), 104-119.

Baron, R. A. (2008). The role of affect in the entrepreneurial process. *Academy of management Review*, *33*(2), 328-340.

Baron, R. A., & Ensley, M. D. (2006). Opportunity recognition as the detection of meaningful patterns: Evidence from comparisons of novice and experienced entrepreneurs. *Management science*, *52*(9), 1331-1344.

Beck, T., Demirguc-Kunt, A., & Levine, R. (2005). SMEs, growth, and poverty: Cross-country evidence. *Journal of economic growth*, *10*(3), 199-229.

Beins, B. C. (2017). *Research method: A tool for life*. Cambridge University Press.

Belitski, M., & Liversage, B. (2019). E-Leadership in small and medium-sized enterprises in the developing world. *Technology Innovation Management Review*, *9*(1), 64-74.

Bell, E., Bryman, A., & Harley, B. (2022). *Business research methods*. Oxford university press.

Beltramino, N. S., García-Perez-de-Lema, D., & Valdez-Juárez, L. E. (2020). The structural capital, the innovation and the performance of the industrial SMES. *Journal of Intellectual Capital*, *21*(6), 913-945.

Benton, T. (2014). *Philosophical foundations of the three sociologies (RLE Social Theory)*. Routledge.

Bilal, M., Fatima, S., Ishtiaq, M., & Azeem, H. M. (2020). Factors affecting the choice of Islamic banking by SMEs in Pakistan: Implications for Islamic banks' corporate governance. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, *14*(1), 255-272.

Bjerke, B. (2007). Understanding Entrepreneurship. Cheltenham and Northampton, MA: Edward Elgar.

Blonska, A., Storey, C., Rozemeijer, F., Wetzels, M., & de Ruyter, K. (2013). Decomposing the effect of supplier development on relationship benefits: The role of relational capital. *Industrial Marketing Management*, *42*(8), 1295-1306.

Boadu, F., Xie, Y., Du, Y., & Dwomo-Fokuo, E. (2022). Management innovation and firm innovation performance: a moderated moderation effects of absorptive capacity and environmental dynamism. *Total Quality Management & Business Excellence*, *33*(13-14), 1588-1604.

Boarini, R., d'Ercole, M. M., & Liu, G. (2012). Approaches to measuring the stock of human capital: A review of country practices.

Bontempi, M. E., & Mairesse, J. (2015). Intangible capital and productivity at the firm level: a panel data assessment. *Economics of Innovation and New Technology*, *24*(1-2), 22-51.

Bontis, N. (2001). Assessing knowledge assets: a review of the models used to measure intellectual capital. *International journal of management reviews*, *3*(1), 41-60.

Bontis, N., & Serenko, A. (2007). The moderating role of human capital management practices on employee capabilities. *Journal of knowledge management*, *11*(3), 31-51.

Bontis, N., Keow, W. C. C., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of intellectual capital*.

Buenstorf, G. (2007). Creation and pursuit of entrepreneurial opportunities: An evolutionary economics perspective. *Small Business Economics*, *28*(4), 323-337.

Cannon, E. (2000). Human capital: level versus growth effects. *Oxford Economic Papers*, *52*(4), 670-676.

Carrell, J. (2007). Intellectual capital: an inquiry into its acceptance. *Business renaissance quarterly*, *2*(1), 67.

Chang, Y. Y., & Chen, M. H. (2020). Creative entrepreneurs' creativity, opportunity recognition, and career success: Is resource availability a double-edged sword?. European Management Journal, 38(5), 750-762.

Chen, S., & Wolfe Jr, C. (2001). *China, the United States, and the Global Economy*. RAND CORP SANTA MONICA CA.

Chen, T., Li, F., & Leung, K. (2016). When does supervisor support encourage innovative behavior? Opposite moderating effects of general self-efficacy and internal locus of control. *Personnel Psychology*, *69*(1), 123-158.

Chen, Y. S., James Lin, M. J., & Chang, C. H. (2006). The influence of intellectual capital on new product development performance–the manufacturing companies of Taiwan as an example. *Total Quality Management and Business Excellence*, *17*(10), 1323-1339.

Cheng, B. L., Gan, C. C., Imrie, B. C., & Mansori, S. (2018). Service recovery, customer satisfaction and customer loyalty: evidence from Malaysia's hotel industry. *International Journal of Quality and Service Sciences*, *11*(2), 187-203.

Cheng, C. C., & Krumwiede, D. (2017). What makes a manufacturing firm effective for service innovation? The role of intangible capital under strategic and environmental conditions. *International Journal of Production Economics*, *193*, 113-122.

Chogozie, P., & Emmanuel, O. (2018). Effect of human capital development in organizational performance in manufacturing industries in South-East Nigeria. *International Journal of Academic Research in Economics and Management Sciences*, *7*(3), 60-78.

Choudhury, J., & Mishra, B. B. (2010). Theoretical and empirical investigation of impact of developmental HR configuration on human capital management. *International Business Research*, *3*(4), 181.

Ciric, D., Lalic, B., Gracanin, D., Palcic, I., & Zivlak, N. (2018). Agile project management in new product development and innovation processes: challenges and benefits beyond software domain. In *2018 IEEE International Symposium on Innovation and Entrepreneurship (TEMS-ISIE)* (pp. 1-9). IEEE.

Clements, E., Stephan, U., Miozzo, M., Hellyer, P., Devonshire, J., Allesch-Taylor, S., ... & Giampietro, V. (2021). Cognitive Neuroscience and Entrepreneurship: cross-disciplinary review and future potential.

Collins, C. J. (2021). Expanding the resource based view model of strategic human resource management. *The International Journal of Human Resource Management*, *32*(2), 331-358.

Concerne, E. N., & FR, D. (2020). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.

Corbett, A. C. (2007). Learning asymmetries and the discovery of entrepreneurial opportunities. *Journal of business venturing*, *22*(1), 97-118.

Costa, S. F., Santos, S. C., Wach, D., & Caetano, A. (2018). Recognizing opportunities across campus: The effects of cognitive training and entrepreneurial passion on the business opportunity prototype. Journal of Small Business Management, 56(1), 51-75.

Cunningham, L. X., & Rowley, C. (2007). Human resource management in Chinese small and medium enterprises: A review and research agenda. *Personnel review*, *36*(3), 415-439.

Dalati, S., & Marx Gómez, J. (2018). Surveys and questionnaires. *Modernizing the Academic Teaching and Research Environment: Methodologies and Cases in Business Research*, 175-186.

Dalitso, K., & Peter, Q. (2000). The policy environment for promoting small and medium-sized enterprises in Ghana and Malawi. *University of Manchester*, *1*(15), 1-23.

Danaei, H., & Normohammadi, M. (2013). An empirical study on relationship between intellectual capital and organizational entrepreneurship: A case study of Islamic Azad university of Semnan. *Management Science Letters*, *3*(5), 1339-1344.

Dar, M. S., Ahmed, S., & Raziq, A. (2017). Small and medium-size enterprises in Pakistan: Definition and critical issues. *Pakistan Business Review*, *19*(1), 46-70.

Davidsson, P. (2022). McBride and Wuebker's Socially Objective Opportunities: Do they move the field forward?. Journal of Business Venturing Insights, 18, e00343.

Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of business venturing*, *18*(3), 301-331.

De Carvalho, R. B., & Ferreira, M. A. T. (2001). Using information technology to support knowledge conversion processes. *Information research*, *7*(1), 7-1.

De Witte, N. A., Adriaensen, I., Broeckx, L., Van Der Auwera, V., & Van Daele, T. (2021). Cross-cultural differences in user-centred research: an international living lab survey. *Health Informatics Journal*, *27*(3), 14604582211038268.

Debicki, B. J., Ramírez-Solís, E. R., Baños-Monroy, V. I., & Gutiérrez-Patrón, L. M. (2020). The impact of strategic focus on relational capital: A comparative study of family and non-family firms. *Journal of Business Research*, *119*, 585-598.

Diez, J. M., Ochoa, M. L., Prieto, M. B., & Santidrian, A. (2010). Intellectual capital and value creation in Spanish firms. *Journal of intellectual capital*.

Donate, M. J., Peña, I., & Sánchez de Pablo, J. D. (2016). HRM practices for human and social capital development: effects on innovation capabilities. *The International Journal of Human Resource Management*, *27*(9), 928-953.

Douhan, R., & Henrekson, M. (2010). Entrepreneurship and second-best institutions: going beyond Baumol's typology. *Journal of Evolutionary Economics*, *20*, 629-643.

Dwork, C., Kohli, N., & Mulligan, D. (2019). Differential privacy in practice: Expose your epsilons!. *Journal of Privacy and Confidentiality*, *9*(2).

Dyer, J. H., Gregersen, H. B., & Christensen, C. M. (2009). The innovator's DNA. Harvard business review, 87(12), 60-67.

Dženopoljac, V., Janoševic, S., & Bontis, N. (2016). Intellectual capital and financial performance in the Serbian ICT industry. *Journal of Intellectual Capital*.

Edvinsson, L., Mas, F. D., Pablos, P. O. D., Massaro, M., & Dumay, J. (2022). From a value-based knowledge economy to a worth economy. New reflections and perspectives on intellectual capital research. International Journal of Learning and Intellectual Capital, 19(1), 83-101.

Elsetouhi, A., Elbeltagi, I., & Haddoud, M. Y. (2015). Intellectual capital and innovations: is organisational capital a missing link in the service sector?. *International Journal of Innovation Management*, *19*(02), 1550020.

Fayyaz, A., Mian, S. A., & Khan, J. H. (2009). State of entrepreneurship and globalisation in Pakistan. *International Journal of Business and Globalisation*, *3*(3), 271-287.

Feja, B. (2017). The Opportunity Recognition Process of Discoveries and Social Creations in Entrepreneurial Teams A Structurationist Approach to the Opportunity Recognition Process.

Filser, M., Tiberius, V., Kraus, S., Zeitlhofer, T., Kailer, N., & Müller, A. (2020). Opportunity recognition: Conversational foundations and pathways ahead. Entrepreneurship Research Journal, 13(1), 1-30.

Fletcher, L., Bailey, C., Alfes, K., & Madden, A. (2020). Mind the context gap: a critical review of engagement within the public sector and an agenda for future research. *The International Journal of Human Resource Management*, *31*(1), 6-46.

Florin, J., & Schultze, W. (2000). Social capital and fundability of high potential new ventures. In *Academy of Management Meetings, Toronto, August* (Vol. 95, pp. 374-384).

Foss, N. J., Lyngsie, J., & Zahra, S. A. (2013). The role of external knowledge sources and organizational design in the process of opportunity exploitation. *Strategic Management Journal*, *34*(12), 1453-1471.

Furr, M. (2011). Scale construction and psychometrics for social and personality psychology. *Scale Construction and Psychometrics for Social and Personality Psychology*, 1-160.

Gaglio, C. M., & Winter, S. (2017). Entrepreneurial alertness and opportunity identification: where are we now?. Revisiting the Entrepreneurial Mind: Inside the Black Box: An Expanded Edition, 339-358.

Gao, G. Y., Xie, E., & Zhou, K. Z. (2015). How does technological diversity in supplier network drive buyer innovation? Relational process and contingencies. Journal of Operations Management, 36, 165-177.

Gârdan, D. A., Andronie, M., Gârdan, I. P., Andronie, I. E., Iatagan, M., & Hurloiu, I. (2018). Bioeconomy development and using of intellectual capital for the creation of competitive advantages by SMEs in the field of biotechnology. *Amfiteatru Economic*, *20*(49), 647-666.

Gielnik, M. M., Frese, M., Graf, J. M., & Kampschulte, A. (2012). Creativity in the opportunity identification process and the moderating effect of diversity of information. *Journal of Business Venturing*, *27*(5), 559-576.

Grajkowska, A. (2011). Valuing intellectual capital of innovative start-ups. *Journal of intellectual capital*.

Gravili, G., Manta, F., Cristofaro, C. L., Reina, R., & Toma, P. (2021). Value that matters: intellectual capital and big data to assess performance in healthcare. An empirical analysis on the European context. Journal of Intellectual Capital, 22(2), 260-289.

Hajizadeh, A., & Zali, M. (2016). Prior knowledge, cognitive characteristics and opportunity recognition. International Journal of Entrepreneurial Behavior & Research, 22(1), 63-83.

Hameed, A. A., & Anwar, K. (2018). Analyzing the relationship between intellectual capital and organizational performance: A study of selected private banks in Kurdistan. International Journal of Social Sciences & Educational Studies, 4(4), 39.

Haris, M., Yao, H., Tariq, G., Malik, A., & Javaid, H. M. (2019). Intellectual capital performance and profitability of banks: Evidence from Pakistan. *Journal of Risk and Financial Management*, *12*(2), 56.

Hartmann, E., & Herb, S. (2014). Opportunism risk in service triads–a social capital perspective. International Journal of Physical Distribution & Logistics Management, 44(3), 242-256.

Hasan, N., Rana, R. U., Chowdhury, S., Dola, A. J., & Rony, M. K. K. (2021). Ethical considerations in research. *Journal of Nursing Research, Patient Safety and Practise (JNRPSP) 2799-1210*, *1*(01), 1-4.

Haynie, J. M., Shepherd, D. A., & McMullen, J. S. (2009). An opportunity for me? The role of resources in opportunity evaluation decisions. *Journal of Management studies*, *46*(3), 337-361.

Henry, C. (2015). Doing well by doing good: Opportunity recognition and the social enterprise partnership. *Journal of social entrepreneurship*, *6*(2), 137-160.

Herman, E. (2012). SMEs and their Effect on the Romanian Employment. *Procedia Economics and Finance*, *3*, 290-297.

Hongyun, T., Kankam, W. A., Appiah-Twum, F., & Akolgo, I. G. (2019). Effect of social capital on firm performance: The role of entrepreneurial orientation and dynamic capability. *International Review of Management and Marketing*, *9*(4), 63.

Hormiga, E., Batista-Canino, R. M., & Sánchez-Medina, A. (2011). The role of intellectual capital in the success of new ventures. *International entrepreneurship and management journal*, *7*(1), 71-92.

Hsieh, C., Nickerson, J. A., & Zenger, T. R. (2007). Opportunity discovery, problem solving and a theory of the entrepreneurial firm. *Journal of Management Studies*, *44*(7), 1255-1277.

Hussain, J., Khan, A., & Shah, F. A. (2015). The Impacts of Entrepreneurial Orientation on Organizational Performance: Study of Pakistani SMEs. *Sarhad Journal of Management Sciences*, *1*(01), 52-64.

Hussinki, H., Kianto, A., Vanhala, M., & Ritala, P. (2019). Happy employees make happy customers: The role of intellectual capital in supporting sustainable value creation in organizations. Intellectual Capital Management as a Driver of Sustainability: Perspectives for Organizations and Society, 101-117.

Hyder, S., & Lussier, R. N. (2016). Why businesses succeed or fail: a study on small businesses in Pakistan. *Journal of Entrepreneurship in Emerging Economies*.

Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance? The role of nation-level institutions. *Journal of international business studies*, *43*, 834-864.

Iqbal, A., Latif, F., Marimon, F., Sahibzada, U. F., & Hussain, S. (2018). From knowledge management to organizational performance: Modelling the mediating role of innovation and intellectual capital in higher education. *Journal of Enterprise Information Management*, *32*(1), 36-59.

Isola, W. A., Odekunle, L. A., & Akanni, L. O. (2017). Intellectual Capital and Firm Performance: A Review of Empirical Literature Based On VAIC™ Model. *Unilag Journal of Humanities*, *5*(1), 49-65.

Jabłoński, A., & Kożuch, B. (Eds.). (2019). Trust Management: Key Factor of the Sustainable Organizations Embedded in Network. MDPI.

Jain, P., Vyas, V., & Roy, A. (2017). Exploring the mediating role of intellectual capital and competitive advantage on the relation between CSR and financial performance in SMEs. *Social Responsibility Journal*, *13*(1), 1-23.

Jiang, X., Liu, H., Fey, C., & Jiang, F. (2018). Entrepreneurial orientation, network resource acquisition, and firm performance: A network approach. *Journal of Business Research*, *87*, 46-57.

Johnston, K. A., & Lane, A. B. (2018). Building relational capital: The contribution of episodic and relational community engagement. Public Relations Review, 44(5), 633-644.

Kałkowska J., Trzcieliński S. (2007), Concurrent engineering as a method of quick response to market opportunities, in: Agile Enterprise, Concepts and some results of research, ed. S. Trzcieliński, Poznań, Poznan University of Technology.

Kang, J. H., Solomon, G. T., & Choi, D. Y. (2015). CEOs' leadership styles and managers' innovative behavior: Investigation of intervening effects in an entrepreneurial context. *Journal of Management studies*, *52*(4), 531-554.

Kathpalia, A., & Nagaraj, N. (2021). Measuring causality: The science of cause and effect. *Resonance*, *26*, 191-210.

Khaliq, C. A., Rehman, M., Alam, H. M., Amin, M., & Aslam, N. (2016). Intellectual Capital and Organizational Performance: Mediating Role of Entrepreneurial Orientation in SMEs Sector of Pakistan.

Khalique, M., Bontis, N., Bin Shaari, J. A. N., & Isa, A. H. M. (2015). Intellectual capital in small and medium enterprises in Pakistan. *Journal of intellectual capital*.

Khalique, M., Bontis, N., JAN, B. S., Yaacob, M. R., & Ngah, R. (2018). Intellectual capital and organisational performance in Malaysian knowledge-intensive SMEs. *International Journal of Learning and Intellectual Capital*.

Khalique, M., Hina, K., Ramayah, T., & bin Shaari, J. A. N. (2020). Intellectual capital in tourism SMEs in Azad Jammu and Kashmir, Pakistan. *Journal of Intellectual Capital*.

Khalique, M., Nassir Shaari, J. A., Isa, A. H. B. M., & Ageel, A. (2011). Relationship of intellectual capital with the organizational performance of pharmaceutical companies in Pakistan. *Australian Journal of Basic and Applied Sciences*, *5*(12), 1964-1969.

Khan, A. M., Arafat, M. Y., Raushan, M. A., Khan, M. S., Dwivedi, A. K., Khan, M. M., & Saleem, I. (2019). Role of intellectual capital in augmenting the start-up intentions of Indians—an analysis using GEM data. *Journal of Global Entrepreneurship Research*, *9*(1), 1-14.

Khan, M. W. J., & Khalique, M. (2014). An overview of small and medium enterprises in Malaysia and Pakistan: past, present and future scenario. *Business and Management Horizons*, *2*(2), 38-49.

Khan, S. Z., Yang, Q., & Waheed, A. (2019). Investment in intangible resources and capabilities spurs sustainable competitive advantage and firm performance. *Corporate Social Responsibility and Environmental Management*, *26*(2), 285-295.

Kharub, M., Mor, R. S., & Rana, S. (2022). Mediating role of manufacturing strategy in the competitive strategy and firm performance: evidence from SMEs. *Benchmarking: An International Journal*, *29*(10), 3275-3301.

Kim, J. Y., Choi, D. S., Sung, C. S., & Park, J. Y. (2018). The role of problem solving ability on innovative behavior and opportunity recognition in university students. Journal of Open Innovation: Technology, Market, and Complexity, 4(1), 4.

Kim, J., Melton, R., Min, J. E., & Kim, B. Y. (2020). Who says what?: exploring the impacts of content type and blog type on brand credibility, brand similarity and eWOM intention. *Journal of Fashion Marketing and Management: An International Journal*, *24*(4), 611-630.

Kim, Y., & Ployhart, R. E. (2014). The effects of staffing and training on firm productivity and profit growth before, during, and after the Great Recession. Journal of Applied Psychology, 99(3), 361.

Kiprotich, S., Kimosop, J., Chepkwony, P. K., & Kemboi, A. (2015). Moderating effect of social networking on the relationship between entrepreneurial orientation and performance of small and medium enterprise in Nakuru County, Kenya.

Kirzner I.M. (1973). *Competition and entrepreneurship*. Chicago, IL: The University of Chicago Press.

Kirzner, I. M. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of economic Literature*, *35*(1), 60-85.

Klepper, S., & Sleeper, S. (2001). Entry by spinoffs: Working Paper.

Ko, S., & Butler, J. E. (2006). Prior knowledge, bisociative mode of thinking and entrepreneurial opportunity identification. *International Journal of Entrepreneurship and Small Business*, *3*(1), 3-16.

Koczerga, M. (2014). Motywacja przedsiębiorcza a identyfikacja okazji. Problemy Zarządzania, 12(3), 47.

Kong, E., & Prior, D. (2008). An intellectual capital perspective of competitive advantage in nonprofit organisations. *International Journal of Nonprofit and Voluntary Sector Marketing*, *13*(2), 119-128.

Kong, G., & Kong, D. (2017). Corporate governance, human capital, and productivity: evidence from Chinese non-listed firms. *Applied Economics*, *49*(27), 2655-2668.

Korsgaard, S. (2013). It's really out there: a review of the critique of the discovery view of opportunities. International Journal of Entrepreneurial Behavior & Research, 19(2), 130-148.

Kraja, Y. B. (2018). The impact of tangible and intangible assets on the SMEs' success: the Albanian case. *Entrepreneurship in Post-Communist Countries: New Drivers Towards a Market Economy*, 135-145.

Kuckertz, A., Kollmann, T., Krell, P., & Stöckmann, C. (2017). Understanding, differentiating, and measuring opportunity recognition and opportunity exploitation. *International Journal of Entrepreneurial Behavior & Research*.

Kureshi, N. I., Mann, R., Khan, M. R., & Qureshi, M. F. (2009). Quality management practices of SME in developing countries: a survey of manufacturing SME in Pakistan. *Journal of Quality and Technology Management*, *5*(2), 63-89.

Kweh, Q. L., Lu, W. M., & Wang, W. K. (2014). Dynamic efficiency: intellectual capital in the Chinese non-life insurance firms. *Journal of Knowledge Management*, *18*(5), 937-951.

Kwon, S. W., & Arenius, P. (2010). Nations of entrepreneurs: A social capital perspective. Journal of Business Venturing, 25(3), 315-330.

Lanivich, S. E., Smith, A., Levasseur, L., Pidduck, R. J., Busenitz, L., & Tang, J. (2022). Advancing entrepreneurial alertness: Review, synthesis, and future research directions. *Journal of Business Research*, *139*, 1165-1176.

Leal-Millán, A., Roldán, J. L., Leal-Rodríguez, A. L., & Ortega-Gutiérrez, J. (2016). IT and relationship learning in networks as drivers of green innovation and customer capital: Evidence from the automobile sector. *Journal of Knowledge Management*, *20*(3), 444-464.

Lee, C. H., & Ha, B. C. (2018). The impact of buyer-supplier relationships' social capital on bi-directional information sharing in the supply chain. Journal of Business & Industrial Marketing, 33(3), 325-336.

Levitt, H. M., Morrill, Z., Collins, K. M., & Rizo, J. L. (2021). The methodological integrity of critical qualitative research: Principles to support design and research review. *Journal of Counseling Psychology*, *68*(3), 357.

Lewin, P. (2015). Entrepreneurial opportunity as the potential to create value. *The Review of Austrian Economics*, *28*, 1-15.

Li, G., Luo, Z., Anwar, M., Lu, Y., Wang, X., & Liu, X. (2020). Intellectual capital and the efficiency of SMEs in the transition economy China; Do financial resources strengthen the routes?. *PloS one*, *15*(7), e0235462.

Lim, W. L., & Xavier, S. R. (2015). Opportunity recognition framework: Exploring the technology entrepreneurs. *American Journal of economics*, *5*(2), 105-111.

Lin, P. Y., MacLennan, S., Hunt, N., & Cox, T. (2015). The influences of nursing transformational leadership style on the quality of nurses' working lives in Taiwan: a cross-sectional quantitative study. *BMC nursing*, *14*(1), 1-9.

Liu, C. H. (2017). The relationships among intellectual capital, social capital, and performance-The moderating role of business ties and environmental uncertainty. *Tourism Management*, *61*, 553-561.

Liu, C. L. E., Ghauri, P. N., & Sinkovics, R. R. (2010). Understanding the impact of relational capital and organizational learning on alliance outcomes. *Journal of World Business*, *45*(3), 237-249.

Liu, J., Qu, H., Huang, D., Chen, G., Yue, X., Zhao, X., & Liang, Z. (2014). The role of social capital in encouraging residents' pro-environmental behaviors in community-based ecotourism. Tourism Management, 41, 190-201.

Lumpkin, G. T., Hills, G. E., & Shrader, R. C. (2004). Opportunity recognition. *Entrepreneurship: The way ahead*, 73-90.

Mahmood, K. (2015). Impact of human capital on organizational performance a case of security forces. Pakistan Journal of Science, 67(1).

Mashenene, R. G., & Rumanyika, J. (2014). Business constraints and potential growth of small and medium enterprises in Tanzania: A review.

McCaffrey, M., Foss, N. J., Klein, P. G., & Salerno, J. T. (2021). Breaking out of the Kirznerian box: A reply to Sautet. *The Review of Austrian Economics*, 1-21.

McGrath, R., & Sparks, W. (2006). Knowledge. *Social Capital and Organizational Learning. The International Journal of Knowledge, Culture, & Change Management*, *5*(9), 125-129.

McLafferty, S. (2016). Conducting questionnaire surveys. *Key methods in geography*, *3*, 129-142.

Memon, S. B., Chandan, L., & Rohra, P. L. (2005). 2010. Critical Analysis of the Performance Management System (Pms) in SMEs of Karachi. In *Australian Journal of Basic and Applied Sciences*.

Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People*, *9*(4), 50-79.

Mohammad, N. A. B., Ansari, M., Ologbo, A. C., & Rezaei, G. (2013). Investigating the Effect of Intellectual Capital on Organizational Performance and Mediating Role of Entrepreneurial Orientation. *International Review of Business Research Papers,* 9(3), 99-113.

Moradi, M., Sheybani, A., Moheb Seraj, A. H., & Hosseini Sadr, Z. S. (2013). A Study on the relationship between human development and intellectual and human capital in banking industry. *European Online Journal of Natural and Social Sciences: Proceedings*, *2*(3 (s)), pp-1012.

Morrison, A. (2003). SME management and leadership development: market reorientation. *Journal of Management Development*.

Nejadirani, F., Namvar, F. G., Rasouli, R., & Yadegari, L. M. (2012). Examining the Effects of Intellectual Capitals Management on Organizational Performance: The Case Study. *Research Journal of Applied Sciences, Engineering and Technology*, *4*(9), 1040-1050.

Onkelinx, J., Manolova, T. S., & Edelman, L. F. (2016). The human factor: Investments in employee human capital, productivity, and SME internationalization. *Journal of International Management*, *22*(4), 351-364.

Pattanayak, J. K. (2019). Does investing in intellectual capital improve productivity? Panel evidence from commercial banks in India. *Borsa Istanbul Review*, *19*(3), 219-227.

Osotimehin, K. O., Jegede, C. A., Akinlabi, B. H., & Olajide, O. T. (2012). An evaluation of the challenges and prospects of micro and small scale enterprises development in Nigeria. *American international journal of contemporary research*, *2*(4), 174-185.

Pakistan Economic Survey 2020 [Internet]. Ministry of Finance, Government of Pakistan. Available from: https://www.finance.gov.pk/survey_2021.html

Pakistan Today. (2018). SBP to increase financial assistance for SMEs. Retrieved from https://profit.pakistantoday.com.pk/2018/08/27/sbp-to-increase-financial-assistancefor-smes/

Park, J. G., Kim, J. S., Yoon, S. W., & Joo, B. K. (2018). The effects of empowering leadership on psychological well-being and job engagement: The mediating role of psychological capital. *Leadership & Organization Development Journal*.

Park, Y. S., Konge, L., & Artino, A. R. (2020). The positivism paradigm of research. *Academic medicine*, *95*(5), 690-694.

Phene, A., Tallman, S., & Almeida, P. (2012). When do acquisitions facilitate technological exploration and exploitation?. Journal of Management, 38(3), 753-783.

Portyanko, S., Reinmoeller, P., Hussels, S., & Turner, N. (2022). Peer effects and intentional entrepreneurial behaviour: A systematic literature review and research agenda. *International Journal of Management Reviews*.

Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences*, *6*(2), 1-5.

Rahman, M. M., Tabash, M. I., Salamzadeh, A., Abduli, S., & Rahaman, M. S. (2022). Sampling techniques (probability) for quantitative social science researchers: a conceptual guidelines with examples. *Seeu Review*, *17*(1), 42-51.

Rajasekaran, A., Prakash, A., Hatch, S., Lu, Y., Cutter, G. R., & Zarjou, A. (2022). Advocating for in-center hemodialysis patients via anonymous survey. *Medicine*, *101*(41).

Rao, P. S. (2014). Problems Affecting the Growth of Small and Medium Enterprises (SMEs) in Chittoor District of Rayalaseema Region, Andhra Pradesh. *Journal of Entrepreneurship and Management*, *3*(2).

Ratten, V. (2014). Future research directions for collective entrepreneurship in developing countries: a small and medium-sized enterprise perspective. *International Journal of Entrepreneurship and Small Business*, *22*(2), 266-274.

Razzaque, A. (2019). Organizational learning through Knowledge sharing in virtual communities thru learner readiness and their social capital. In Handbook of Research on Implementing Knowledge Management Strategy in the Public Sector (pp. 159-177). IGI Global.

Regmi, P. R., Waithaka, E., Paudyal, A., Simkhada, P., & Van Teijlingen, E. (2016). Guide to the design and application of online questionnaire surveys. *Nepal journal of epidemiology*, *6*(4), 640.

Robinson, J. (2006). Navigating social and institutional barriers to markets: How social entrepreneurs identify and evaluate opportunities. *Social entrepreneurship*, 95-120.

Rogošić, S., & Baranović, B. (2016). Social capital and educational achievements: Coleman vs. Bourdieu. Center for Educational Policy Studies Journal, 6(2), 81-100.

Ryu, D., Baek, K. H., & Yoon, J. (2021). Open innovation with relational capital, technological innovation capital, and international performance in SMEs. *Sustainability*, *13*(6), 3418.

Saganenko, G., Geger, A., Boyarsky, K., Dudina, V., & Stepanova, E. (2019). Research technology based on open-ended questions: the key modules, contribution of software DISCANT. In *Conference of Open Innovations Association, FRUCT* (No. 25, pp. 552-558). FRUCT Oy.

Saleem, S. (2008). SMEDA SME Policy paper 2007-A Critical Review (An analytical commentary upon SME policy proposed by SMEDA Pakistan).

SBA-Small Business Administration, US. (2014). Website access on 09/02/2015,

Seleim, A., Ashour, A., & Bontis, N. (2007). Human capital and organizational performance: a study of Egyptian software companies. *Management Decision*.

Seth, T. (2014). Essays on the role of competitor-specific human capital on initial public offerings (IPOs) performance. Wayne State University.

Shah, D. S., & Syed, A. (2018). Framework for SME sector development in Pakistan. *Islamabad: Planning Commission of Pakistan*, *1*, 21-23.

Shane, S. (2000). Prior knowledge and the discovery of entrepreneurial opportunities. *Organization science*, *11*(4), 448-469.

Shane, S. A. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Edward Elgar Publishing.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. Academy of management review, 25(1), 217-226.

Shane, S., Nicolaou, N., Cherkas, L., & Spector, T. D. (2010). Do openness to experience and recognizing opportunities have the same genetic source?. *Human Resource Management:*

Published in Cooperation with the School of Business Administration, The University of Michigan and in alliance with the Society of Human Resources Management, *49*(2), 291-303.

Sima, V., Gheorghe, I. G., Subić, J., & Nancu, D. (2020). Influences of the industry 4.0 revolution on the human capital development and consumer behavior: A systematic review. *Sustainability*, *12*(10), 4035.

Singh, H. R., & Rahman, H. (2013). Traits of successful entrepreneurs. *International journal of scientific research*, *2*(11), 292-294.

Smriti, N., & Das, N. (2018). The impact of intellectual capital on firm performance: a study of Indian firms listed in COSPI. *Journal of Intellectual Capital*, *19*(5), 935-964.

Stam, C. D. (2005). Intellectual productivity: measuring and improving productivity in the intangible economy. *International Journal of Learning and Intellectual Capital*, *2*(2), 128-146.

Suri, H. (2020). Ethical considerations of conducting systematic reviews in educational research. *Systematic reviews in educational research: Methodology, perspectives and application*, 41-54.

Syeddah, A. F. (2017). A dialectical discourse on Responsible Business Behaviour within Small Medium Enterprises: A Case Study of Pakistan (Doctoral dissertation, University of Plymouth).

Tang, J., Kacmar, K. M. M., & Busenitz, L. (2012). Entrepreneurial alertness in the pursuit of new opportunities. *Journal of business venturing*, *27*(1), 77-94.

Tang, J., Kacmar, K. M. M., & Busenitz, L. (2012). Entrepreneurial alertness in the pursuit of new opportunities. *Journal of business venturing*, *27*(1), 77-94.

Tang, Z., Hull, C. E., & Rothenberg, S. (2012). How corporate social responsibility engagement strategy moderates the CSR–financial performance relationship. *Journal of management Studies*, *49*(7), 1274-1303.

Topal, Y., Conkar, K., & Uc, M. (2013, June). The Constitution And Measurement Of Intellectual Capital: An Aplication In The Banking Sector In Afyonkarahisar. In First International Conference on Management and Economics.

Trzcieliński, S. (2007). Agile enterprise. Poznan University of Technology Publishing House, Poznan.

Trzcielinski, S. (2009). Agile enterprise–An innovative organization. *Innovációmenedzsment konferencia kötet*.

Trzcielinski, S. (2018). Prior knowledge and opportunity recognition. In *International Conference on Applied Human Factors and Ergonomics* (pp. 191-200). Springer, Cham.

Trzcielinski, S. (2019). Prior knowledge and opportunity recognition. *In Advances in Manufacturing, Production Management and Process Control: Joint proceedings of the AHFE 2018 International Conference on Advanced Production Management and Process Control, the AHFE International Conference on Human Aspects of Advanced Manufacturing, and the AHFE International Conference on Additive Manufacturing, Modeling Systems and 3D Prototyping, July 21-25, 2018, Loews Sapphire Falls Resort at Universal Studios, Orlando, Florida, USA 9* (pp. 191-200). Springer International Publishing.

Trzcieliński, S., & Trzcielińska, J. (2011). Some elements of theory of opportunities. *Human Factors and Ergonomics in Manufacturing & Service Industries*, *21*(2), 124-131.

Trzcielinski, S., Trzcielinska, J., Pawlowski, E., & Pawlowski, K. (2018). Methodology of shaping the agility of the intelligent autonomous environment management system. In *International Conference on Human Systems Engineering and Design: Future Trends and Applications* (pp. 652-658). Springer, Cham.

Tsang, E. W. (2014). Generalizing from research findings: The merits of case studies. *International Journal of Management Reviews*, *16*(4), 369-383.

Turner, M., Sermcheep, S., Anantasirijkiat, S., & Srisangnam, P. (2016). Small and medium-sized enterprises in Thailand: government policy and economic development. *Asia Pacific Journal of Public Administration*, *38*(4), 251-269.

Umair, M., Chalabianloo, N., Sas, C., & Ersoy, C. (2021). HRV and stress: A mixed-methods approach for comparison of wearable heart rate sensors for biofeedback. *IEEE Access*, *9*, 14005-14024.

Vadi, M., Reino, A., & Aidla, A. (2019). The relationship between intangible assets and firm productivity–still myth or is there new evidence?. *International Journal of Manpower*, *40*(6), 1030-1035.

Vahlne, J. E., & Bhatti, W. A. (2019). Relationship development: A micro-foundation for the internationalization process of the multinational business enterprise. Management International Review, 59, 203-228.

Veilleux, S., Haskell, N., & Béliveau, D. (2018). Opportunity recognition by international high technology start-up and growth photonics firms.

Venkataraman, S. (2019). The distinctive domain of entrepreneurship research. In *Seminal ideas for the next twenty-five years of advances*. Emerald Publishing Limited.

Vovk, M. (2015). Key role of human capital in management of international competitiveness of a firm. Економічний простір, (100), 5-12.

Wiklund, J., Patzelt, H., & Shepherd, D. A. (2009). Building an integrative model of small business growth. *Small business economics*, *32*, 351-374.

Williams, A. (2003). How to… Write and analyse a questionnaire. *Journal of orthodontics*, *30*(3), 245-252.

Wlodarkiewicz-Klimek, H., Kalkowska, J., Trzcielinski, S., & Pawlowski, E. (2014). External Conditions of Enterprise Development in a Knowledge-Based Economy. *In Human Factors of a Global Society (pp. 652-661). CRC Press*.

World Bank Report (2020). Accessible from https://documents1.worldbank.org/curated/en/688761571934946384/pdf/Doing-Business-2020-Comparing-Business-Regulation-in-190-Economies.pdf

World Bank. (2002). *World Bank Development Indicators, 2002. Washington: The International Bank for Reconstruction and Development.*

Wu, J., Guo, S., Huang, H., Liu, W., & Xiang, Y. (2018). Information and communications technologies for sustainable development goals: state-of-the-art, needs and perspectives. *IEEE Communications Surveys & Tutorials*, *20*(3), 2389-2406.

Xu, A., Baysari, M. T., Stocker, S. L., Leow, L. J., Day, R. O., & Carland, J. E. (2020). Researchers' views on, and experiences with, the requirement to obtain informed consent in research involving human participants: a qualitative study. *BMC medical ethics*, *21*(1), 1-11.

Yong, J. Y., Yusliza, M. Y., Ramayah, T., Farooq, K., & Tanveer, M. I. (2022). Accentuating the interconnection between green intellectual capital, green human resource management and sustainability. Benchmarking: An International Journal.

Zafar, A., & Mustafa, S. (2017). SMEs and its role in economic and socio-economic development of Pakistan. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *6*(4).

Zahra, S. A., Wright, M., & Abdelgawad, S. G. (2014). Contextualization and the advancement of entrepreneurship research. *International small business journal*, *32*(5), 479-500.

Zeeni, N., Doumit, R., Abi Kharma, J., & Sanchez-Ruiz, M. J. (2018). Media, technology use, and attitudes: Associations with physical and mental well-being in youth with implications for evidence-based practice. *Worldviews on Evidence-Based Nursing*, *15*(4), 304-312.

Zhang, W., Zhao, W., Gao, Y., & Xiao, Z. (2021). How do managerial ties influence the effectuation and causation of entrepreneurship in China? The role of entrepreneurs' cognitive bias. In *Corporate Performance and Managerial Ties in China* (pp. 85-113). Routledge.

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Appendix 1.

(Questionnaire)

Section I: Metrix – Firm identification

A. How big is the size of your company/shop?
   a) Less than 10 employees
   b) 10 - 49 employees
   c) 50 - 249 employees
   d) More than 250 employees

B. What kind of business is you firm involved in? (Multiple choice)
   a) Merchandise
   b) Services
   c) Manufacturing
   d) Agriculture
   e) Medical
   f) Other

C. The annual turnover is [USD]:
   a) Up to 250.000
   b) Up to 500.000
   c) Up to 1.000.000
   d) Up to 2.000.000
   e) Up to 5.000.000
   f) Up to 10.000.000
   g) Up to 20.000.000
   h) Up to 50.000.000
   i) Over 50.000.000

D. The age of your firm is:
   a) Up to 2 years
   b) Up to 7 years
   c) Up to 10 years
   d) Up to 20 years
   e) More than 20 years

E. What is the customer base of your company in which you operate?
   a) Only in local town
   b) District level (e.g. ….)
   c) State level (e.g. …)
   d) Country level (All over Pakistan)
   e) International (Ex. Asia, Africa, Europe, America etc.)

Key: 1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

Section II: Intellectual capital

H1.
1. Our company is innovative thanks to the knowledge and experience of our employees
2. The basis for the development of our company is investment in the knowledge and skills of our employees
3. We employ only staff with high skills
4. Our R&D employees are very well educated
5. Our operational employees have very good work experience

H2.
1. The relationship between management and employees in our company is friendly
2. Our employees have a high degree of decision-making autonomy (empowerment)
3. Our management and operational processes ensure the delivery of products of the highest quality and within deadlines agreed with customers
4. Our company is focused on processes that are key to customer value
5. Our company owns numerous protected commercial rights (patents, copyrights, trademarks)

H3.
1. Our customers are very loyal to our company
2. Our company has a wide network of partners with whom it maintains regular cooperation
3. Our company has a wide but variable network of partners, which it selects for individual projects
4. Our company is secure due to our good relations with regional and local authorities
5. We cooperate intensively with R&D centres and scientific institutes when launching new products on the market.

Section III: Symptoms of opportunities

1. The company monitors and scans changes in the macroenvironment (political, legal, economic, technological):
   1) We do not monitor and scan the macroenvironment
   2) We do not very systematically
   3) We do in moderately systematic way
   4) We do in systematic way
   5) We do in very systematic way

2. The company monitors and scans changes in the industry environment (customers, suppliers, competitors):
   1) We do not monitor and scan the industry environment
   2) We do not very systematically
   3) We do in moderately systematic way

4) We do in systematic way
5) We do in very systematic way

3. Cooperation with suppliers and subcontractors allows us to offer the customers
1) Single line of products
2) Very narrow range of products
3) Narrow range of products
4) Wide range of products
5) Very wide range of products

4. As a result of our company innovations we introduce new products to the market:
1) We do not make products innovations
2) Very rarely
3) Occasionally
4) Often
5) Very often

5. We adapt our products and technologies to the needs and expectations of our customers:
1) We do not do this
2) We adopt very slowly
3) We adopt slowly
4) We adopt quickly
5) We adopt very quickly

6. We enter new domestic markets:
1) We do not enter new domestic markets
2) We enter very rarely
3) We enter rarely
4) We enter often
5) We enter very often

7. We enter new foreign markets:
1) We are not present on foreign markets
2) We enter very rarely
3) We enter rarely
4) We enter often
5) We enter very often

8. We get feedback from customers on the need to change/modify our products:
1) We do not get feedback
2) Very rarely
3) Occasionally
4) Often
5) Very often

9. We develop new products for existing markets:
1) We do not develop new products
2) Very rarely
3) Occasionally
4) Often

5) Very often

10. We develop new products for new markets:
    1) We do not develop new products for new markets
    2) Very rarely
    3) Occasionally
    4) Often
    5) Very often

Appendix 2

(Hypothesis 1)

		Hypothesis 1				
		Key: 1 - Strongly Disagree 2 - Disagree 3 - Netutral 4 - Agree 5 - Strongly Agree				
Respondent number	How big is the size of your company /shop?	Our company is innovative thanks to the knowledge and experience of our employees	The basis for the development of our company is investment in the knowledge and skills of our employees	We employ only staff with high skills	Our R&D employees are very well educated	Our operational employees have very good work experience
No Resp	Size	IH1	IH2	IH3	IH4	IH5
2	2	5	5	5	4	4
11	2	4	4	4	4	4
13	2	5	5	5	5	5
14	1	5	5	5	5	5
23	1	4	5	5	5	5
26	2	4	4	4	4	4
28	1	5	5	5	5	5
34	3	5	5	5	4	5
36	3	5	5	5	5	5
41	2	5	4	5	5	4
42	3	3	4	5	4	4
43	3	5	4	5	5	5
47	3	5	5	5	5	5
48	3	5	5	5	5	5
50	1	5	5	5	5	5
53	3	5	5	5	5	5
54	3	5	5	5	5	5
55	2	5	5	5	5	5
56	3	5	5	5	5	5
57	2	5	5	5	5	5
58	2	5	5	5	5	5
59	2	5	5	5	5	5

61	2	5	5	5	5	5
60	2	5	5	5	5	5
61	2	5	5	5	5	5
62	3	5	5	5	5	5
63	3	5	5	5	5	4
64	3	5	5	5	5	5
65	3	5	4	5	5	4
66	3	5	5	5	5	5
67	3	5	5	5	5	5
68	2	5	5	5	5	5
69	2	5	5	5	5	5
70	2	5	5	5	5	4
71	3	5	4	5	5	5
72	2	5	5	4	5	5
73	2	5	5	4	5	4
74	3	5	5	4	5	5
75	2	5	5	5	5	5
76	2	5	5	4	5	4
77	2	4	4	4	5	4
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98	4	5	5	5	5	5
100	1	5	5	5	5	5

101	1	5	5	5	5	5
102	1	5	5	5	5	5
103	1	4	4	5	5	5
104	1	5	5	5	5	5
105	1	5	5	1	5	5
106	2	4	5	5	5	4
107	3	5	5	4	5	5
108	2	5	4	4	5	5
109	3	4	5	5	5	5

Hypothesis 2

Hypothesis 2				
Key: 1 - Strongly Disagree	**2 - Disagree**	**3 - Netutral**	**4 - Agree**	**5 - Strongly Agree**
The relationship between management and employees in our company is friendly	Our employees have a high degree of decision-making autonomy (empowerment)	Our management and operational processes ensure the delivery of products of the highest quality and within deadlines 4d with customers	Our company is focused on processes that are key to customer value	Our company owns numerous protected commercial rights (patents, copyrights, trademarks)
IS1	IS2	IS3	IS4	IS5
4	4	5	5	4
4	4	4	5	5
4	3	4	5	5
5	4	5	5	5
5	4	4	4	4
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4	4	5	5	5
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5	5	5	5	5

Hypothesis 3

Hypothesis 3				
Key: 1 - Strongly Disagree	**2 - Disagree**	**3 - Netutral**	**4 - Agree**	**5 - Strongly Agree**
Our customers are very loyal to our company	Our company has a wide network of partners with whom it maintains regular cooperation	Our company has a wide but variable network of partners, which it selects for individual projects	Our company is secure due to our good relations with regional and local authorities	We cooperate intensively with R&D centers and scientific institutes when launching new products on the market.
IR1	IR2	IR3	IR4	IR5
3	4	4	5	5
5	5	5	5	5
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Dependent Variable

Opportunities

Key: 1 - Strongly Disagree 2 - Disagree 3 - Netutral 4 - Agree 5 - Strongly Agree

The company monitors and scans changes in the macroenvironment (political, legal, economic, technological):	The company monitors and scans changes in the industry environment (customers, suppliers, competitors):	Cooperation with suppliers and subcontractors allows us to offer the customers	As a result of our company innovations we introduce new products to the market:	We adapt our products and technologies to the needs and expectations of our customers:	We enter new domestic markets	We enter new foreign markets	We get feedback from customers on the need to change/ modify our products	We develop new products for existing markets:	We develop new products for new markets
DV1	DV2	DV3	DV4	DV5	DV6	DV7	DV8	DV9	DV10
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