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**ORGANIZATIONAL RESOURCES AND THE RELATIONSHIP WITH
SMALL AND MEDIUM ENTERPRISE'S PERFORMANCE IN PAKISTAN:
THE MODERATING ROLE OF TECHNOLOGICAL TURBULENCE**

By

GHIAS UL HASSAN KHAN



**Thesis Submitted to
College of Business
Universiti Utara Malaysia,
In Fulfillment of the Requirement for the Degree of Doctor of Philosophy**

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Tandatangan

Tandatangan

ABSTRACT

The growth in technological extents and their use in numerous dimensions plays a vital role across the world in relationships between various organizational resources with performance. This study builds on the number of earlier studies that focus on the relationship between Total Quality Management, Entrepreneurial Orientation, and other internal resources with firm performance. The purpose of this study is to examine the relationship between Total Quality Management, Entrepreneurial Orientation, and Knowledge Management Capabilities with the performance of Small and Medium-sized Enterprises (SMEs) in Pakistan's sports goods manufacturing industry. The study investigates how Information Technology, as a form of technological turbulence, moderates these relationships to enhance firm performance. This study specifically analyzes the declining performance of SMEs in the sports goods manufacturing sector, which has experienced negative growth over the past five years, reaching a decline of 21 percent. Data for the study were collected from Sialkot, recognized as the hub of sports goods manufacturing in Pakistan. A total of 361 completed questionnaires were obtained using a simple random sampling technique. The study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the research hypotheses. The results highlight that Total Quality Management, Entrepreneurial Orientation, and Knowledge Management Capabilities, as strategic orientations, significantly influence the performance of SMEs in Pakistan's sports goods manufacturing sector. Furthermore, the findings indicate that Information Technology acts as a moderating factor in the relationship between these strategic orientations and SMEs performance, strengthening their overall impact. The findings show that Entrepreneurial Orientation enhances the performance of SMEs, particularly when moderated by Information Technology. The research also reveals that Total Quality Management and Knowledge Management Capabilities play a significant role in the success of SMEs. These findings provide valuable insights into how different strategic orientations influence SMEs performance. The study offers practical implications for researchers, policymakers, and SMEs owners or managers, helping them make informed strategic decisions for their enterprises. Additionally, the study suggests that this model could be applied to other sectors beyond the sports goods manufacturing industry, making it broadly applicable for improving SMEs performance across various industries.

Keywords: Total Quality Management, Entrepreneurial Orientation, Knowledge Management Capabilities, Information Technology, Small and Medium Enterprises, and Performance

ABSTRAK

Pertumbuhan dalam takat teknologi dan penggunaannya dalam pelbagai dimensi memainkan peranan penting di seluruh dunia dalam hubungan pelbagai sumber organisasi terhadap prestasi. Kajian ini dibina berdasarkan kajian terdahulu mengenai hubungan Pengurusan Kualiti Menyeluruh, Orientasi Keusahawanan dan sumber dalaman lain terhadap prestasi firma. Kajian ini bertujuan untuk meneliti hubungan antara Pengurusan Kualiti Menyeluruh, Orientasi Keusahawanan, dan Keupayaan Pengurusan Pengetahuan dengan prestasi Perusahaan Kecil dan Sederhana (PKS) dalam industri pembuatan barangan sukan di Pakistan. Ia turut mengkaji bagaimana Teknologi Maklumat sebagai bentuk pergolakan teknologi mempengaruhi hubungan tersebut bagi meningkatkan prestasi firma. Kajian ini secara khusus menganalisis kemerosotan prestasi PKS dalam sektor pembuatan barangan sukan, yang telah mengalami pertumbuhan negatif sepanjang lima tahun lepas sehingga mencatatkan penurunan sebanyak 21 peratus. Data dikumpulkan dari Sialkot, iaitu pusat pembuatan barangan sukan di Pakistan. Sebanyak 361 soal selidik diperoleh melalui penggunaan teknik pensampelan rawak mudah, dianalisis menggunakan Pemodelan Persamaan Struktur Kaedah Kuasa Dua Terkecil (PLS-SEM) untuk menguji hipotesis kajian. Keputusan kajian menunjukkan bahawa Pengurusan Kualiti Menyeluruh, Orientasi Keusahawanan, dan Keupayaan Pengurusan Pengetahuan sebagai orientasi strategik memberi pengaruh yang signifikan terhadap prestasi PKS dalam sektor pembuatan barangan sukan di Pakistan. Selain itu, dapatan kajian turut menunjukkan bahawa Teknologi Maklumat memainkan peranan sebagai faktor pemoderasi dalam hubungan antara orientasi strategik tersebut dan prestasi PKS, sekali gus mengukuhkan kesan keseluruhannya. Dapatan kajian menunjukkan bahawa Orientasi Keusahawanan meningkatkan prestasi PKS, terutamanya apabila dimoderasi Teknologi Maklumat. Kajian ini juga mendedahkan bahawa Pengurusan Kualiti Menyeluruh dan Keupayaan Pengurusan Pengetahuan memainkan peranan penting dalam kejayaan PKS. Penemuan ini memberikan pemahaman yang lebih mendalam tentang bagaimana orientasi strategik yang berbeza mempengaruhi prestasi PKS. Kajian ini memberi manfaat kepada penyelidik, penggubal dasar, serta pemilik atau pengurus PKS dalam membuat keputusan strategik yang lebih tepat untuk perusahaan mereka. Selain itu, kajian turut mencadangkan agar model ini digunakan dalam sektor lain selain daripada sektor pembuatan barangan sukan supaya ia dapat dimanfaatkan secara lebih meluas dalam usaha meningkatkan prestasi PKS secara keseluruhan.

Kata kunci: Pengurusan Kualiti Menyeluruh, Orientasi Keusahawanan, Keupayaan Pengurusan Pengetahuan, Teknologi Maklumat, Perusahaan Kecil dan Sederhana, dan Prestasi

DECLARATION

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; and any editorial work, paid or unpaid, carried out by a third party is acknowledged



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LIST OF ABBREVIATIONS

SME	Small and Medium Enterprise
SMEDA	Small and Medium Enterprises development authority
GDP	Gross Domestic Product
TQM	Total Quality Management
EO	Entrepreneurial Orientation
KMC	Knowledge Management Capabilities
TT	Technological Turbulence
IT	Information Technology
RBV	Resource Based View
CT	Contingency Theory
PKR	Pakistan rupee
USD	United States Dollar
PLS-SEM	Partial Least Square Structural Equation Modelling
FPCCI	Federation of Pakistan Chamber of Commerce and Industry
SCCI	Sialkot Chamber of Commerce and Industry

CHAPTER ONE

INTRODUCTION

1.1 Background of study

Free movement regarding tangible as well as intangible capital assets and resources between countries in the Asian continent and the rest of the world has resulted from the global world effect of Small and Medium Enterprise (SME) operations in the era of the twenty-first century (Lia et al., 2017; Ogbale & Ogochukwu, 2022). In the current scenario, no one can deny the dynamic role of SME specifically in the tough and intensely competitive environment (Asad et al., 2021; Chatterjee et al., 2022). It is a proven fact that SMEs have a vital role in economic growth and are used to give power to the citizens of the country (Al-Haddad et al., 2019; Ogbale & Ogochukwu, 2022). SMEs are of pecuniary growing operations pertaining to economic development at the overall level, which is why the world has reflected the fundamental standing of SMEs (Chatterjee et al., 2022). History has shown that SMEs have existed since the beginning of time, still in the divine valid arguments, in terms of the limited scale of trading across persons at a one-to-one basis is mentioned.

Pakistan is an emerging economy in the developing world. It is a country where the industrial and manufacturing sectors are expanding, and the relative importance of the SMEs sector cannot be ignored (Aftab et al., 2021). SMEs are emerging as an unstoppable engine of economic development, contributing significantly to job creation and meeting customers' needs all over the world. Like Pakistan, other countries, specifically in the development phase of SMEs evolution, are constrained as critical and subject to various hindrances (Masood et al., 2018).

Pakistan has a body for monitoring and establishing SMEs named as Small and Medium Enterprises Development Authority (SMEDA), which began operations in 1998. The government of Pakistan in SMEDA report mentioned that 5.2 million business establishments exist in Pakistan most of them are SMEs which is the parental area of this study, excluding 10 percent of businesses in the private sector all are established and considered as SMEs which accommodate 78 percent industrial labor (PBS, 2019). According to the SMEDA SME policy (2021), it is estimated that the SMEs contribute 40 percent in Gross Domestic Product (GDP) and 25 percent in exports at the country level. Major export sectors such as textile, IT, food processing, surgical goods, and leather, furniture, and sports goods manufacturing sectors mostly comprise SMEs. According to SMEDA, 65 percent of total SMEs are in the provincial territory of Punjab, 18 percent are in Sindh province, 14 percent in Khyber Pakhtunkhwa, and the 3 percent balance in the rest of the country region covered by Baluchistan and Islamabad.

Among several SMEs sectors of Pakistan, the sports goods manufacturing sector in Sialkot city is one of the most known sectors in the international market. It has been known globally for its expertise in making sports-related goods, specifically footballs, at internationally accepted standards and principles. Pakistan's sports goods business includes SMEs with considerable ties to other sectors of the economy. The sector contributes to Pakistan's economy in a variety of ways, including by creating jobs, overall income at the country level, raising FOREX and taking part in commerce activities (SMEDA, 2021). According to the SMEDA annual report 2019-2020, Sialkot alone caters to $\frac{3}{4}$ the world's demand of hand sewed footballs and produces 40 million balls annually. Some of the major indicators of the sports goods sectors in Pakistan's Economy are in the table 1.1 as follows:

Table 1.1
Sport sector facts

Particulars	Indicators, (000)
Directly employed (Skilled) labor force	200 – 250
Other labor (Unskilled)	100 – 150
Overall predicted income	less than US\$ 1,000,000
Share in 2020 exports	0.8 percent
Export progress	Negative 21 percent
Units traded abroad in 2019	63,800 pcs
Accumulated manufactured export amount in 2020	More than US\$ 177,700
Tentative number of SMEs in sector	6,000 (approximately)
Capability utilization	85 percent to 90 percent

Source: Small and Medium Enterprise Development Authority, Sports brief (2021)

Table 1.1 above shows the major economic indicators of the sports goods manufacturing sector in SME industry of Pakistan. Approximately 6000 manufacturing units tentatively working in the sports sector with skills employment above 200,000 and unskilled more than 100,000 (SMEDA, 2021).

Owners and managers of SMEs are trying to strengthen their usefulness and re-assess their SME policies and management techniques to ensure that they are offering better and high quality goods and services to their customers because of ever-rising globalization and growing market challenges (Asad et al., 2016; Anon, 2018; Asad et al., 2020). Therefore, it would be right to say about the SME ability to be competitive by meeting customers' expectations and desires and supplying them with high-quality products and services (Hilman, 2020). Thus, businesses can gain a competitive advantage by fulfilling customers' needs and desires based on the market requirements. This can be achieved by supplying them with goods or services of superior quality in an intense market competitive environment. Since the last decade, the performance of sports goods manufacturing sector in Pakistan has deteriorated specifically in the export area.

Table 1.2

Pakistan sports sector exports

Years	2016	2017	2018	2019	2020
Total (USD, 000)	220,034	204,713	217,801	224,311	177,661
Growth %	-5%	-7%	6%	3%	-21%

Source: Small and Medium Enterprise Development Authority, Sports brief (2021)

Despite the century of expertise in the sports goods manufacturing sector of Pakistan still facing the declined in performance with the negative growth as mentioned in table 1.2 as above. Although at times the sector was in a leading position in the overall exports of the country but now-a-days it faces a big challenge of performance downfall. By doing an extensive literature review about the factors influencing the SMEs performance it is accomplished that there are numerous financial and non-financial factors that have an impact on SMEs performance (Anon, 2018; Abubakar et al., 2019; Aftab et al., 2021).

Although commonly considered finance as one of the crucial organizational resource for performance improvement. Some of the studies mentioned among several influencing organizational resources as per the literature so far review some of the factors found frequent in different studies like Total Quality Management (TQM), Entrepreneurial Orientation (EO) and Knowledge Management Capabilities (KMC). Studies mentioned that in TQM has one of the major reasons that strengthen SMES to compete in an international market to enhance the performance (Aftab et al., 2021). TQM has long been recognized as a technique for gaining a strategic advantage during the competition (Asad et al., 2020). TQM has a major effect on SMEs' efficiency, suggested that TQM adoption may boost performance and build a competitive advantage, en et al., 2020). TQM is an essential factor in assessing growth and

performance at both local and international levels. TQM demonstrated a strong and favorable relational effect on SMEs' performance (Hilman, 2020).

TQM refers to a management approach that emphasizes continuous improvement, customer focus, and employee involvement to enhance product and service quality. When viewed through the lens of Resource Base Theory (RBT), TQM practices, such as process improvement methodologies, quality control tools, and employee skills in quality management, can be considered valuable and rare resources (Asad et al., 2020). SMEs that effectively implement TQM create a culture of quality excellence. If this quality-focused culture is rare and difficult to imitate, it can lead to a sustained competitive advantage according to RBT.

Along with TQM, another important reason behind the decline in performance of SMEs is EO. Research showed that EO influences SME performance significantly in a positive direction with the mediating role of competitive advantage (Asad et al., 2024). Most developing and developed countries have recognized that assisting SMEs in their entrepreneurial activities is vital to the expansion and growth of the nation's economy (Asad et al., 2018; Asad et al., 2022; Satar et al., 2024). Aziz et al., (2017) showed a strong link amid EO in terms of how SMEs are performing. Studies also found that there is a strong and important link between EO and performance with dynamic capabilities (Haider et al., 2017; Ali et al., 2020; Aftab et al., 2022). Research showed that companies that use EO and adopt a TQM strategy are more likely to upgrade their products and services and try out new production methods to remain creative and competitive (Al-Swidi & Mahmood, 2012; Asad et al., 2022).

EO refers to an SME's strategic posture that embodies innovativeness, risk-taking, and pro-activeness. When related to RBT, EO manifests as a set of managerial and

organizational capabilities, including a risk-taking mindset, innovation processes, and strategic decision-making abilities, all of which are valuable, rare, and difficult to imitate (Aftab et al., 2022). SMEs that foster an EO continually seek and exploit new opportunities. This proactive approach aligns with RBT and focusses on unique resources leading to sustained competitive advantage.

To be the best and most effective in TQM and EO. KMC also plays an essential part in performance. At the SME level, KMC is useful for SMEs to perform efficiently by applying dynamic capabilities which also gives edge to remain competitive (Qader et al., 2022). In the literature, assorted items of KMC mentioned, but majority agreed upon four areas which include creation of knowledge, storing properly, to be shared in effective path and applying in right direction (Abubakar et al., 2019; Albassami et al., 2019; Anand et al., 2021). KMC and performance have a favorable and strong link while aligning with the capability to learn fully mediates the relational pattern of KMC with the SME performing direction (Qader et al., 2022). SMEs adopting TQM, EO, and KMC strategies usually become the market leader, as these strategic capabilities make them able to be competitive in trying to achieve the level where SME performs at the highest caliber (Garousi et al., 2022).

KMC involves the systematic management of an organization's knowledge assets, including tacit knowledge, explicit knowledge, and organizational processes related to knowledge creation, sharing, and utilization (Qader et al., 2022). When examined from an RBT perspective, knowledge assets, both explicit (documents, databases) and tacit (skills, expertise), are valuable and often rare resources. Moreover, the processes and systems that facilitate effective knowledge management represent valuable and rare capabilities (Albassami et al., 2019; Anand et al., 2021). SMEs adapt at knowledge

management and can leverage their intellectual capital to innovate, solve problems, and respond to market changes swiftly (Garousi et al., 2022). Hence, TQM, EO, and KMC can be seen as effective components of an SME's resource supported by RBT. When these capabilities are valuable, rare, and difficult to imitate or substitute, then they can provide the foundation for sustainable competitive advantage, aligning closely with RBT's principles (Abubakar et al., 2019; Asad et al., 2020; Ali et al., 2020; Baporikar, 2020; Anand et al., 2021).

In the era of technological advancement specifically with reference to Information Technology (IT) considering a matter of Technological Turbulence (TT) on the performance, and sustainability of businesses (Pratono, 2022). Among all other factors, performance is highly dependent on the use of technological factors in terms of IT as an influencing factor (Abidemi et al., 2017; Khalil et al., 2018; Gomezel & Alesksic, 2020). SMEs are more exposed to it as they are trend followers rather than trend setters (Asad et al., 2020). Therefore, considering the relationship of performance with TQM, EO, and KMC, this study considers IT as a moderating factor in the framework supported by studies too (Ndabako et al., 2019; Li et al., 2022).

IT refers as TT to sudden and disruptive shifts caused by advancements in related fields (Pratono, 2022; Li et al., 2022). IT is known for its rapid innovation, introducing technologies like artificial intelligence, block-chain, and quantum computing (Girasa & Scalabrini, 2022). It can quickly disrupt established processes and industries by using an information bank. Businesses must continuously adapt to stay competitive as new IT tools and solutions emerge with respect to business and industry information databank (Li et al., 2022). This innovation frequently disrupts traditional business models, such as the decline of brick-and-mortar stores due to the rise of e-commerce

and online marketplaces (Girasa & Scalabrini, 2022). IT changes necessitate new skills, with automation and digitalization affecting employment while increasing demand for roles like software developers, cybersecurity experts, and data analysts (Benaich et al., 2025). Organizations must invest in reskilling and upskilling to stay competitive. Interconnectedness brings benefits like global collaboration but also challenges like cybersecurity threats and complex regulations, contributing to business instability. IT has transformed consumer behavior through smartphones and social media, leading companies to adjust customer service and marketing strategies. Ultimately, IT by rapidly changing societal and economic spheres, requiring businesses and individuals to adapt through innovation (Agarwal, 2021).

SMEs operate in a complex and unpredictably evolving climate with technology and rapidly changing competitive strategies influencing overall results (Abidemi et al., 2017; Crespo et al., 2021). Small and medium-sized businesses with a versatile and informal atmosphere tend to be more resilient to technological changes. It is also suggested that the attainment and use of IT from outside resources reacted positively towards the SME performance when the SMEs investing more on the exploration and enhancement of technical capabilities (Crespo et al., 2021). Certainly, in this study IT is very crucial for the performance of SMEs as a moderating impact in the present era.

Operational Efficiency

Automation in IT systems enables SMEs to automate routine tasks, reducing manual effort and minimizing errors. This enhances operational efficiency. Streamlining Processes of Enterprise Resource Planning (ERP) systems helps integrate the business processes, from inventory management to customer relationship management (Singh, 2024).

Market Presence and Reach

Online presence in IT facilitates the creation of websites and online platforms, allowing SMEs to establish a global presence, reach a wider audience, and compete on a larger scale. E-commerce with IT, SMEs can engage in e-commerce, reaching customers beyond their physical locations and enabling online sales, which is especially vital in today's digital economy (Smeds, 2023).

Communication and Collaboration

Communication tools used as IT tools like email, video conferencing, and instant messaging enhance communication within the organization and with external stakeholders, fostering collaboration and reducing communication barriers. Cloud-based collaboration tools enable employees to work together seamlessly, regardless of physical location, enhancing productivity and innovation (Crespo et al., 2021).

Data Management and Analytics

Data-driven decision making can be possible through IT systems that provide SMEs with the ability to collect and analyze data. This data-driven approach helps in making informed decisions, optimizing strategies, and identifying areas for improvement. SMEs by using predictive analytics tools can leverage predictive analytics to forecast trends, customer behavior, and market changes, allowing them to adapt proactively (Ahmed & Lucas, 2024).

Customer Relationship Management

IT enables SMEs to implement Customer Relationship Management (CRM) systems, improving customer service through efficient management of customer interactions,

feedback, and preferences. IT tools allow SMEs to personalize their offerings based on customer data, enhancing the overall customer experience (Migdadi, 2024).

Cost Savings

SMEs can leverage cloud computing to access IT resources without the need for significant upfront investments in hardware. This leads to cost savings and scalability. IT facilitates remote work, reducing the need for physical office space and associated costs (Jain, 2024).

Innovation and Adaptability

SMEs that embrace IT are more adaptable to technological advancements and innovations, ensuring they stay competitive in rapidly evolving markets. IT systems enable SMEs to respond quickly to market changes, customer demands, and industry trends (Girasa & Scalabrini, 2022).

Quality Control

IT enables the use of sensors and data analytics to monitor and maintain the quality of sports goods during manufacturing processes. Automated testing processes ensure that products meet quality standards before reaching the market (Bhanushali, 2023).

Finally, incorporating IT in the sports goods manufacturing industry leads to higher productivity, better quality products, more customization options, a wider market reach, and more effective decision-making procedures. Adopting IT is essential to being competitive and satisfying the needs of a fast-paced, technologically driven market (Liu, 2024; Seric & Ljubica, 2025).

Therefore, with reference to IT the study showed that IT helps management to take effective decisions, especially in terms of information by using IT tools for management of manufacturing SMEs (Asad et al., 2020). A study indicates that advancements in IT positively influence business performance. It proposes that entrepreneurs should devise innovative methods to enhance business performance (Israr et al, 2021; Asad et al, 2021; Liu, 2024). Moreover, the fact has been recognized that the firms that invest more in IT advancement have an edge over the firms that have lower inclinations toward IT (Kapoor & Lee, 2013). Based on the above discussion, IT has been taken as a variable that is expected to be active as a moderator on the connection of TQM, EO, KMC with the direction of SMEs in performing both financially and non-financially. Punjab was chosen to conduct the study, as about 65 percent of SMEs are in this province, representing a diverse culture and a hub of the economically competitive business environment (Dasanayaka, 2011; SMEDA, 2021).

Nevertheless, a dearth of empirical research has been discovered that integrates TQM, EO, and KMC as variables impacting firm performance. Furthermore, the moderating effect of IT on the link between TQM, EO, KMC, and firm performance has not been thoroughly studied empirically. Lastly, most of the research on the performance of SMEs has been conducted in developed economies. Nonetheless, there is not much empirical research on firm performance and strategic orientations in Pakistan, particularly when it comes to the impact of TQM, EO, and KMC. Furthermore, earlier research has focused on large corporations or SMEs rather than the sports industry particularly. Furthermore, these concerns require immediate attention because, in addition to creating jobs, SMEs may reduce poverty and boost economic growth by creating more employment venues (Asad et al., 2021). This is particularly true in

Pakistan, where real unemployment rates are startling (Fatima & Bilal, 2019). Therefore, increasing the performance of SMEs is crucial.

1.2 Problem Statement

Despite of the critical position in terms of vital role of SMEs, Mahmood & Hanafi (2013) identified that in many countries' SMEs perform poorly due to technical constraints, a scarcity of qualified human resources, a shortage of true entrepreneurs and management systems, a lack of accurate and timely knowledge, insufficient Information Technology (IT) usage, and low-quality goods. Many other studies pointed out several reasons for poor performance of SMEs like lack of managerial qualities, negative attitude of employees towards employer, rapid change in demand, technological advancement, lack of financial support, and lack in knowledge of IT (Asad et al, 2016; Abidemi et al., 2017; Abubakar et al., 2019; Asad et al., 2020; Aftab et al., 2021). Accordance with business ranking index at world level Pakistan ranked as 138 this is because of downfall in the performance by SMEs (Albassami et al., 2019). Pakistan is one of the growing emerging states to share its capacity and widespread, tangible, and coordinated actions that add value which must be done so that it could come in the list of developed countries.

In general, SME Sector is a dynamic sector of Pakistan's economy. In comparison with the larger enterprises SMEs have a major share in employing the country's workforce (Adam & Lestari, 2017; Zafar & Mustufa, 2017; Asad et al., 2021). However, the informality of SMEs is a major hurdle that is hindering the proper tracking of growth of the sector. 1.6 million businesses file their tax returns, which is only 30.7 percent of the estimated total number of SMEs. Similarly, as per State Bank of Pakistan (SBP) report issues in September 2020 on quarterly basis, SME financing as a percentage of

total private sector financing is only 6.21 percent, while the total number of SME borrowers is 178,827. As the incidence of informal enterprises is high in Pakistan, awareness creation regarding benefits of formalization is of paramount importance. Most of the SMEs in Pakistan work along conventional and traditional lines. Due to intense global competition the state of SMEs in Pakistan is at their troubling stage. SMEs not only have to struggle and compete among themselves but also with other larger SMEs, therefore they need to adopt those business strategies which support them to sustain and be competitive (Anwar, 2018; Ishaq et al., 2020).

Moreover, be specific to the sports goods sector of Pakistan is one of a crucial and important sector among other sectors of SMEs. However, in the last few years, especially half of the decade, it has not shown encouraging progress and is facing a downward trend in growth, specifically in export dimension as mentioned in table 1.3 below. Although in the world statistics the sports sector globally shows upward growth as reflected in table 1.3. Whereas the capital utilization in this sector is above 85 percent but still showing negative 21 percent growth in 2020 which is the continuing declining pattern in growth from last few years (SMEDA, 2021).

Table 1.3
Comparison of World and Pakistan Exports

Years	2016	2017	2018	2019	2020
			USD, 000		
Pakistan – Total	220,034	204,713	217,801	224,311	177,661
Growth %	-5%	-7%	6%	3%	-21%
World - Total	23,425,400	24,945,100	26,739,100	27,716,200	32,003,900
Growth %	-3.6%	6.5%	7.2%	3.7%	15.5%

Source: Small and Medium Enterprise Development Authority, Sports brief (2021)

Comparing with the world performance in 2016 export performance of Pakistan was 5 percent negative which was higher than the world average as 3.6 percent negative.

Although, from 2017 the world performance in the sector turned to positive to 6.5 percent in 2017 reached to 15.5 percent in 2020 gradually, but still the performance of the sector in Pakistan showing negative growth at 7 percent in 2017. However, afterward from 2018 shifted slightly toward positive to the world percentage, but again in 2020 declined drastically as 21 percent negative which is an alarming situation compared with the world positive 15.5 percent growth in the same sector with the same time. Therefore, it gives motivation to study the reasons of declining performance in Pakistan sports sector SMEs.

On the hand as per the economic survey of Pakistan report sports sectors exports in USD also showing the declining trend as reflecting in below figure.

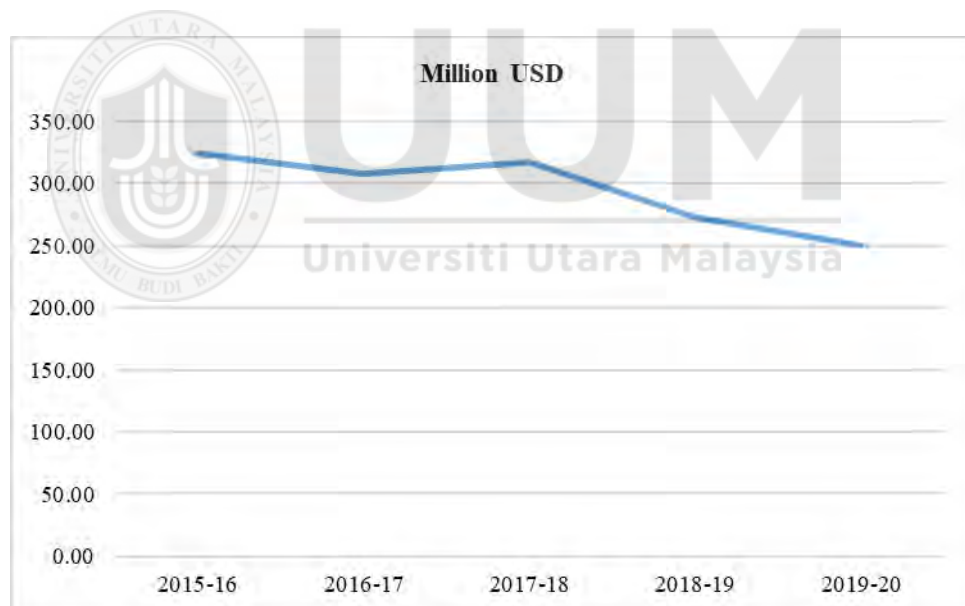


Figure 1.1
Exports trend in USD
 Pakistan Economics Review – PER (2022)

As shown in the above figure the exports of sports sector according to the Pakistan economic survey report issued by the Government of Pakistan reflecting a declining trend in terms of USD million. Although it shows slight improvement in 2018 from

2017 but immediately reverts to a major decline which is an alarming situation and needs to be investigated. Among the sports products, the exports of footballs rose by 8.35 percent, surging from US\$ 35.728 million last year to US\$ 38.713 million during the current year of 2021.

In recent case scenario of 2024, the gloves exports, however, dropped by 1.38 percent by going down from US\$ 9.429 million last years to US\$ 9.299 million during the current year, the PBS data revealed. Likewise, the exports of all other sports goods also dipped by 2.21 percent to US\$ 13.970 million from US\$ 14.285 million last year. Meanwhile, on a year-on-year basis, the sports goods export witnessed a decrease of 2.18 percent in August 2024 as opposed to the export of the same month of last year. The sports goods exports in August 2024 were recorded at US\$ 32.624 million against exports of US\$ 33.350 million in August 2023. During the month, the export of footballs witnessed an increase of 3.84 percent whereas the export of gloves and all other sports products declined by 17.98 and 6.32 percent respectively (PSB, 2024).

Most of the SMEs adhere to minimum quality requirements, implying that the quality of their goods cannot be guaranteed (Asad et al., 2020). Therefore, there is an urgent need to improve and expand awareness of best practices in Pakistani SMEs. Global level competition consistently enhancing in economies resulting in the environmental factors for business showing growing dynamics. It is significant that the people in managing the businesses should try to enhance and expand SME effectiveness by defining SME tactics and equipped them by recognizing the role of technology towards efficiency and performance (Gomezel & Aleksić, 2020; Crespo et al., 2021). What strategic orientations are crucial for long-term SME expansion and profitability, particularly in the relation with developing economies like Pakistan? There are

numerous factors involved in such a case which have an impact on the performance of SMEs.

Globally, countries are progressing towards economic development by encouraging industrial participative behavior (Imran et al., 2020). In this regard, anon (2018) stressed that management of overall quality treating as key area which can specifically improve the export as well as overall performance of SME sector. TQM is a concept which manages the quality at all levels to accelerate the SME performance in every aspect of the goods manufacturing and services providing to the client (Al-Dhaafri et al., 2013; Aswini & Kumar, 2016; Asad et al., 2020). The core intension behind managing the total quality in broader aspect is to be improving the SME performing capability in exports (Asad et al., 2020). To accept the sensitivity of quality management in every area is very crucial for the SME involved in manufacturing specifically in Pakistan (Mushtaq & Peng, 2020). However, the performance graph behavior with TQM still has inconsistencies in results some of research found the positive relationship but in few also reflecting insignificant (Al-Dhaafri et al., 2013; Al-basheer et al., 2015; Anon, 2018; Asad et al., 2020).

Therefore, because of these inconsistent results, it gives motivation for detail research on TQM impact on SME performance by adding moderating variable of IT as used before but not with the set of given variables specially with reference to Pakistan which evaluated in this study. Like in one research that TQM positively influencing the SME performing direction with the moderation of IT (Ndabako et al., 2019). Together with this, sometime IT is used as moderator alone or with mediation of other factors also raises whether it has impact or not on performance (Saqib et al., 2017; Pratono, 2018; Martin et al., 2020). Moreover, IT also has positive impact on manufacturing SMEs

with in-depth dominant position towards competitiveness together considering as critical driven factor of strategies. Additionally, there are other studies including IT as technical capabilities have impact on performance in manufacturing firms (Celik, 2023).

Besides the impact of TQM performance Entrepreneurial Orientation (EO) also has a vital role in enhancing the SME performance. According to Hilman (2020) intense competition in the global market has been observed due to an increasingly complex and dynamic business environment. It is also observed that SMEs, especially in developing countries, ignored the understanding of key capabilities, for example EO used to exploit the superior performance for improvements. Since EO reflects a person's entrepreneurship, it has been acknowledged as having potential benefits (Aftab et al., 2022). EO entails the desire to innovate, welcoming endeavor for challenges to create novel products, services, and markets, and turn added pro-actively by discovering new possibilities and efficaciously competing with the competing brands (Haider et al., 2017; Asad et al., 2018; Fatima & Bilal, 2019). However, it also demonstrates that innovation moderates the association of EO and firm performance as per research done of secondary-level activity firms in Pakistan and indicated a negativity in the relationship between EO on firm performance (Khan et al., 2019). Innovation also has a mediating the performance of firms indirectly by impacting the other two dimensions of EO named risk-taking and pro-activeness (Asad et al., 2018).

Although many researchers test their hypothesis in relation with EO and SME domain firms' performance, even then the studies concluded with the assorted results such as positive, negative, significant, insignificant, and partially impact towards financial and non-financial performance of the firm (Alembummah, 2015; Asad et al., 2018; Aftab

et al., 2022). Some other researchers also showed variations in results (Asad et al., 2020; Khan et al., 2019). These varying and varied conclusions concerning EO, and performance motivate for extending the scope of study in enhancing to validation of the impact of EO on SME performance together with a moderating variable. IT as moderating variables in relation to EO as well as marketing capabilities and it impacts on innovativeness and risk-taking behavior in relation to firm performance (Ju et al., 2013; Pratono et al., 2018; Farrukh et al., 2021). Information technology as part of IT by way of social media also has a moderating role in sustainable performance (Abidemi et al., 2017).

SMEs using TQM and EO could not ignore the importance of ascertained knowledge and its management in the information era. Knowledge Management Capabilities (KMC) covering various aspects have a significant impact on performance together with moderating the impact of IT (Akram et al., 2018; Albassami et al., 2019; Asad et al., 2020; Gomezel & Aleksić, 2020). Some other studies conducted on SMEs in Pakistan also reflect the importance of KMC in the context of SME performance. As knowledge management to be considered an important and engaging concept in today's business environment (Hamdani, 2018; Albassami et al., 2019; Zia, 2020). By encouraging the sharing of knowledge SMEs can enhance their development (Yasir & Majid, 2017). KMC is vital in enhancing and facilitating processes and product innovations for sustainable firms' growth (Hassan & Raziq, 2019).

In the present era of global village concept, the world has inclination towards capital consisting of intellectuals and advancement in technology highlighted the significance of KMC. This enhanced focused on knowledge make it strategically major tools for SMEs sustainable growth and development (Baporikar, 2020). Due to the swift move

of the world towards knowledge, the economies based on it for prosper growth and operate successfully in the competitive surroundings (Abubakar et al., 2019). It is proven fact that the information is considered as a force which drives the firm to become successful (Zaim et al., 2019). To maximize the output and become competitive KMC perceiving as one of the main tools (Wahda, 2017). The core theme of KMC is to manage the information effectively to gain advantage from it (Ngah et al., 2016; Hassan & Raziq, 2019). Shared knowledge, create useful knowledge with innovation and absorbing culture important to effectively use knowledge as best resource (Anand et al., 2021). Hence, reflecting the proper management of above-mentioned knowledge operative elements as resource bring effective performance of firms in result (Alaarij et al., 2016).

KMC exhibit a positive relationship with the SME performance through achieving competitive advantage (Ngah et al., 2016; Yasir & Majid, 2017; Hassan & Raziq, 2019). Generating effective knowledge and keeping its smooth circulation, considered as dimension of KMC promotes firm performance. However, procedures for storing knowledge are not directly associated with the performing ability of firms (Obeidat et al., 2016). Additionally, KMC acts as a buffer concerning the attitude of the entrepreneur and the performance of the firm, as well as the entrepreneurs' innovative skills and performance of the firm (Khan et al., 2021). Thus, considering the lack of consistent inference and ambiguities in the literature it is recommended that when the results are not consistent in the literature it is better to add a moderating role of variable in support with Contingency Theory (CT) in previous studies as well (Otlay, 2016; Pratono, 2016).

Several variables are used as moderators by numerous studies around the world with different sets of independent variables. In context with Pakistan IT used as a variable in the conceptual framework to see the impact on SMEs performance (Asad et al., 2022). In context with the sports goods manufacturing sector in Pakistan IT also supports various innovations like product innovation, process innovation, marketing innovation, and organizational innovation as an EO dimension in performance (Asad et al., 2018). According to the literature reviewed so far, reviewed does not find IT as a moderator with the given set of independent variables as proposed in this study. In the study conducted by Iqbal et al. (2021), it is argued that the individuals, who strategically lead the firm have their own unique way of perceiving the situational pattern and recognizing IT as the moderating role that prominently influences the firm performance in boosting the growth of firms (Farrukh et al., 2021)

Researchers used IT as a moderator between internal resources and performance (Ju et al., 2013; Pratono, 2018; Pratono et al., 2018; Ndabako et al., 2019). The association between IT capabilities and business performance is also partially mediated by absorptive capacity and corporate entrepreneurship (Sattar et al., 2021). The moderation analysis indicated that IT advancements also give strength as moderator to the variables in reflection with firm progress (Jardim et al., 2020). However, studies also showed that IT has a guiding impact on performance (Liu,2024). Therefore, considering this study added the moderating effect of IT supported by various previous studies (Ju et al., 2013; Kapoor & Lee, 2013; Wardi et al., 2018). Therefore, the drive of this study is to evaluate the impact of IT as a moderator supported by CT for empirically testing and enriching the Resource-Based View (RBV) and Knowledge-Based View (KBV) on the associated relativeness of TQM, EO, KMC, and firm performance at the level of SMEs in Pakistan.

1.3 Research Questions

Based in the problem raised in the study, the following research questions have been designed:

1. Is there any relationship between Total Quality Management (TQM) and the performance of SMEs?
2. Is there any relationship between Entrepreneurial Orientation (EO) and performance of SMEs?
3. Is there any relationship between Knowledge Management Capabilities (KMC) and performance of SMEs?
4. Does Information Technology (IT) moderate the relationship between Total Quality Management (TQM) and performance of SMEs?
5. Does Information Technology (IT) moderate the relationship between Entrepreneurial Orientation (EO) and performance of SMEs?
6. Does Information Technology (IT) moderate the relationship between Knowledge Management Capabilities (KMC) and performance of SMEs?

1.4 Research objectives

1. To examine the relationship of Total Quality Management (TQM) to the performance of SMEs.
2. To determine the relationship of Entrepreneurial Orientation (EO) on the performance of SMEs.
3. To identify the relationship of Knowledge Management Capabilities (KMC) on the performance of SMEs.

4. To identify the moderate role of Information Technology (IT) on relationship of Total Quality Management (TQM) and performance of SMEs.
5. To determine the moderating role of Information Technology (IT) on relationship between Entrepreneurial Orientation (EO) and performance of SMEs.
6. To examine the moderating role of Information Technology (IT) on relationship of Knowledge Management capabilities (KMC) and the performance of SMEs.

1.5 Scope of the study

The research here refers to the selected variables within its scope as presented in the framework affecting the overall performing directions of small and medium-scale of businesses specifically in a country like Pakistan which is in its phase of development and motivated to catch up with other evolving countries like Singapore Malaysia, and China. The sector in the study in sports goods manufacturing is a vital and huge share in the country's SMEs share in GDP but has shown negative growth in the last few years as mentioned in Table 1.2. The study focused on examining the impact of Total Quality Management (TQM), Entrepreneurial Orientation (EO), and Knowledge Management Capabilities (KMC) on the performance of SMEs. The study covered the Punjab province of Pakistan, and the analysis was the SME studied from the viewpoint of the individuals those own and manages the business operations of SMEs. Thus, the sampling evaluated here in academic research was confined to the organization as unit of analysis and the owner and managers are the representatives of the organization.

It is believed that by applying TQM strategy together with EO, KMC, and Information Technology (IT) as a moderator by using the IT tools for information gathering and effective use to enable SMEs to respond quickly to market changes, customer demands,

and industry trends (Girasa & Scalabrini, 2022). SMEs performance can be improved in relation to growth in turnover, profitability, market stake, customer satisfaction, and employee satisfaction. For this purpose, first, the effect of three variables TQM, EO, KMC on performance was independently examined, and the impact of the moderating role of IT on these variables in conjunction with performance was put forward. The focus of this study is the significant role of different important strategic elements by SME TQM, EO, and KMC on performance of SMEs, is in consonance with the premises of the RBV and underpinning theory whereas, KBV and the CT theories are supportive theories.

Hence, the study is limited to SMEs fulfilling the criteria as set and defined by the Small and Medium Enterprise Development Authority (SMEDA). Therefore, these boundaries help the researcher to establish the direction of this research to achieve its stated objectives within the given time.

1.6 Significance of the study

The study here examined the connection between SME performance with Total Quality Management (TQM), Entrepreneurial Orientation (EO), Knowledge Management Capabilities (KMC), and Information Technology (IT) in Pakistani sports sector enterprises. The moderating factor of IT was used to examine this effect. The study achieved both theoretical and practical relevance by succeeding in this objective. In other words, the study anticipated adding to the current frame of knowledge regarding the performance of SMEs. The study is intended to benefit the corporate community as well as the sports industry in Pakistan. It will also produce recommendations that can be used to help the industry perform better eventually.

1.6.1 Theoretical Significance

The Resource-Based View (RBV) theory is a strategic management framework that suggests that an SME's internal resources and capabilities are the primary drivers of its competitive advantage and performance. According to RBV, not all resources are equal; it is the resources that are valuable, rare, difficult to imitate, and non-substitutable that give a SME a sustained competitive advantage. Let us explore how RBV theory relates to Total Quality Management (TQM), Entrepreneurial Orientation (EO), and Knowledge Management Capabilities (KMC).

The focal point of this research is on Small and Medium Enterprises (SMEs) of Pakistan, where there is limited research regarding TQM, EO, KMC, and SMEs performing trends found with the given set of variables including Information Technology (IT) as a moderating factor. Therefore, the study here contributed to advancing the knowledge in the field reflecting the SME performance operation categorical as SMEs, specifically in Pakistan.

Moreover, this study promoted the extant literature on IT as a moderating factor that the earlier investigations considered scarcely, the association between TQM, EO, and KMC as a combined set of variables on performance of SMEs. This empirical study is unique in that it incorporated the three strategic constructs, TQM, EO, and KMC together as antecedents of SMEs performance. This academic work expects to enhance and extend the currently available literature and support for the hypothesis which assesses the association among TQM, EO, KMC, and the performance with IT as a moderating effect on SMEs performance in Pakistan.

In conclusion, RBV holds that not all resources are created equal and that an SME can only maintain a competitive edge if it has access to resources that are valued, uncommon, hard to duplicate, and non-replaceable. In the context of Pakistan's sports industry, this study examined the relationship between RBV theory and TQM, EO, and KMC with IT as moderator.

1.6.2 Practical Significance

As far as according in light with the literature reviewed, a new set of variables tried to be combined here in research conceptual framework. Thus, this study in result aided as a controlled direction to Small and Medium Enterprise (SME) owner and managers, on the significance of different orientations toward achieving higher performance and competitiveness. The findings of this research benefited government functionaries like Small and Medium Enterprise Development Authority (SMEDA) Pakistan. It also can be useful for the Government of Pakistan (GoP) in developing strategies and policies related to SMEs with reference to promote the variables in the study as Total Quality Management (TQM), Entrepreneurial Orientation (EO) and Knowledge Management Capabilities (KMC) as independent variables.

Moreover, it also fruitful for management of the SMEs in taking decisions related to policy constructs and relevant recommendations regarding development and enhance the growing path of SME in Pakistan. Furthermore, it would also help academia and researchers in improving their knowledge and considerate pertaining to the variables studied within the framework of SMEs of Pakistan. In a developing country, the situation is more politically and economically prone to change, SMEs that are more knowledgeable about related markets and accessing modern technology are more likely to survive. As a result, this study also examined how rapidly evolving technology

related to the effectiveness of gathered information dynamics might cause a corporation to gradually lose profitability and how Information Technology (IT) played as a moderator in defense against these potential failure causes.

1.7 Definition of Key Terms

1.7.1 Organizational Performance

Organizational performance with reference to the small and medium businesses can be defined as the potential of creating employment and resources with respect to the newly started businesses and their sustainable growth (Asad et al., 2018; Asad et al., 2024). Therefore, in this study, how the SMEs meet the expectations of their owners in relation with SME sustainable growth, financial and non-financial indicators consider as performance of the SME.

1.7.2 Small and Medium Enterprise

Small and Medium Enterprise (SME) are defined as SMEs not more than 250 people working in that, fully paid capital up to 25 million Pakistani rupees (PKR), or turnover per annum up to 250 million PKR (SMEDA, 2021). Small businesses are those with fewer than 35 people employed, whereas mid-range operations holding SMEs are those having up to 250 employees (SMEDA, 2021).

1.7.3 The sports goods sector

According to a brief published by Small and Medium Enterprise Development Authority in 2021, sporting goods industry or sports equipment industry encompasses businesses and manufacturers involved in the design, production, distribution, and sale of products and equipment related to sports, fitness, and recreational activities. This

sector covers a wide range of products designed for various sports and activities, including but not limited to Sporting Equipment, Apparel and Footwear, Fitness Equipment, Outdoor and Recreational Gear, Athletic Accessories, Sports Technology, Team and Individual Sports Gear, and many more. The sports goods sector serves a diverse customer base, including professional athletes, amateur sports enthusiasts, fitness enthusiasts, and recreational participants. It is a global industry with numerous companies competing to provide high-quality and innovative products to meet the demands of consumers interested in sports and fitness activities. The sector can also include retailers, wholesalers, and e-commerce platforms that facilitate the distribution and sale of these sports-related products.

1.7.4 Total Quality Management

Total Quality Management (TQM) is considered a vital organizational resource for performance improvement. It also encompassing way of managing that seeks to continuously improve all processes with the involvement of all staff and under the direction of upper executives to produce and deliver goods and services that are better than those of their rivals in line with consumer requirements and demands (Anon, 2018).

1.7.5 Entrepreneurial Orientation

Entrepreneurial Orientation (EO) is a tendency which entails the readiness to experiment, attempt to take initiatives to progress new goods, services, and marketplaces, and act proactively by discovering new possibilities and efficiently competing with the rivals (Buli, 2017; Asemokha et al., 2019; Majali et al., 2022). In

the era of EO it is accepted that it is one of the crucial resources for organizational performance enhancement (Asad et al., 2020).

1.7.6 Knowledge Management Capabilities

Knowledge Management Capabilities (KMC) is a vital mechanism in the current world of research specifically to create knowledge continually and intentionally. It is an ability to use and update knowledge for getting competitive advantage resulting in a positive impact on performance. Companies can leverage their knowledge throughout and expand their knowledge further based on existing expertise and appropriate knowledge (Abubakar et al., 2019).

1.7.7 Information Technology

Information Technology (IT) consider as Technological Turbulence (TT) taken as moderator (Gomezel & Aleksić, 2020; Li et al., 2022). According to Jardim et al. (2020), the idea behind the acceleration speed in advancing Information Technology (IT) application overall at industrial level. IT took advantage of lucrative business prospects to achieve better and more sensible financial performance (Asad et al., 2023). In a highly tempestuous environment with reference to technical enhancement the period for accepting and adopting the modern technology is quite shorter because of its obsoleting and replacing probability is high in business to be competitive (Ju et al., 2013; Jardim et al., 2020).

1.8 Organization of Thesis

The overall thesis is organized in five chapters. First covered the background of the study, overview of Pakistan and economic condition specifically focusing on Small and

Medium Enterprise (SME), problem statement, research questions, research objectives, scope of the study, significance of the study, term explained organizing the thesis itself. Second, we discussed the relevant literature on Total Quality Management (TQM), Entrepreneurial Orientation (EO), Knowledge Management Capabilities (KMC) and Information Technology (IT) within the context of SMEs performance, conceptual framework, hypotheses, and underpinning theories. Third included the research methodology, study population, analytic unit, data gathering technique, and questionnaire design, and the content reliability and validity of the instrument for data collection planned for this research. Likewise, this chapter also provided the detail on the technically evaluated professional statistical ways. SMART-PLS is used for data analysis and to assess the hypotheses. Fourth, present the results of the study obtained by using the defined methodology in this research and detail assessment of hypothetical concerns of the study and the associated inferences explained in this section of the thesis. Finally, the fifth section elaborated the major resulting outputs and formulated the research conclusions along with the study's shortcomings and suggestive recommendations for additional research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The impact of the factors employed as independent variables on SME performance in this study covered in the literature review section. It demonstrates the in-depth understanding of earlier studies and the contribution that fits within the currently accessible body of literature. Additionally, it recaps earlier studies and explains how the study relates to the origin of fresh concepts.

In this chapter, the pertinent literature has been thoroughly and critically assessed around Small and Medium Enterprise (SME) performance. In this reviewed literature Total Quality Management (TQM), Entrepreneurial Orientation (EO), and Knowledge Management Capabilities (KMC) were acknowledged and taken as independent variables. These variables used to see the impact on SMEs' growth in Pakistan involved in the activity to manufacture the items related to the sports industry. Due to the inconsistencies in the results of previous studies regarding the set of variables Information Technology (IT) used as a moderating variable to minimize this gap of inconsistencies in findings. Therefore, this chapter here formulated and focused on expressing the views in concern literature of the topic considering in this research. The literature reviewed in this concern also supports the selection of independent variables in relation with IT which took as a moderator towards the dependent variable in this current research. Finally, considering the knowledge obtained from the literature reviewed, the conceptual framework of this study has been developed.

2.2 Small and Medium Enterprises (SMEs)

SMEs are vitally contributing to the development of entrepreneurship, and this has been made by numerous smaller businesses and SMEs which would not have been acknowledged as deserves (Alembummah, 2015; Asad et al., 2021). Therefore, SMEs contribute to development by fostering economic growth. Uncertainty, innovation, and evolution are the three primary qualities that set SMEs apart from large businesses (Asad et al., 2018). Hence, SMEs conclude by shipping home goods to various countries throughout the world (Zafar & Mustufa, 2017; Ta'Amnha et al., 2024). SMEs broadly gained importance as the blood in the body for a sustainable growing culture of an economy due to their potential to give an opportunistic view for business individuals (Saqib et al., 2017; Asad et al., 2024).

SMEs were also determined to be a crucial component in fostering economies and growth that lead to global economic success and support national development by raising the average income of the populace (Zafar & Mustufa, 2017; Asad et al., 2018). SMEs are particularly important because they foster a culture of equitable wealth distribution in the economy and aid in the eradication of poverty through economic growth. Economies where SMEs are functional properly helping to reduce inequality of income and wealth distribution in society (Asad et al., 2021). SMEs perform their role in the possibility of new opportunities for employment and the reduction of hardship, among other noteworthy socioeconomic characteristics (Nguyen et al., 2020). Moreover, compared to big businesses, they provide workers with greater opportunities for employment, and they also support entrepreneurship. Because of the low cost of labour, SMEs are also helping to generate economies of scale (Akbar et al., 2017).

2.2.1 Small and Medium Enterprises in Pakistan

Geographically, there are 3 percent each in Balochistan and capital territory of Islamabad and 14 percent in Khyber Pakhtunkhwa, while Punjab has 65 percent of SMEs and Sindh has 18 percent as per statement by SMEDA in 2017. Like Pakistan's economy, which depends on small scale as well as medium scale businesses as they served as the foundation to developing nation in progressing in their economy (Asad et al., 2016). There are numerous ways found in defining the SMEs in different perception (Asad et al., 2018). In Pakistan, State Bank of Pakistan specifies a Small Enterprise (SE) as an enterprise less than 50 workers, yearly sales of at least PKR 150 million, and the ability to access up to PKR 25 million in financing. According to information on the SME bank website for 2021, a medium Enterprise (ME) is also a business with a turnover of annual sales between 150 to 800 million in PKR, more than 50 workers but fewer than 100, and an extended finance facility up to PKR 200 million. In draft SME national policy in 2020 follow the same classification with the addition of SE or ME up to 5 years old will be considered as start-up SE or start-up ME.

Small and Medium Enterprise Development Authority (SMEDA) and Economic Survey reports claim that SMEs in Pakistan generate approximately 40 percent of the country's gross product at domestic level (Asad et al., 2021). In Pakistan, SMEs represent almost 90 percent of all the establishments and provide employment to almost 80 percent of the labor force as mentioned by SMEDA. SMEDA was institutionalized in 1998 October to support the SMEs for the economic growth of Pakistan. Since many encouraging steps taken at governmental level for supporting the Pakistani SMEs. SME Banks were created in Pakistan in January 2002 to aid the country's SMEs. The SMEDA aids Pakistani SMEs in increasing their effectiveness (Zafar & Mustufa, 2017).

Role of SMEs in Pakistan as well as overall in the world is very crucial in all the economic sectors consist of manufacturing, services, agriculture, and others (Akbar et al., 2017; Zafar & Mustufa, 2017; SMEDA, 2021). Hence, SMEs have an extremely sensitive role to assure the prosper growth of developing countries, and their significance cannot be overlooked. However, to the best of literature reviewed SMEs are restrained by some of the resources (SMEDA, 2021), as well as certain other factors. The objective of this study is to determine the impact of EO, KMC and TQM on the performance of SMEs in Pakistan.

Table 2.1
Classification of SME

Institution of Pakistan	Employees	Capital value
SMEDA	Up to 36/99	Up to 20 million
SME Bank	Not available	Lesser than 100 million
Federal Bureau of Statistics	Less than 10	Not available
State Bank of Pakistan	Less than 250	Below 100 million
Industries of Sindh	Not available	less than 10 million
Industries of Punjab	Not available	Lesser than 10 million
Punjab Small Scale Corporation	Not available	Not more than 20 million

Source: (Zafar & Mustufa, 2017)

The table 2.1 above showing the institutional classification of SMEs in Pakistan based on nature of business, employees on job and capital value of the SME. Individuals legally own 96 percent of enterprises. Two corporations and professional business firms. In ideal circumstances, SMEs should lay the foundation for future corporate growth in terms of supporting industry for the large corporations. There are still several difficulties for Pakistan in the SME sectors. SME contributions to socioeconomic, technological, and other fields as micro-engines of macroeconomic growth (Asad et al., 2022). SMEs around the world are increasingly being required by different stakeholders to adopt more technologically responsible business practices.

2.2.2 Small and Medium Enterprises Manufacturing of Sports Goods

Together with the various sectors of SMEs in Pakistan, sports goods manufacturing sector is one of the critical in all sectors in economy but experiencing performance deterioration in last few years (Iqbal, 2023). The sports goods industry showed its potential towards employing the workforce, revenue generation in economy, resulting in improving export revenues which obviously taken major part in trade enhancement at national level. Data collected from the SMEs in the city Sialkot located in province Punjab as it considered as the hub of small and medium size industrial operations with 95 percent of overall productivity. Since 2016 the sector has been struggling to smoothen its performance to improve the declining performance (SMEDA 2021). To support this government of Pakistan also provided a series of subsidies to the sports goods manufacturing sector to boost the sector's performance as mentioned in Pakistan Economic Survey report of 2020 - 2021.

Back in history in 1883 the two Sardars namely Bahadur Singh and Ganda Oberoi established a unit to fulfill the requirements of Britain Armed forces for sporting goods (SMEDA, 2021). Since then, Sialkot producing the sports product and effectively gone through in the transit duration of Pakistan came into being in 1947. In that period majority of the Hindu individuals' factory owners moved to the Indian state. Hence, the control of most of the units took-over by Muslims skilled workforce in that area. Concerning intercountry level trading goods related to sports activities have high values in monetary (Khan et al., 2021). Although the sports industry is in Sialkot and in various parts of Punjab province including Daska, Defence, Uggoki, Kashmir, Pasrur and Marla Roads as well as also have some industrial area in Sahab-Pura on small scale.

Moreover, Sialkot is renowned around the world for producing high-quality sports equipment, medical devices, leather products, sports clothing, and musical instruments (Asad et al., 2023). Local entrepreneurs who are focused on exports make sure that the products get to their intended markets abroad while the local artisans create flawless products. According to SMEDA report 2021 more than 200,000 workers work in export-related jobs directly or indirectly, and the city's export revenue is over USD 900 million. Currently, Sialkot supplies around 60 percent of the overall demand for hand-stitched inflatable balls worldwide, or over 39,000,000 stitched-balls per year. From the accumulated export of the world of football Pakistan's representing more than 11 percent and this is because of quality of production of Pakistan secure reputation (SEMDA, 2021).

Presently, Sialkot have a significant amount of Pakistan's sports goods is share in world export with renowned buyers like; Lotto, Adidas, Umbro, Nike and others (Yasir, 2023). The holding shares in export dimension reflect the existence of skill-full workers and persons at entrepreneurial level together with the favorable conditions related to sundry overheads. The primary level infrastructure which is available in this region, like dry-port and airport with international arrivals, also proved beneficial in terms of manufacturing and exporting facilities of sport goods.

2.3 Sports Goods Product description and Harmonized System (HS) codes

The products utilize sports activities considering sports related items including the range from ball, bat, net, body protection related as well as other tools need by athletes to be equipped with. The industry used coding systems to harmonize the products descriptively called HS-Codes (SEMDA, 2021).

Table 2.2
HS Codes

Sr. No.	HS code	Product description
1	950611	Winter sports equipment
2	950612	Ski bindings
3	950621	Sail boats
4	950619	Ski equipment for winter sports
5	950629	Water-skis, surf boats and related equipment
6	950631	Golf clubs complete
7	950632	Golf balls
8	950639	Golf equipment
9	950640	Table-Tennis articles and equipment
10	950651	Tennis rackets
11	950659	Badminton rackets
12	950661	Tennis balls (excluding table-tennis balls)
13	950662	Inflated balls
14	950669	Other balls
15	950670	Ice and roller skates
16	950691	Exercise, gymnastics and athletics equipment
17	950699	Swimming and paddling pool equipment

Source: Small and Medium Enterprise Development Authority, Sports brief (2021)

The assigned HS-code is 9506 contained diversified goods but the hand-stitched football having star product of Pakistan sector. The other manufacturing related to sports goods of Pakistan leads in cricket bats-balls and stick using in playing hockey and recognized in the world marketplace (SMEDA, 2018).

2.3.1 Pakistan's and world export trade in sports goods sector

The trade cycle of Pakistan's sports good covering import and export both sides of the trading. The study focusses on the exports of sports goods as it shows a declining trend from 2016 to 2020 from negative 5 percent to negative 21 percent, respectively. Whereas the world level export reflecting sustainability notably in 2020 which improved from negative 3.6 percent in 2016 to positive 15.5 percent in 2020 when Pakistan showing negative performance as reflecting in table 1.3 (SMEDA, 2021). Inflated balls itself are a world demanding product and Pakistan includes in the list of countries those have major share in export of these balls but unfortunately facing

decline in growth. The categories of HS-codes for Pakistan's export values in terms of percentage comprises major and minor products and the main code 950 ranging from 611 to 670 but not in sequence (SMEDA, 2018).

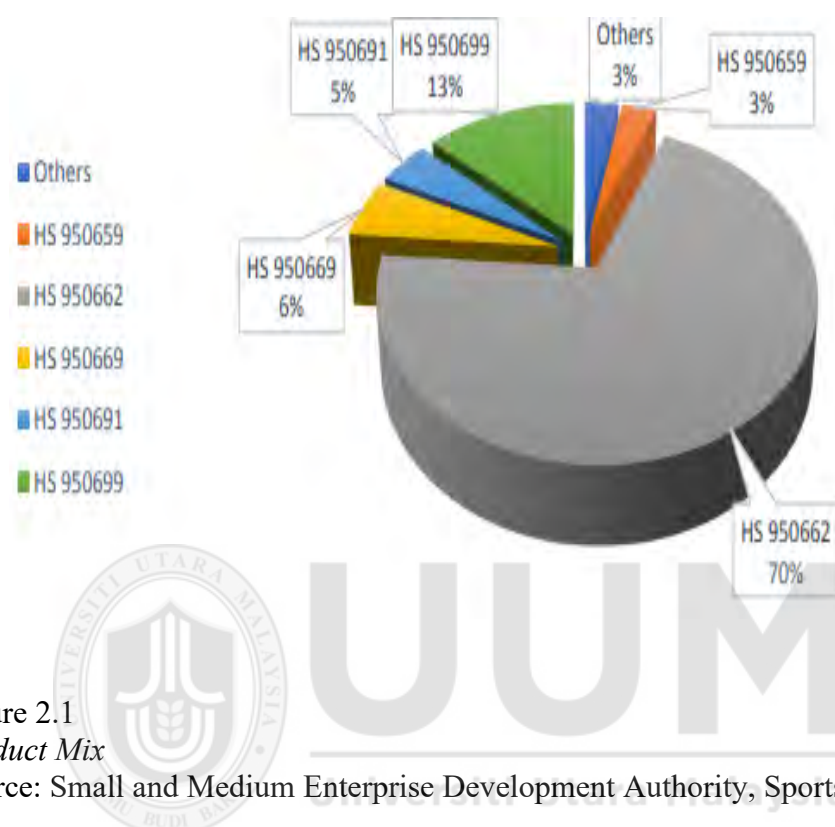


Figure 2.1
Product Mix

Source: Small and Medium Enterprise Development Authority, Sports brief (2021)

The pictorial presentation above in 2.1 showing the percentages of various products share representing the sectorial mix of products exporting from Pakistan. Among these 70 percent stake acquired by a sole product with the code ending on 662 represented by inflated-balls usually known as soccer-balls.

2.3.2 Pakistan Exports Product Mix

The product mix as presenting in above figure of 2.1 showing a major reflection of HS 950662 account for 70 percent share alone major share including various countries to whom Pakistan exporting this product can be seen in the table 2.3 follows.

Table 2.3
Export Percentage Pakistan HS950662

Country	Export Percent
Germany	13.3
Netherland	10.5
United states of America	10.8
Denmark	4.4
China	42.9
Vietnam	12.9
Pakistan	11.3

Source: Small and Medium Enterprise Development Authority, Sports brief (2021)

In the table 2.3 above it is showed that highest percentage of export acquired by China in the world exports of US\$ 475.7 million. Vietnam is next to China in exporting the sports items and Pakistan is on third country in the exports share for sporting goods as 11.3 percent with the major export item coded as HS-950699 amounting US\$ 23.8 million. Whereas the total of sports exports in global market is US\$ 32 billion in which China standing with the highest portion of exports in value terms equal to US\$ 15.8 billion. In comparison with it, Pakistan export market related to products of sports valued in 2020 as US\$ 177.7 million (SMEDA, 2021). Considering the statistics given by “Export Potential Map” Pakistan’s combined export potential in various categories accumulating the value of US\$ 431.68 million which showed a huge gap between the current values of 2020. Therefore, it is crucial to work on it and try to reduce the difference by improving performance (Almansour et al., 2016; Asad, 2024). To achieve this objective Pakistan desperately required to work on a range of factors comprises on management of total quality, polishing the orientation in relation to entrepreneurship as capabilities to manage the huge available bank of knowledge in competing with China internationally.

Since more than 100 years ago, Sialkot, a city renowned as a global center to manufacture sports goods, has served as Pakistan's center of excellence to produce high-quality professional sports goods. With a total export value of US\$ 177.77 million

with gross revenue in all resources of US\$ 1 billion, the industry contributes significantly to the economy. However, performance is still mediocre, with growth tending to be negative 21 percent in 2020 (SMEDA, 2021). Even though big brands get their products from Sialkot, there is no indigenous Pakistani brand of sporting equipment that is well-known outside. Hence, to establish brand at world level the need to train SMEs and individuals exporting the goods is required at expert level, which improves the quality and entrepreneurial skills as it has an impact on growth and performance (Al-Dhaafri et al., 2013; Asad et al., 2018; Asad 2020; Asad et al., 2023; Asad et al., 2024).

Therefore, quantitatively comparing Sialkot to other sister cities with significant exports, it has the finest infrastructure overall. The city needs to build an innovative testing and fabrication facility for sporting products. By joining the set of people have creative ideas to innovate the products is essential for bringing the newest technologies into Pakistan, acknowledging the impact of technological importance in the industry coupled with the capabilities of managing the knowledge on performance (Akram et al., 2018; Chethiyar et al., 2019). The government should acknowledge the special nature of the composite sports goods industry. Lightweight materials can be used to create new and inventive sports equipment on a modern range of products in the sports industrial sector (SMEDA, 2021). The characteristics of these new materials are anticipated to lead to stronger, more flexible, and more ergonomically sound equipment, all of which will increase productivity. Sialkot is renowned throughout the world for producing high-quality sporting products, but the sector is in decline because of lack of maintaining and coping up with the quality in totality together with the entrepreneurial expertise suitably to prepare the goods aligned with the growing need of the market. All this is happening due to not adopting technological advancement

compared with the other competing countries. Therefore, sustainability in managing the overall quality is an extremely sensitive component of performance improvement in real terms (Asad et al., 2020; Asad et al., 2021).

Given the opportunities for growth, Pakistan's sports goods industry continues to contribute significantly to exports. It has been producing professionally quality products used to be in various sports around the history over more than 10 decades with excellence in city Sialkot considered as hub of sports goods production. In context of this study quality product means to produce and send such product which satisfying the customer requirements in effective, effective, and speedy way with safety consideration (Nair et al., 2021). The expanding market, both domestically and internationally, presents investors with a variety of profitable investment opportunities, including the production of sports hosiery and composite goods (such as skis for snow and water sport and roller skates), as well as a retail chain of sporting goods in Pakistan. In the literature of and sports sector of Pakistan, there is an abundance in research that focuses on SME performance with the set of variables of this study together the moderating impact of IT. The reason behind having the motivation to study in this dimension was not to have any literature as per the so far reviewed found on the given set of variables with IT as a moderator in one conceptual framework.

2.4 Performance of SMEs

In the context of the sports industry, "SME performance" signifies the degree of success achieved by clubs, sports organizations, and related enterprises in attaining their goals and objectives. This term encompasses a multifaceted concept that incorporates various dimensions of operational, strategic, financial, and social achievements. To evaluate

the success of SMEs in the sports industry, several critical variables are employed (Asad et al., 2021).

The sports goods manufacturing sector in Pakistan has experienced a decline over recent years. Several factors have contributed to this trend including competition from Asian Markets like China, India, and Vietnam, Pakistani sports goods have faced challenges in maintaining international quality standards, lack of innovation (Asad et al., 2018), infrastructure and supply chain issues as well as shift in consumer preferences. Therefore, export value of sports goods from Pakistan declined which leads to negative 21% growth in 2021 as per the report on sports goods briefing issued by SMEDA in 2021. Employment in the sports goods sector has decreased by approximately 15% over the last decade.

2.4.1 Financial Performance:

Numerous studies mentioned several financial performance indicators, some of them are highlighted below (Pour & Asarian, 2019).

- a) Revenue Generation: This includes ticket sales, broadcasting rights, merchandise sales, sponsorship deals, and other sources of income.
- b) Profitability: Measures the organization's ability to generate profits after accounting for all expenses.
- c) Cost Efficiency: Examines how efficiently the organization manages its costs in relation to the revenue generated.
- d) Financial Stability: The ability to maintain financial stability over time, ensuring that the organization can meet its financial obligations and invest in future growth.

2.4.2 Operational Performance:

- a) **Player Performance:** For sports clubs, the performance of players directly affects the team's success and, consequently, the organization's reputation and revenue.
- b) **Facility Management:** Efficient management of sports facilities, including stadiums and training grounds, is crucial for operational success.
- c) **Game-Day Experience:** Ensuring an enjoyable experience for fans attending games, including factors like seating, amenities, and overall atmosphere, contributes to operational success.

2.4.3 Strategic Performance:

- a) **Market Expansion:** Successful entry into new markets and the ability to attract fans and sponsors from diverse regions.
- b) **Brand Building:** Building a strong and recognizable brand through effective marketing and fan engagement strategies.
- c) **Strategic Partnerships:** Forming partnerships with other sports organizations, sponsors, and local communities to enhance mutual benefits.

2.4.4 Social Performance:

- a) **Community Engagement:** Involvement in community development programs, charity events, and youth sports initiatives, demonstrating social responsibility.
- b) **Fan Engagement:** Creating a passionate fan base through interactive events, social media, and other engagement strategies.
- c) **Diversity and Inclusion:** Promoting diversity within the organization and fostering an inclusive environment for employees, players, and fans.

2.4.5 Innovation and Adaptability performance:

- a) Technological Integration: Embracing technology for fan engagement, data analysis, and operational efficiency.
- b) Adaptability to Trends: Staying updated with trends in sports, including e-sports, fantasy sports, and new game formats, to attract diverse audiences.

In summary, SME performance in the sports sector is a multifaceted concept that includes financial, operational, strategic, social, and innovation-related variables (Asad, 2018; Asad et al., 2023). To be specify here in context with the sports sector SMEs in Pakistan a successful SME excel in managing their finances, optimizing operations, and implementing effective strategies fostering innovation which result is real growth of the industry (Asad et al., 2024). An integrated approach that considers these variables is essential for sustained success and growth in the dynamic sports industry.

According to the researchers, the relationship between a given independent variable and performance is likely to be influenced by the performance measure used in previous research, which assessed numerous methods for evaluating corporate performance (Alkhuzaie et al., 2018; Nguyen et al., 2022; Asad et al., 2023). Additionally, can be defined in terms of performance as a binary dimensional concept that encompasses both objective and judgmental performance in their study. According to the authors, objective performance comprises market-based or financial criteria such as capacity utilization, profitability, and market share (Asad et al., 2019; Sattar et al., 2021). On the other hand, judgment performance is concerned with customer and employee satisfaction measurements, such as consumer satisfaction and employee contentment. Furthermore, according to Asad et al. (2020), profitability, market share, and market share change, return on assets, return on investment, new product success, and

composite measures of these criteria were all used to assess performance. They also argued that the genuine performance of the business on an absolute scale may be easily assessed utilizing both objective and subjective indicators such as management and competitor evaluations.

2.4.6 Operational performance:

Operational performance refers to how effectively and efficiently an organization executes its operations to achieve desired outcomes such as productivity, quality, and customer satisfaction. Various resources affecting Total Quality Management (TQM) enhance operational performance by promoting continuous improvement, customer focus, and employee involvement to ensure high-quality processes and products. Together with Entrepreneurial Orientation (EO) boosts operational performance through innovation, risk-taking, and proactiveness, helping firms adapt quickly and seize new opportunities (Asad et al., 2024). Additionally, Knowledge Management Capabilities (KMC) also improves operational performance by capturing, sharing, and utilizing organizational knowledge to enhance decision-making, problem-solving, and process efficiency (Hassan & Raziq, 2019). Hence, these practices strengthen an organization's ability to perform at an elevated level and remain competitive.

2.5 Total Quality Management

Concept of Total Quality Management (TQM) started with the visual check of individual finished products by the workers (Asad et al., 2023). It was a simple inspection-based system, and any item found in mediocre quality was either scrapped or sold cheaply and in extreme cases, reworked completely. Immediately after World War II, the world witnessed an explosion of goods in bulk. Thus, by 1950s and 1960s

after the craftsmanship period, it was realized that quality system needed on broader level in wide range to prevent problems happening at first place (Haroon & Sharif, 2016). In quality firstly presented the idea of controlling quality in totality. He advocated a systematic way of approaching the quality in total that placed a strong emphasis on preventative-based rather than corrective-based systems. TQM is a process for increasing productivity while still offering clients high-quality goods and services (Asad et al., 2020). When Vallin suggested a total system's approach to quality in 1961, he further developed the idea of total quality management by stressing prevention-based rather than corrective-based systems. Some studies claim that TQM encompasses leadership, staff engagement, customer satisfaction, and continuous improvement (Singha et al., 2018; Asad et al., 2020; Asad et al., 2021). TQM focuses on SME objectives with not only worked as to provide quality products and services but also boost the SME performance (Haroon & Sharif, 2016). Like this, TQM combines a variety of systems, processes, interaction, and dedicated individuals with mindset to assist meet the needs of customers (Haque et al., 2014).

Additionally, prior research created crucial TQM components or techniques in the industrial and service sectors as well (Haque et al., 2014; Asad et al., 2023). Moreover, the verified Quality Management Practices (QMP) is the core to effectively and efficiently controlling and utilizing the resources by SMEs (Kim-Soon et al., 2020). This is so that TQM can support quality management across all aspects of the business (Akpabot, 2016). Aswini and Kumar (2016) looked at the interaction between TQM implementation and reflecting that it is impacting significantly on SME performance towards competition. TQM, however, might have an impact on how well SME performance (Imran et al., 2018). Enhancing the quality of goods and services, productivity, customer satisfaction, production capability, performance of employees,

share of the market, and ability to compete to improve performance are the motivations for applying TQM methods (Jaca & Psomas 2015). TQM and performance relationships, meantime, demonstrated beneficial effects (Imran et al., 2018; Pambreni et al., 2019; Hilman, 2020). According to some studies, TQM incorporates three strategies: customer-focused quality management, technology-focused work that lowers costs by improving production for consumers, and focused quality management that includes contract stipulations (Al-basheer et al., 2015; Asad et al., 2023).

Therefore, there is need to evaluate TQM measures to enable the SME in implementing TQM practices for improving performance (Kwamega et al., 2015). TQM is further explained as committed to contribution by management for continual development (Haque et al., 2014). The literature demonstrated that TQM is a crucial component that must be combined and integrated to achieve satisfying customers' needs (Haroon & Sharif, 2016). TQM places focus on the entire business and every employee, also it calls for continual process improvement to deliver superior goods and services with reference to quality. Leadership, consistency to improve, focusing clients, learning, employee fulfillment, and managing the processes are some of the components that make up TQM and are frequently mentioned in TQM literature (Aswini & Kumar, 2016; Asad et al., 2021). Most of the research on the bond between TQM and performance was done on large enterprises (Chan et al., 2014).

Since SMEs dominate the manufacturing industry in the majority of emerging nations, adopting TQM is even more essential if you want to pursue industrialization and achieve more egalitarian and efficient economic results. Al-Dhaafri et al. (2013), investigated how TQM aims to produce total performance that is higher than the sum of the results from each department. The major goals of total quality adoption in SMEs

have been to improve product quality and make use of various statistical tools and approaches. TQM is a crucial driving force that contributes to higher performance, especially the large foreign firm that focuses more on quality as well as meeting their demand of the consumers (Asad et al., 2020). That is why low quality is a main constraint in growth of the SME (Sadikoglu & Oclay, 2014).

In this study TQM tested over the owners and managers' perceptions in relation with its importance as an integral part for value addition for society, supporting employees to reduce the rate of product defects together bring advancement in products and ensure employees performance with clear instruction as well as proper system for check and balance for improvement and identifying the areas where training needed for maintaining good quality in product (Sadikoglu & Oclay, 2014). TQM holds significant importance in the sports goods manufacturing sector, especially for Small and Medium Enterprises (SMEs) in Pakistan, for several reasons which are missing in some areas and resulting in the decline in the SME performance (Ndabako et al., 2019).

Product Quality and Safety: TQM emphasizes stringent quality control measures, ensuring that sports goods meet international quality and safety standards (Kanaan et al., 2024). For Pakistan's SMEs manufacturing sports equipment, this is crucial for gaining the trust of consumers and ensuring the safety of athletes using their products.

Customer Satisfaction: TQM focuses on understanding customer needs and delivering products that meet or exceed those expectations. By implementing TQM practices, sports goods manufacturers in Pakistan can produce items tailored to the specific demands of athletes and sports enthusiasts. Customers are more likely to become loyal patrons, leading to increased sales and brand reputation (Bhanushali, 2023).

Process Efficiency: TQM principles promote streamlined manufacturing processes, reducing wastage of resources and time. Efficient processes lead to cost savings, allowing SMEs to offer competitive prices without compromising quality (Fatima et al., 2018; Kashif et al., 2020; Al-Rashid et al., 2021). This efficiency is particularly important for SMEs, helping them compete with larger players in the market.

Innovation and Customization: TQM encourages continuous improvement and innovation. In the sports goods sector, this translates into the development of innovative products and customization options. Manufacturers can stay ahead of market trends by introducing new, technologically advanced sports equipment and accessories, catering to diverse customer preferences (Handayani, 2020; Ta'Amnha et., 2023).

Supplier Relationships: TQM involves building strong relationships with suppliers. In the context of sports goods manufacturing, reliable suppliers of raw materials and components are essential (Nakku, 2020). Maintaining quality standards in the supply chain ensures the final product's quality, reducing defects and customer complaints.

Employee Involvement: TQM emphasizes the involvement of employees in decision-making processes. Engaged and skilled workers are more likely to produce high-quality goods. In the manufacturing sector, this leads to a motivated workforce that takes pride in producing top-notch sports equipment, contributing to overall product excellence (Asad et al., 2022).

Brand Image: Consistently delivering high-quality sports goods enhances the brand image of Pakistani SMEs. Positive word-of-mouth, customer reviews, and reputation within the sports community contribute significantly to brand recognition and trust, opening doors to new business opportunities (Novansa & Ali, 2017).

Global Competitiveness: Adhering to TQM standards allows Pakistani sports goods SMEs to compete in the global market. Meeting international quality benchmarks enables these SMEs to export their products, expanding their customer base and contributing to the country's economy. Adhering to the TQM standards lead to cater the challenges of global competition (Kim et al., 2020)

Regulatory Compliance: TQM practices ensure that products comply with relevant regulations and standards, both domestic and international. Compliance not only avoids legal issues but also enhances the credibility of the sports goods manufacturer, instilling confidence in consumers. Hence, with a specific focus on TQM implementation the research showed the control of procedure and regulatory compliance (Haris et al., 2021).

In summary, TQM in the sports goods manufacturing sector of Pakistan, especially among SMEs, ensures consistent product quality, customer satisfaction, cost-efficiency, innovation, strong supplier relationships, motivated employees, a positive brand image, global competitiveness, and regulatory compliance. Implementing TQM principles strengthens the industry, fosters growth, and establishes a solid foundation for long-term success in the competitive global sports market.

2.5.1 Process of Total Quality Management

The core of the TQM is to take care of the customer needs as customers are the bottom line of the actual SME performance. The management of TQM process has a significant impact on performance (Mahmood et al., 2015). TQM advised including at all phases or levels of process management because of which it involves various steps to create a quality environment and culture systematically. For successful process of TQM SME

must have clarity in its vision, mission and divine values, focus on critical success factors with best tracking of those, retain group of key customers, must have survey tools and effective feedback system, proper improvement strategy, efficient monitoring system, alignment of marketing tactics and overall better use of existing and updated technologies.

2.5.2 Improvement by Total Quality Management

Based on everyone in the SME's trust and participation, continuous improvement should be adopted throughout the SME to improve performance (Mahmood et al., 2015). It is crucial for a business to consider and comprehend the requirements of both internal and external variables have influence. The businesses are concentrating even more on continuously improving the qualitative product and procedures to fulfil the necessities because of the intensifying worldwide competition (Loghmani & Dadashpour, 2015).

2.5.3 Total Quality Management and SME's Performance

Observation as per the literature so far reviewed reflecting that SMEs which implemented utilizing performance metrics including revenues, expenses, profitability, capital expenditure, and total assets, Total Quality Management (TQM) effectively beat non-TQM SMEs (Asad et al., 2023). Numerous studies on TQM and SME performance have been done. Studies have revealed that the application of TQM has a good impact (Singha et al., 2018; Imran et al., 2018; Pambreni et al., 2019; Hilman, 2020). Research also identified and revealed a substantial correlation between TQM and performance (Jaca & Psomas, 2015). To better understand how TQM and performance in SMEs relate to one another, researchers have performed empirical studies. SMEs might use

TQM with remarkable success (Sahoo & Yadav, 2017; Asad et al., 2020). Quality is considered as the evaluation standard for gaining a competitive edge and expectations to enhance the SME performance with reduction in cost (Imran et al., 2018; Hilman, 2020; Asad et al., 2020). The idea of continual improvement in an overall approach is the focus of TQM. Everyone in the SME participates in organized manners to achieve performance.

Furthermore, researchers put in place the significance of well-informed leaders, analyzing the gathered information, client engagement, strategies for development of employees through training and their management involvement and various essential elements helpful to plan in TQM implementation (Loghmani & Dadashpour, 2015; Asad et al., 2020). Aquilani et al., (2017), further highlighted quality management in total have crucial importance strategically for SMEs, regardless of scale of operation and their geographical set-up in the world that is becoming increasingly competitive. Researchers discovered that TQM is the resource which sustain the SME to be remain competitive with positively in relation with its performing ability, and that SMEs making efforts to strengthen must concentrate on it with human resource to manage TQM (Mahmood et al., 2015; Haroon & Shariff, 2016; Asad et al., 2020). According to other research, SMEs perform better in the challenging and competitive market if TQM is appropriate (Al-basheer et al., 2015; Jaca & Psomas, 2015).

Successfully adopting quality management strategies in an effective manner will guide SMEs in the development of new skills and getting improved performance (Sahoo & Yadav, 2017; Asad et al., 2022). SME owners also applying TQM procedures in decision making process for sustainability (Masocha, 2019). The style of businesspersons and management at top hierarchy differ in relation to how they lead

the business and how much focused in establishing the norms for TQM resulting in success of quality management strategies (Singha et al., 2018). As TQM is developed as a management concept, research has investigated the connection between TQM and performance. Researchers examined the impact of TQM on performance and found both direct and indirect impact of TQM on performance. Some other research acknowledged a positive impact which shows that it has a clear connection between TQM and SMEs performance. (Abubakar et al., 2019; Aftab et al., 2022; Asad et al., 2023). Thus, previous findings are un-conclusive and have inconsistent results. Therefore, there is a need to identify the other factors which are rooted in these inconsistencies. Furthermore, from most of the findings it is obvious that TQM has an impact on performance, which is going to be explored further in this study by adding a moderating variable. Thus, based on the above literature, the relationship between TQM and performance hypothesizing as follows:

H₁: There is a significant relationship between TQM and SME's performance.

2.6 Entrepreneurial Orientation

Together with Total Quality Management (TQM), entrepreneurship is also important for SME success as it emphasizes producing opportunities and better use of those explored opportunities (Asad et al., 2022). The concept of Entrepreneurial Orientation (EO) is universally applicable (Satar et al., 2024). EO is considered as vital element for SMEs to get competitive edge, growth, and sustainability (Isichei et al., 2020; Majali et al., 2022). Entrepreneurship encloses uncertainty and risk-taking. It also creates the economically added characteristics of established SMEs (Aftab et al., 2021). Entrepreneurship is a notion that outlines how the SME is represented by its efforts as well as its size and complexity of structure (Haider et al., 2017). Examining businesses,

assisting them in becoming more entrepreneurial, and improving their performance are all crucial at the same time (Akbar et al., 2017). EO has its origins in the process of formulating strategies, and Miller was the first to explain it as an SME which uses innovation, takes on risk, and develops proactiveness. Numerous academicians have looked at EO in connection to SME performance (Al-Swidi & Mahmood, 2012; Alembummah, 2015; Aziz et al., 2017; Asad et al., 2018; Ali et al., 2020; Asad et al., 2023). Considering the theories given by Covin and Slevin in 1989 as well as by Lumpkin and Dess argument given in 1996, it also derives that EO have supporting role in decision-making and the formulation of suitable strategies by SME (Gupta & Dutta, 2018).

Furthermore, under the umbrella of EO reflecting the behavioral dynamics needed to be showing innovation, seeking risk and independently taking actions in the competitive markets to survive (Asad et al., 2016; Khan et al., 2019). However, it also depends on the situational contingent performance of the SME. SMEs are a major contributor to the global economy since they create a lot of job possibilities and produce innovative goods. Both uni-dimensional and a multi-dimensional construct of EO were examined by researchers (Asad et al. 2020). Majali et al. (2022), empirically investigated the relational link between orientation towards entrepreneurship and SME growth performance. EO and performance scrutinizes how much one EO component can vary from the others (Asad et al., 2021). The decision-making, procedures, and actions resulted in the launch of new and refined services and product innovation referring as EO (Aftab et al., 2021; Sulaiman et al., 2023). Businesses should invest in EO since it affects how well they perform (Ali et al., 2020). Reviewing historical literature on EO and SMEs performance revealed that it has an empirical impact on SMEs performance (Isichei et al., 2020).

The performance of SMEs and the factors influencing it should therefore be studied by considering EO (Ta'Amnha et al., 2023). There is a contradiction between the product and the market because of most of the SMEs' reluctance to strategically adopt EO (Khan et al., 2021). Additionally, SMEs can more effectively take advantage of new opportunities by simply sticking to EO. Therefore, SMEs must be creative, adventurous, and forward-thinking businesses. As a result, EO fosters creativity, risk-taking, and initiative that can help businesses operate more sustainably (Imran et al., 2020). EO is a crucial strategy for gaining a competitive advantage, performance improvement of enterprises' performance. The context in which a SME enters a new market and is defined by cultural variations may have an impact on EO (Khan et al., 2021). Similar evidence showed that businesses with high EO outperform their competitors in terms of performance (Asad et al., 2018). EO has a strong correlation with performance, and businesses gain more from EO (Satar et al., 2024). The author looked at the connection between EO “innovativeness, risk-taking and pro-activeness” on performance (Haider et al., 2017).

EO is a crucial component of entrepreneurial aim due to their capacity for taking calculated risks and being creative and initiative-taking (Al-Dhaafri et al., 2013; Alembummah, 2015; Asad et al., 2018; Asad et al., 2018). The EO notion alludes to the business' propensity for taking chances, innovating, and acting pro-actively (Kreiser et al., 2013). Building creativity which is called innovation, risk-taking, and pro-activeness are three necessary components. However, it has been noted that the majority of EO research has measured the EO construct using the abilities named as “innovativeness, risk-taking, and pro-activeness.” However, there is a considerable correlation between the performance of the SME and each EO area. (Ta'Amnha et al., 2023).

According to research, EO is particularly significant for SMEs because of their size and distinctive technologies (Asad et al., 2021). EO is a concept that has been established in the entrepreneurship community (Ta'Amnha et al., 2023). It connects the SME's actions to its philosophy (Al-Dhaafri et al., 2013). The development of new prospects within already existing businesses is facilitated by entrepreneurial values. (Masood et al., 2018). EO committed to the procedures, choices, and actions that result in a new entrant (Masood et al., 2018). Hence, EO refers as a strategy that captured various aspects which support in several styles practice norms of decision making. Businesses that are investing in EO are resultantly expecting sustained and enhanced performance even in the face of intense technological change by looking into new possibilities (Alembummah, 2015; Kashif et al., 2020). SMEs who have not made the investment to create an EO may not be able to benefit from shifting provisions and sagged in competition (Kashif et al., 2020).

EO results in improved performance that is why companies with more incline towards EO perform better (Kashif et al., 2020). Consequently, EO is essential for SMEs to flourish because of its influence on higher-level decisions, and EO is a strategic mindset that is demonstrated in the SME's capacity for risk taking (Anand et al., 2021). Compared to large SMEs, EO may be more significant for SMEs. EO therefore considers a component of a SME's culture and denotes an approach, or strategic stance, for the SME (Anand et al., 2021). According to one definition, EO is the development of a SME's direction, which includes entrepreneurial decision-making and activities (Asad et al., 2022). Researchers discovered that the lexicon used to explain entrepreneurship at the SME level was inconsistent. Entrepreneurial posture was the term used by authors to describe SME-level entrepreneurship (Asad et al., 2022), strategically oriented, intra-entrepreneurship (Ali et al., 2020) corporation level

entrepreneurs. Additionally, EO creates new opportunities that may result in increased revenue (Ali et al., 2020).

2.6.1 Innovativeness

Innovation is the acceptance of something that is novel to the SMEs that are adopting it, such as a new behavior, idea, or action (Asad et al., 2018). In many ways and areas exists to innovate, including administrative, production, processes, and service with product itself (Asad et al., 2022). Product and service innovation encompasses the addition of new goods or services to the range of existing available services and goods. Innovating the process encompasses the use of modern technology in the existing business. However, administrative innovation involves a SME's administrative elements. Innovation fosters fresh thinking, inventive methods, and experimenting that may lead to the acceptance of innovative technological procedures, goods, and services. According to Alembummah (2015) it also describes the transition from old to latest technology, demonstrating the desire of businesses to invest in the introduction of novel or innovative products. Therefore, innovation is essential to become a resource of inspiration, and it is crucial to improve and develop the latest products Asad et al., 2018). Additionally, it is crucial for gaining and preserving a competitive edge (Khalil et al., 2018). Additionally, it is crucial for gaining and preserving a competitive edge (Asad et al., 2020). Strangely, every aspect of EO was realized it directly impacting innovation. Additionally, it has been established that innovation has a link which radically mediates the associate behavior of EO with SME success and has a direct impact on SME performance (Khan et al., 2019).

2.6.2 Risk Taking

Moving into new or improved concepts and committing resources with uncertain expected returns are both risky (Asad et al., 2020). Taking risk is a component of entrepreneurial orientation (EO) represents the amount of skepticism brought on by the entrepreneurial activities of the organization. Therefore, increasing degrees of risk taking are anticipated to either produce better returns or larger losses, and EO may increase both the likelihood of SME success and business failure (Khan et al., 2019). However, taking risks might not be the only aspect of EO that can have both favorable and unfavorable effects (Khan et al., 2019). Since the notion of entrepreneurship is typically associated with risk taking, it incorporates the premise of personal conduct risk-taking on a SME's level. Projects with dubious future returns are supported by taking risks. Risk vulnerability is a key component of EO and a crucial trait of entrepreneurs who must allocate resources to start a new, riskier business (Asad et al., 2016). In the unstable entrepreneurial environment, taking risks is essential.

2.6.3 Pro-activeness

Never wait for an opportunity to present itself; instead, seize it. Forward-thinking businesses that actively explore for and seize new chances are said to be "pro-active." (Asad et al., 2016). By launching new or enhanced products and services before the competition or closing enterprises that are currently in the matured or deteriorating stages of their life cycles, proactive businesses can seek out new opportunities and plan for future demands (Khan et al., 2019). Therefore, being proactive entails acting on one's own initiative and seizing fresh chances.

Hence, EO is highly significant for sports goods manufacturing SMEs in Pakistan due to its ability to foster innovation, flexibility, and competitive advantage (Asad et al., 2018; Aftab et al., 2021). Here's why EO is crucial in the context of sports goods manufacturing sector of Pakistan.

Innovation and Product Development: EO encourages a culture of innovation. In the sports goods manufacturing sector, innovation is key to creating innovative products that meet the evolving needs of athletes and sports enthusiasts (Asad et al., 2018). SMEs with an entrepreneurial mindset are more likely to invest in research and development, leading to the creation of innovative sports equipment and accessories.

Market Exploration: Entrepreneurs are proactive in seeking new market opportunities. For SMEs in Pakistan, exploring untapped domestic and international markets is essential. An entrepreneurial orientation can lead to market diversification. The concept allows SMEs to expand their customer base beyond traditional boundaries (Okeke et al., 2024).

Agility and Adaptability: EO emphasizes the ability to adapt to changing market conditions swiftly. In the sports goods industry, trends and consumer preferences can change rapidly. SMEs with entrepreneurial leaders can quickly adjust their production and marketing strategies and adapt to the changing marketing dynamics to be competitive (Asad et al., 2018).

Risk-Taking and Resilience: Entrepreneurs are willing to take calculated risks. In a competitive industry like sports goods manufacturing, taking strategic risks, such as investing in modern technologies or entering new markets, can lead to substantial

rewards. EO helps SMEs assess risks and make decisions that can propel the business forward which is required in major decision-making process (Zia, 2020).

Networking and Collaboration: Entrepreneurial individuals often seek collaboration and partnerships. Collaborations with sports teams, athletes, or fitness influencers can enhance brand visibility. Partnerships with technology companies can lead to innovative product ideas. EO encourages SMEs to actively seek and leverage such collaborations (Khan et al., 2021).

Customer Focus: Entrepreneurs are keenly attuned to customer needs. SMEs with an entrepreneurial orientation prioritize understanding customer preferences and feedback. This customer-centric approach helps in tailoring products according to market demand, leading to higher customer satisfaction and loyalty (Mura et al., 2020).

Brand Building: Entrepreneurial orientation contributes to the establishment and strengthening of the brand. By consistently delivering quality products, being innovative, and engaging with the community, SMEs can build a strong brand reputation. A reputable brand attracts customers and can command premium prices for products (Kianto et al., 2019).

Conclusively, EO in the sports goods manufacturing sector of Pakistan, particularly among SMEs, fosters innovation, market exploration, agility, risk-taking, customer focus, brand building, efficient resource utilization, and long-term sustainability. By embracing entrepreneurial principles, SMEs can position themselves as dynamic, competitive players in the global sports goods market.

2.6.4 Entrepreneurial Orientation and SMEs Performance

Like Total Quality Management (TQM), Entrepreneurial Orientation (EO) is a crucial strategic concept that aims to improve a SME's performance (Asad et al., 2023; Ta'Amnha et al., 2023). EO considers how businesses run, take chances to create new products by pursuing new prospects, and maintain competitiveness (Ali et al., 2020; Anand et al., 2021). According to the reviewed literature many researchers have examined EO in relation with SME's performance and found positive relationship (Brouthers et al., 2015; Alembummah, 2015; Asad et al., 2023). Whereas, according to Sahoo & Yadav (2017) mentioned that higher level of EO have indirect effect through TQM on SME's performance. Number of studies used different mediating variables to support the EO impact on SME's performance (Imran et al., 2018; Asemokha et al., 2019). Isichei et al. (2020), mentioned that firm infrastructure also has a mediating role in EO relation with SME's performance.

Asemokha et al. (2019), suggested that Business Model Innovation (BMI) positively and meaningfully mediate influence on the relation of EO in terms of SME's performance at the international level. Furthermore, it is found as a complement to the mediation of overall level of quality between EO and performance of SMEs (Imran et al., 2018). According to Sahoo and Yadav (2017) SME's performance through adoption of quality management strategies directly affected by the dominant position of EO, whereas it also reflects in the exiting literature that in some case EO does not have direct impact. Strategic implementation of TQM reflects an improved and better level of SME's performance. So, many firms applying EO at top level have ideal role in adoption of TQM at strategy layer of the business.

On the other hand, not all areas, or elements of EO have a positive effect over SME's performance. However, only two areas or elements of EO (innovativeness and proactiveness) have significant relationships with SME Performance (Isichei et al., 2020). However, risk-taking showed no significant effect on performance (Isichei et al., 2020). Proactivity has a favorable association with level of sales, sales growth, and investment return. Prominent levels of innovation also demonstrate a significant and positive connection with sales growth. Proactivity and competitive aggression might often have an opposite relationship with SME's performance under various conditions (Aftab et al., 2022). Innovative thinking and proactive behaviour were discovered to be crucial in predicting success or SME's performance (Alembumamah, 2015). Except for innovativeness, each area or element of EO along with marketplace has a positive influence on SME's performance alignment. EO has a strong correlation with SME's performance, and businesses gain more from EO (Asad et al., 2018; Asad et al., 2020). Others asserted and provided evidence for a favorable association between SME's performance and EO (Al-Dhaafri et al., 2013; Asemokha et al., 2019). Research in past suggestions a negative correlation between the two halberds which are EO and SME's performance (Ibrahim et al., 2016).

Despite extensive research in the domain of EO and SME's performance, there are still limited resources on how these areas benefit SMEs comprehensively (Asad et al., 2022). As a result, previous findings are not shown as unanimously same, and having difference of opinion in outcomes by researchers as mentioned in the literature above. Therefore, it is critical to figure out what additional elements are at the bottom of these divisive outcomes. Moreover, it is clear from many of the findings that SME's performance becomes influenced by the areas or elements of EO, which will be investigated further in this study by including a variable as to see the effect of its

moderation. Consequently, the relationship between EO and SME's performance is hypothesized as follows:

H₂: There is a significant relationship between EO and SME's performance.

2.7 Knowledge Management Capabilities

Along with Total Quality Management (TQM) and Entrepreneurial Orientation (EO) it is also especially important to know how SME manage and effectively use the knowledge to obtain sustainable performance. Different approaches and viewpoints have been used to define Knowledge Management Capabilities (KMC). KMC is considered as core to get refined return in shape of performance. That is why several SMEs agreed to implement KMC as perceiving compulsory for desire outcome. Previous studies highlighted the role of KMC application to improve performance (Mardania et al., 2018; Hassan & Raziq, 2019). Although thousands of articles published on KMC since 2000, but KMC is yet to find a broader place within other information science concern (Agarwal & Islam, 2020). KMC has influence on academia's and professional as well (Hassan & Raziq, 2019). Researchers explore four structures of KMC like efficient-effective, effective-inefficient, efficient-ineffective, and inefficient-ineffective in SMEs (Hassan & Raziq, 2019).

Notwithstanding, considered as "KMC gurus" not any specific names listed as in TQM, but some academic scientists have high influence in explaining the ways to managing capabilities of knowledge named as Chris Argyris and Peter Drucker as most famous. Hence, KMC theoretically contributed to this area of knowledge management (Nghah & Bontis, 2016; Wang et al., 2017; Yao et al., 2020). Similarly, it also showed concerns about the emergent styles of learning and necessity of knowledge respectively as a

resource of intended performance. Davenport in 1993 also highlighted the process for managing the gathered information with consideration as the principal element for SME performance. Therefore, considering the above statements now-a-days people have a better understanding position the facts about the KMC, which is why they can take those academicians as “KMC gurus.”

Historically, brain tracing can be done from knowledge workforce and by interactively reacting within working people will enhance it. To get the performance at optimal level management of knowledge is essential in the right direction (Yao et al., 2020). Therefore, examination of the way knowledge is extending becomes crucial and sensitive area to cater. Although the resource of getting knowledge may vary from business-to-business, all-in-all it covers every aspect of documented knowledge. To create an effective knowledge, contain creativity in conversion process of tacit to explicit knowledge (Handayani, 2020). To authenticate this fact in 2006 Kamtsiou exposed that the key to creating a valid knowledge based on the way it is converting the tacit into explicit and their interaction to combined both to make it more useful (Anand et al., 2021). Therefore, based on literature, KMC can be defined as a dynamism of combining of processes, which includes identification of knowledge, acquisition of proper knowledge, sharing of acquired knowledge as well as the proper application of ascertained knowledge by all SME’s members to achieve the optimal level performance (Asif et al., 2021). Thus, Knowledge management has become a factor that may ensure the success of the SMEs and the continuity of their businesses (Asif et al., 2021).

Considering the importance of KMC towards innovation in the theory of Leonder in 1995 proved the way as openness in innovating behavior assures that the core ability of KMC does not transform in rigidity. According to Asif et al. (2019), openness in

innovation needs to be considered in different areas that also link to different knowledge management outcomes. It also mentioned in the literature that the adopting preference of inside-out and outside-in strategy based on SME orientation with reference to high or low technology focused (Khalil et al., 2018). Welcoming patterns for innovative thinking is critical to survive in the competitive market as critical success factor (Moeuf et al., 2020). Therefore, knowledge is considered as the heart of open innovation. However, the innovation in KMC with SME learning can influence the SMEs' technological capabilities (Pratono et al., 2018; Moeuf et al., 2020). Knowledge Management Capabilities (KMC) are crucial for sports goods manufacturing SMEs in Pakistan for several reasons.

Product Innovation: KMC allows SMEs to tap into collective knowledge to innovate new sports products. Understanding market trends, materials science, and manufacturing techniques can lead to the development of innovative and competitive sports equipment, giving SMEs an edge in the market (Pratono et al., 2018).

Quality Improvement: Knowledge management enables continuous learning from both successes and failures. By analyzing customer feedback and performance data, SMEs can identify areas for quality improvement. This leads to the production of high-quality sports goods, enhancing customer satisfaction and brand reputation (Yao et al., 2020).

Supply Chain Optimization: Effective knowledge management aids with information technology in terms of block-chain, useful in optimizing the supply chain. SMEs can gather and analyze data related to suppliers, production processes, and organization, enabling efficient inventory management and reducing operational costs (Mardani et al., 2018).

Market Intelligence: Keeping track of market trends and consumer preferences is vital. Knowledge management systems can collect and analyze data from various sources, providing insights into market demands. SMEs can use this intelligence to make informed decisions about product development and marketing strategies (Peters et al., 2023).

Production Processes Management: Knowledge about efficient manufacturing processes and best practices can enhance operational efficiency. SMEs can implement manufacturing principles and other process improvements, reducing waste, minimizing costs, and increasing productivity (Centobelli et al., 2019).

Regulatory Compliance: Knowledge management helps SMEs stay updated with regulations and standards related to sports equipment manufacturing. Ensuring compliance with international standards enhances product quality and facilitates entry into global markets (Suharyanto & Lestari 2021).

Supplier Relationships: Effective knowledge sharing with suppliers fosters stronger partnerships. SMEs can collaborate with suppliers to innovate, improve product components, and negotiate better deals, ensuring a steady supply of high-quality raw materials (Asad et al., 2021).

Customer Engagement: Knowledge management allows SMEs to personalize customer experience. By understanding individual customer preferences and purchase history, SMEs can tailor marketing efforts and offer customized products, enhancing customer engagement and loyalty (Kanaan et al., 2024).

Employee Development and Creativity: KMC encourages a culture of continuous learning among employees. Training programs, access to industry knowledge, and skill

development initiatives can enhance the expertise of the workforce, leading to improved product quality and innovation (Imran et al., 2018).

Brand Reputation: Consistently delivering high-quality products enhances the brand reputation of SMEs. Positive customer experiences, coupled with innovative products, strengthen the brand's image, fostering trust and loyalty among customers and stakeholders (Novansa & Ali, 2017).

Risk Management: Knowledge management systems enable SMEs to assess risks and devise strategies to mitigate them. Whether its market fluctuations, supply chain disruptions, or regulatory changes, informed decision-making based on accumulated knowledge can help SMEs navigate uncertainties effectively (Peters et al., 2023).

In summary, KMC empower sports goods manufacturing SMEs in Pakistan to innovate, improve product quality, optimize operations, stay informed about market trends, enhance customer engagement, foster supplier relationships, develop employees' skills, build brand reputation, and effectively manage risks. These capabilities are essential for SMEs to compete effectively, grow sustainably, and establish a strong presence in the competitive global sports goods market (Pedro et al., 2018; Asad et al., 2023; Peters et al., 2023).

Additionally, KMC also plays a mediating role towards improved performance. Small and Sage in 2006 defined knowledge as the intersection of information with distinct types of experiences and reflections. KMC also stimulates business model innovation as well as radical innovation (Hassan & Raziq, 2019). SMEs with high risk-taking tolerance effectively used external KMC whereas internal KMC only effective for low risk-taking tolerance SMEs (Asad et al., 2021). Hence, KMC is a conscious strategy

and ability of attainment with specific information to the appropriate individuals at a suitable time to use their knowledge for performance improvement by appreciating its sharing with others. Knowledge acquisition, creating new knowledge, converting knowledge to use, applying knowledge, knowledge sharing, and means to protect it all are the parts of the KMC concept (Ha & Lo, 2018; Mardani et al., 2018). Only knowledge acquisition and protection had a major positive relation with performance among the various parts of KMC, whereas converting and applying phenomenon did not (Ha & Lo, 2018). However, knowledge sharing is essential especially in a SME with scarce resources (Ngah & Ibrahim, 2008). According to Günsel et al. (2019), to share the knowledge by effectively using transferred technical skills treating as a partner with the small and medium level SMEs of countries under development stage.

Knowledge in basic terms is bi-dimensional, the one is tacit which is intrinsic (Ngah et al., 2016; Yao et al., 2020). Knowledge in forms of documentation named as explicit (Hamdani, 2018; Handayani, 2020; Anand et al., 2021). In 1995 two researchers named Nonaka and other Takeuchi contributed to the nature of knowledge management theory focusing on the fact that tacit makes SME competitive. The knowledge sharing culture positively reflecting the tacit type of knowledge, whereas system for managing information technology effecting explicit type in positive direction and both have positive significant role in developing innovative capacities of SMEs (Yao et al., 2020). Moreover, to share the documented knowledge is treated as a contingency which has strong link with technically providing support in a formal way (Günsel et al., 2019). Thus, managing such vital economic resources is essential for improved performance. Knowledge Management is an inclusive process of gathering knowledge, processing and then utilizing it to improve SME productivity and seek solutions to crucial problems (Kanaan et al., 2024).

2.7.1 Knowledge Management Capabilities and SME's Performance

Considering literature so far reviewed scarcity found in previous experiential studies that investigated the role of managing knowledge in proper way to improve. SME's knowledge is one of its most important resources that can contribute to a distinctive innovative perspective as an Entrepreneurial Orientation (EO) that leads to competitive edge advantage (Asad et al., 2021). As a result, the Knowledge Based view (KBV) supports the nature and position of knowledge resources in producing SME innovation and competitive advantage (Kanaan et al., 2024). For clarifying the link of KMC with SME performance, preceding research tends to provide base for evidenced an encouraging meaningful relationship between the processes of KMC and SME performance (Byukusenge et al., 2017; Mardani et al., 2018). KMC and dynamic technological advancement have positive role with innovation to enhance the SME performance (Pedro et al., 2018).

Moreover, there are four dimensions of KMCs named knowledge identification, knowledge acquisition, and knowledge sharing and knowledge application. Among these four, acquiring knowledge and protecting it has significance with SME performance positively, but its converting and application aspect not reflected in such way (Ha & Lo, 2018). However, studies found various relationships and impacts of KMC on SMEs performance (Centobelli et al., 2019; Ghonim et al., 2020) Knowledge is considered the SME's most valuable resource for suitability in the era of stiff competition based on the bank of information and knowledgeable people SMEs have in their workforce as disclosed by the International Academic Publisher.

Additionally, researchers also used mediators to support the impact of KMC on SME performance. Ghonim et al. (2019), examine the effects of KMC and taking risk in

decision making context with SME performance in which negative innovation outcomes were chosen as a mediating variable (Zia, 2020). Furthermore, strategic move of businesses is conceptually having 6 segments in comparison with the 4 factors of balance score card technique and observing in both financially and non-financially oriented dynamism (Pour & Asarian, 2019). KMC mechanisms have high SME performance and technical mechanisms have more predictor role on SME performance (Pour & Asarian, 2019). KMC is also said to be the core component in performance of SMEs associated with innovativeness (Albassami et al., 2019).

Although a reasonable number of researchers investigated the relationship between KMC and SME performance (Asad et al., 2024). The results of past findings are not all the same, and experts have differing opinions on outcomes, as noted in the literature so far done. Therefore, determining what additional factors are at the root of these polarizing outcomes is crucial. Several findings indicate that KMC influence is significant on SME performance. Because of inconsistent findings, there is a need to further refine the link by including and evaluating a moderating variable to further understand the relationship of KMC with SME performance (Byukusenge et al., 2017).

Therefore, the development of high-profile technological hubs like Silicon Valley, Cambridge, and Waterloo creates employment opportunities with the use of knowledge in an effective manner. Through processes of knowledge management SMEs get improved performance in the SME sector of developed as well as developing countries like Pakistan (Albassami et al., 2019; Hassan & Raziq, 2019). As a result, methods of knowledge management have benefits for both the public and private sector industry along with business owners' personal value and financial gains (Zia, 2020).

Consequently, based on the above literature review, the hypothesizing for the relationship between KMC and SME performance is as follows:

H₃: There is a significant relationship between KMC and SME's performance.

2.8 Information Technology

In 1905 Max Weber gave a theory based on bureaucratic style and Fredrick Taylor gave theory explanation with process of management done scientifically in 1909, both reflecting the level of managers focusing on internally generated resources as well as divine cultural aspects (Ndabako et al., 2019; Li et al., 2022). Based on contingent approach, SMEs have strategies aligned with various type of contingencies including technological, environmental and scale of business can perform at optimal level catering the situations. According to contingency theory, SME performs optimally when their structure is targeted to face contingencies imposed by size, technology, and environment in which the SME operates (Li et al., 2022). The SMEs' alignment of their strategies with prevailing internally and externally environmental conditions is the crust contingencies (Ndabako et al., 2019; Nair et al., 2021). The theory assumes that for an SME it could be crucial to recognize what happens in the external environment for SME performance improvisation in attaining the intended profitability (Abubakar et al., 2019). In theoretical perspectives contingency variables are useful in SME performance improvement in an SME. So, business SMEs are required to pay attention to getting capable themselves to cope with contingent issues rather than only in resource improvement, acquisition, and development.

Therefore, SME may by applying a contingency approach at strategic level can get edge in meeting competition prevailing in the surroundings. Hence, contingency theory

states how an SME behaves with contingent factors to survive. Additionally, it was also indicated that several technological variable quantities could be considered as moderators in the connection of independent variables with the SME performance as dependent variable (Pratono, 2018; Ndabako et al., 2019; Gomezel & Alesksic, 2020). By using existing data, this study expanded the body of literature in relation to Total Quality Management (TQM), Entrepreneurial Orientation (EO) and Knowledge Management Capabilities (KMC) components as key determinants of SME performance. Additionally, this study is anticipated to advance the literature by using Information Technology (IT) plays a moderation on the associated link among TQM, EO, KMC, on how SMEs performed under assumption of contingency theory. Therefore, IT takes contingent factor for better SME performance in relation with variables like TQM, EO and KMC. IT role as a moderator on improving SME performance also been accredited in prior literature (Ju et al., 2013; Pratono, 2018; Ndabako et al., 2019; Gomezel & Alesksic, 2020).

IT by obsoleting the traditionally used technology provides an edge to the SMEs those using emergent technologies, the SMEs using latest technologies for knowledge management and innovation, taking edge on others to be competitively participate (Gomezel & Alesksic, 2020). Abruptly, speed in technological advancement outdated the previous technical systems in the market and accelerating the soft innovativeness and defer a need for asset replacement due to advent in production system of services (Ju et al., 2013; Khan et al., 2021). Consider IT as a dynamic of outside environmental condition taken as moderator towards the SME performance of SMEs (Gomezel & Aleksić, 2020). IT as a principal factor raised the frequency of changing business models because of advancement in technology over a fleeting time-period. Previously, studies ignored the moderation of IT with given set of variables in this study. Perhaps,

pays more focus on competition and marketplace. (Abidemi et al., 2017; Ndabako et al., 2019; Li et al., 2022). Therefore, in current work here IT is considered as moderator with the other variables as TQM, EO, and KMC to see the impact on the way and direction of the performing path.

Technology by using various platforms of social related medium enhances the SMEs' ability to improve their services to the wide customer base by gathering and processing the data related to them (Li et al., 2022). It also dynamically polishes capability of business in different dimensions including developing the product, strategies to innovate and market it, with other options of expansion by integration and avail edge in stiff competition (Laudon & Laudon, 2020). With the obsolence of old technology and the advent of new one helping innovativeness as EO element make the SME able to inculcate value in the product (Abidemi et al., 2017).

Hence, the moderation impact of IT highlighted the significance of technological advancement which positively impacts on performance (Abidemi et al., 2017; Ndabako et al., 2019). IT also provides a guided path towards the successful accomplishment of objectives by the combination of other variables of this study like TQM, EO and KMC over SME performance. Therefore, due to the variations in the findings, IT is expected to play a crucial role to moderate and improve performance ability of SME in relation with other dependents in the study. SMEs with more inclination towards technological implementation have brighter and higher probability of success in SME performance by capturing and enhancing customer base.

By evaluating the previous related publication, it is revealed that IT supports the SME in gaining edge on competitors with creativeness, innovativeness and betterment in product usefulness and quality (Laudon & Laudon, 2020). It is also mentioned in the

results of prior studies that IT with respect to SME performance acting positively and negatively in both directions (Ju et al., 2013; Pratono, 2018). SMEs that implement and monitors TQM factors, EO areas and KMC strategies potentially in a position to satisfy customers at a greater level by capitalizing the benefits of modern day's technological advancements.

2.8.1 Information Technology as Moderator

The factor responsible for affecting the dependency of a variable over the other independent variable is considered as moderator. Moderation of a variable is used for explaining the relational impact of variables having independence on dependent variables. Studies supported the moderation effect of Information Technology (IT) based on contingency theory (CT) can be aligned with the relationship of TQM, EO and KMC on SME performance (Mahmood & Hanafi, 2013; Ju et al., 2013; Pratono, 2016; Wardi et al., 2018). Some of the research observes the contribution of IT in terms of moderation as a factor of external environment on SME performance (Ndabako et al., 2019; Gomezel & Aleksić, 2020). Furthermore, the process to take the decisions at managerial level is influenced by IT with respect to the opportunistic paradigm. However, in a study the collaborative impact to innovation, risk orientation and intense competition behaving positively (Salisu & Bakar, 2019; Sahi et al., 2019).

2.8.2 Information Technology as Moderator in Between Total Quality Management and SME Performance

To enhance understanding in the variation of prevailing conditions including management of quality at broader level in totality is highly in need of contingent factors like Information Technology (IT). IT directed the SME towards the path where the

collection of data useful to define the way of quality serving by technology with insight core significance (Abidemi et al., 2017). It has also proven to be successful in combination with added variables like TQM (Ndabako et al., 2019). SMEs can improve their service qualitatively by aligning their strategies for quality control with the environment of technology and taking advantage of competition (Abidemi et al., 2017). IT moderates in terms of increases the SME performance quality of dependent factors on other resources (Ndabako et al., 2019). Similarly, IT reflects the strength of impacting the SME performance in both positive side as well as negative dimension. Therefore, the proposed hypothesis is that the IT moderates the relation of TQM and SME performance (Asad et al., 2024) and hypothesized is as follows.

H₄: IT moderates the relationship between TQM and SME's performance.

2.8.3 Information Technology as Moderator In between Entrepreneurial Orientation and SME performance

The study by Pratono (2018) is not confined just to show the positivity of taking risk as a dimension of Entrepreneurial Orientation (EO) upon SME performance of the SME but reflecting more effectively from low to high technologically turbulent environment. To survive in the environment which has information management related to technology in both low and high intensity have numerous variations with respect to flow and risk of work on growth of small SME to innovate (Gomezel & Aleksić, 2020; Sulaiman et al., 2024). Higher notch of Information Technology (IT) representing positively towards SME performance gives strength to the link with outside-in through innovation and gives outside-in and inside-out procedural reflection in positive direction (Pratono et al., 2018). Innovativeness is another area in EO, and radical innovation is the type of it. IT has a positive interactive effect on radical innovativeness

(Laudon & Laudon, 2020) which enhances SME performance. It also mentioned that innovation activity of SMEs is positively related to IT (Asad et al., 2021). Another study also underlines the role of IT as to a moderating impact in the relational aspects between EO and SME performance (Crespo et al., 2021).

However, studies also showed that information at highly elevated levels associated with technology does not accelerate the intensive relation of EO with in-out processes to achieve SME performance objective (Ju et al., 2013). Studies mentioned that there is a shaking significant moderating effect of IT on entrepreneurial proclivity of SMEs performance (Wardi et al., 2018; Crespo et al., 2021). The moderate relationship of IT with EO has limited support based on the reviewed literature and has mixed results. Therefore, this study proposed a hypothesis that IT has a moderating role on the relationship of EO with the SME performance (Wardi et al., 2018) and hypothesized is as follows.

H₅: IT moderates the relationship between EO and SME's performance.

2.8.4 Information Technology as Moderator In between Knowledge Management Capabilities and SME performance

Knowledge Management Capabilities (KMC) also get moderated by Information Technology (IT) towards SME performance. KMC has been used to getting above level performance in SMEs since the 1990s. Whereas implementing KMC in SMEs is its infancy stage (Saqib et al., 2017). In one of the studies identify a stronger impact of competence on knowledge generation than in knowledge dissemination and IT moderates the relationship between competence and knowledge generation (Jardim et al., 2020). In 2004 two researchers, Sher and Lee, suggested that management of both

endogenous and exogenous knowledge through technology-based applications significantly enhance capabilities which lead to improved SME performance. KMC has a direct positive and significant relation with technology (Li et al., 2022). KMC adding its contribution in helping SMEs to perform well and as a moderating side technological aspects principally consider as one of the factors (Saqib et al., 2017). Therefore, applying technology in KMC practices has the potential to enhance SME performance.

On the other hand, knowledge related to technology has a positive effect on subjective measures of SME performance (Saqib et al., 2017). A study conducted by Akram et al. (2018), assumed that SME's technological capabilities significantly impacted towards SME performance for getting sustainable edge in competition. However, sometimes KMC also partially have a mediating role on the SME performance outcomes of the SME (Akram et al., 2018). Considering the literature so far has been reviewed, the moderating association of IT on the relationship of KMC with performance of the SME needs to be considered for further research to make it well established and mature with other set of independent variables. It has varied outcomes which are in their infancy stage. Therefore, the hypothesis proposed in this study is that IT has a role in moderating the relationship of KMC and SME performance (Jardim et al., 2020) and hypothesized is as follows.

H₆: IT moderates the relationship between KMC and SME's performance.

However, trusting on literature so far reviewed and my concern knowledge, research indicates the scare in demonstrating a direct connection between the moderating impact of IT, EO, and KMC as mentioned in the conceptual framework with the SME performance. This demonstrates that there is a significant research gap in literature for which this study amid to fill it. The moderating influence of IT on the link between

TQM, EO, and KMC on the SME performance of SMEs in Pakistan, notably in the sports industry, must thus be empirically evaluated. Laudon and Laudon (2020), in their research findings report that under perception of higher IT, SMEs use more flexible approaches for innovation to take care of higher external pressure. Consequently, the study proposes that IT has moderating impact on the relationship of TQM, EO, and KMC on SME performance which evaluated in this study with the statistical techniques to support the hypothesis of the study.

2.9 The Underpinning Theory

The underpinning theory in research serves as the foundational framework or set of principles that direct and shape a study. It offers a theoretical perspective for examining research problems, influencing methodology, data collection, and analysis. This framework anchors the research in existing knowledge, enabling researchers to expand upon or critically assess established theories. By integrating an underpinning theory, researchers strengthen the study's rigor, coherence, and relevance, providing a systematic approach to investigating complex issues.

2.9.1 Resource-Based View

In management literature, the SME's Resource Based View (RBV) has been regarded as one of the most rapidly increasing research areas in recent decades. Wernerfelt was the first to propose the RBV theory in 1984, where he suggested that the SME's success is revealed by inside resources. These owned possessions can be both intangible and tangible assets (Asad et al., 2024). The RBV views SME as a collection of resources, with many resources having varying degrees of relevance in terms of adding value to a SME (Barney, 1991). As a result, the SME's uncommon, precious, and incomparable

resources are the primary competitive advantage for achieving exceptional SME performance. These forms of resources are referred to as the SME's intangible assets.

Furthermore, the emphasis on RBV theory is the match between the SME's skills and the possibilities offered. Therefore, the RBV mechanism considers making maximum use of the SME's existing resources to develop core capabilities for gaining and maintaining competitive advantage (Asad et al., 2021). As a result, if the SME considers various aspects such as internal strategy, access to valuable information resources, and people's talents, competitors will find it difficult to obtain the same level of competitive advantage.

Therefore, to attain the desired competitive scenario, SME needs to develop a relationship between internal capabilities and the external environment. The impact of RBV on the SME's competitive advantage can be seen from the perspective that RBV emphasizes the importance of resources in sustaining and generating competitive advantage. Thus, it should improve the mechanism of selecting the resources with enormous potential value (Asad et al., 2021). Additionally, the SME should be aware of its internal and external surroundings and competencies to plan and build the most effective and appropriate action plans.

Moreover, the SME's capabilities can help to raise the importance of available resources and aid in their successful use (Asad et al., 2021). RBV believes that the internal resources of SMEs have a significant impact on SME performance. This study has a goal to look at the effect and the relation among Total Quality Management (TQM), Entrepreneurial Orientation (EO), and Knowledge Management Capabilities (KMC) on the SME performance as these are also considering a SME's resources towards SME performance (Ta'Amnha et al., 2023). While reviewing literature comprehensively, the

variables used in this study have a theoretical foundation by the RBV. As an example, TQM is regarded as one of the most positively important resources and a critical factor of competitive advantage (Sulaiman, 2023). The other variable, EO is considered also as a unique intangible resource of competitive advantage. Many past studies have stated that EO is the most critical resource for a SME to obtain long-term competitive advantages, and that there is a positive link between SME performance and EO (Pratono et al., 2019).

2.9.1.1 Total Quality Management (TQM) as Internal Resource

Valuable: Implementing TQM principles, such as customer focus, continuous improvement, and employee involvement, can enhance the quality of sports training, facilities, and overall fan experience in Pakistan. This is a valuable resource as it directly impacts customer satisfaction and loyalty.

Rare: Organizations that effectively implement TQM practices and sustain an elevated level of quality are rare, especially in a developing sports market like Pakistan.

Difficult to Imitate: Building a TQM culture requires time, effort, and a committed workforce. Competitors may find it difficult to replicate the exact quality standards and organizational culture.

Non-Substitutable: Quality management practices cannot be substituted by other resources. Quality impacts the reputation and brand image of sports organizations.

2.9.1.2 Entrepreneurial Orientation (EO) as Internal Resource

Valuable: EO encourages innovation, proactive decision-making, and risk-taking. In the sports sector, an entrepreneurial approach can lead to the development of new sports events, fan engagement strategies, and revenue streams.

Rare: Not all sports organizations have an elevated level of EO. Those that do are rare, giving them a competitive edge in identifying and capitalizing on new opportunities.

Difficult to Imitate: Entrepreneurial mindset is often deeply ingrained in the organizational culture. Competitors might find it challenging to imitate the risk-taking culture and innovation strategies.

2.9.1.3 Knowledge Management Capabilities (KMC) as Internal Resource

Valuable: Effective KMC allows sports organizations to leverage knowledge about players, fans, market trends, and best practices. This knowledge is invaluable for strategic decision-making and fan engagement strategies.

Rare: Organizations that excel in KMC, especially in a specific sports context, are rare. Comprehensive knowledge about local players, fan behaviors, and market nuances is not common.

Difficult to Imitate: Building a knowledge management system requires both technological infrastructure and a learning culture within the organization. Competitors may find it difficult to replicate the depth and breadth of knowledge held by a well-established system.

Non-Substitutable: Knowledge management capabilities are unique to each organization and cannot be easily substituted. They provide a foundation for informed decision-making and innovation.

Therefore, applying RBV theory to TQM, EO, and KMC in the sports sector of Pakistan emphasizes the strategic importance of these internal resources (Ali et al., 2020; Anand et al., 2021). Organizations that effectively implement TQM practices, embrace an entrepreneurial mindset, and develop robust knowledge management capabilities can gain a sustainable competitive advantage, enhancing their SME performance and positioning in the sports industry. This will expectedly support in improving the prevailing conditions in the progress of sports goods manufacturing sector in Pakistan. These resources are valuable, rare, difficult to imitate, and non-substitutable, making them key drivers of success in the dynamic and competitive sports market of Pakistan. Additionally, TQM and EO have been regarded as a basis of competitive advantage (Barney, 1986). Additionally, Baporikar (2020), pointed out that TQM and EO have stranded out in response to the competitive push. In summary, the above-mentioned arguments revealed that the variables used in this study could be considered as resources of the SME competitive advantages, therefore, justifies the use of RBV as one of the underpinning theories in this study to support the TQM and EO variables (Aftab et al., 2022). Hence, by the effective use of resources, SMEs can sustain for a long time to the point that it can protect its resources from duplication, transfer, or replacement which leads towards the positive performance in SMEs. Along with TQM and EO cannot ignore the importance of ascertained knowledge and its management capabilities in the era of information knowledge are also considered as vital resource of SME that is why also have strong link with RBV (Zia, 2020).

2.10 Supporting Theory

A supporting theory in research refers to supplementary theoretical frameworks or concepts that enhance and complement the primary underpinning theory. These theories add context, depth, and detail to the study, addressing specific facets of the research problem. Supporting theories can fill gaps in the main theoretical framework, present alternative viewpoints, or reinforce the study's overall credibility. By integrating supporting theories, researchers can better analyze complex phenomena and achieve a more thorough understanding of the topic under investigation.

2.10.1 Contingency Theory

The Contingency Theory (CT) is a behavioral theory that states there is no one-size-fits-all approach to managing businesses or making decisions. Most academics in the literature on CT argue that SME performance is a function of a SME's relationship with its external environment. (Asad et al., 2024). It is used to explain how enterprises or businesses should be managed about the external factor which the environment intervenes. Numerous contingency plans, including business strategies, have been devised.

Therefore, the contingency approach emphasizes the strategic need for flexible responses. The perspective is based on two key assumptions: (i) there is no proper strategy or structure, and (ii) a given strategy/structure will not possess the same effectiveness under various environments or SME-specific conditions (Galbraith, 1973). CT takes businesses to be organic processes. Therefore, there is a connection of dependency inside and across SME's many subsystems as well as between it and the environment (Peter et al., 2023). CT also disagrees with the idea of management as a

universal application. According to this theory, businesses should strategize, specify their aims and objectives, and create policies in consideration of the most recent technological developments. The best SME performance will be attained by businesses that align their actions and choices with the requirements of their surroundings (Majali et al., 2022). Businesses must become more aware of their surroundings and develop new competencies and skills to meet environmental demands (Chen & Ong, 2016; Suharyanto & Lestari, 2021). The environment's characteristics and how much the SME takes into consideration that the environment affects SME performance (Peter et al., 2023; Asad et al., 2023).

Therefore, currently SMEs suggested examining and carefully monitoring their internal and external environments and responding to the fast-changing business working environment. (Lee & Miller, 1996). So, if a SME has resources with qualities such as Valuable, Rare, Inimitable and Non-substitutable (VRIN) but ignores the environment, its competitive advantage may be short-lived. Finally, it may be concluded, based on this theoretical foundation, that SME that control technological influence by building, reorganizing, and reconfiguring their VRIN resources can gain a competing edge.

Therefore, when it comes to CT, there are three basic forms of factors that can be used as moderators to influence SME performance or even other factors that are related to SMEs performance namely market, competition and Information Technology (IT) have impact as moderators on SMEs performance (Asad et al., 2021; Ta'Amnha et al., 2024). Based on the foregoing, this study employs CT as a supporting hypothesis, implying that business SMEs suggested adopting IT as moderator and capitalizing on prospective opportunities. This can be accomplished by making necessary adjustments, integrating,

and reconfiguring SME resources to match the needs of the advent of technology for improved SME performance.

2.11 Research Framework

Based on the reflections of so far literature has been reviewed so far, and to advance the understanding of the way to develop SMEs in achieving better or improved SME performance a research framework is therefore developed. The research framework has been built to understand how to improve the SME performance of SMEs focusing on sports sector in Pakistan. On the basis of the literature reviewed, it can be said that Total Quality Management (TQM), Entrepreneurial Orientation (EO) and Knowledge Management Capabilities (KMC) qualify as predictors or independent variables of SME performance (Kwamega et al., 2015; Asad et al., 2018; Anon, 2018; Albassami et al., 2019; Laudon & Laudon, 2020). To the best of author's knowledge considering the reviewed literature TQM, EO and KMC have not previously been studied in a single research framework. Therefore, these three variables are integrated into the research framework in this study. Moreover, this research is intended to examine the moderation of Information Technology (IT) because of the inconsistencies in the results of the previous based on the impact of TQM, EO and KMC on SME performance. Therefore, due to the various gaps and inconsistent results among the variables gives motivation for more investigation into the relationships among TQM, EO, KMC, IT and SME performance.

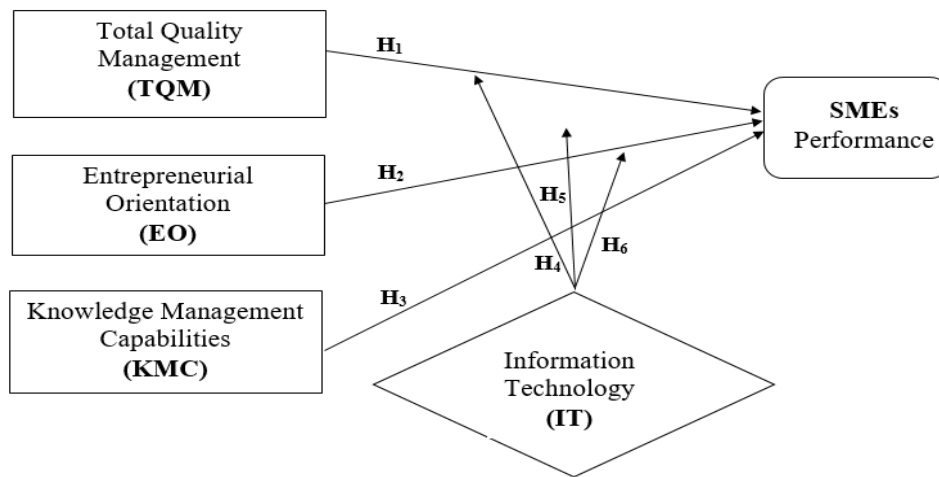


Figure 2.2

Research Framework

SME Resources and the Relationship with Small and Medium Enterprises' Performance in Pakistan: The Moderating role of Information Technology

In the above figure 2.2 the research framework is showing two types of relationships, the direct relationships between TQM, EO, KMC on SMEs performance (Anon, 2018; Albassami et al., 2019) and the moderating role of IT on the relationship of independent and dependent variables (Pratono, 2018; Ndabako et al., 2019; Jardim et al., 2020). Many researchers argued the success or failure, positive or negative, direct, or indirect and significant or insignificant impacts of the independent variables using in the framework on SME performance. Based on the above research framework this study checked the following hypothesis with the proper tests.

H₁: There is a significant relationship between Total Quality Management (TQM) and SME performance.

H₂: There is a significant relationship between Entrepreneurial Orientation (EO) and SME performance.

H₃: There is a significant relationship between Knowledge Management Capabilities (KMC) and SME performance.

H₄: Information Technology (IT) moderates the relationship between Total Quality Management (TQM) and SME performance.

H₅: Information Technology (IT) moderates the relationship between Entrepreneurial Orientation (EO) and SME performance.

H₆: Information Technology (IT) moderates the relationship between Knowledge Management Capabilities (KMC) and SME performance.

2.12 Chapter Summary

In conclusion, this chapter extensively delves into existing academic literature, aiming to pinpoint gaps and discern relationships among dependent, independent, and moderating variables within the context of sports goods manufacturing SMEs in Pakistan. The focus of this sector-specific research centers on understanding SME performance by proposing a model wherein Total Quality Management (TQM), Entrepreneurial Orientation (EO), and Knowledge Management Capabilities (KMC) serve as primary determinants. To elucidate the intricate connections among these independent variables, the framework introduces Information Technology (IT) as a moderating factor. The study employs statistical analysis to explore the causal relationships within this model. Notably, previous research indicates inconsistent links between dependent and independent variables, necessitating the introduction of a moderator for a more nuanced investigation. Additionally, there has been a scarcity of research concerning SME performance, particularly in the dynamic landscape of Pakistan's sports sector, considering the specified variables. Consequently, this chapter underscores the imperative need to probe these variables while considering the moderating influence of IT on SME performance.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

To achieve the objective of this research, this section of thesis presented the details of research methodology which applied in this study. Since the context of the study is Pakistan's SMEs of sport goods manufacturing sector and to evaluate the impacts and use statistical calculations and hypothesis testing to understand and anticipate the nature of association between Total Quality Management (TQM), Entrepreneurial orientation (EO) and Knowledge Management Capabilities (KMC) with the SME performance followed by quantitative approach (Anand et al., 2021). This chapter covered the framework for research, design of research study, all variables operational definitions, selection of sampling design, collection procedure for research data and lastly focus on the approach for data analysis and the techniques used for this purpose named as Partial Least Square method of Structural Equation Modelling (PLS-SEM).

3.2 Research Design

Research design prepared by the author in line with the research flow. It can be characterized as a principal approach that deals with specifying the methods as well as measures which are adopted for data collection and analysis pertaining to the targeted information. However, several logical decision-making activities are a part of research design. Making decisions about the study's objectives (e.g., exploratory, hypothetical testing, descriptive, and/or case base studies), the degree of interference by the researcher, the set-up of the study, the study's time, and the analysis unit are among these activities (Sekaran & Bougie, 2010). Studies can use and apply any of the research

among various available operational methods as per the appropriateness of the situation. In doing research we can apply casual or descriptive one as suitable according to the objective (Haris et al., 2021). Collection of data process includes several methods of data collection namely experimental, survey/questionnaire based, interviews (Novansa & Ali, 2017). Data can be collected through secondary resource data, and simple observation methods.

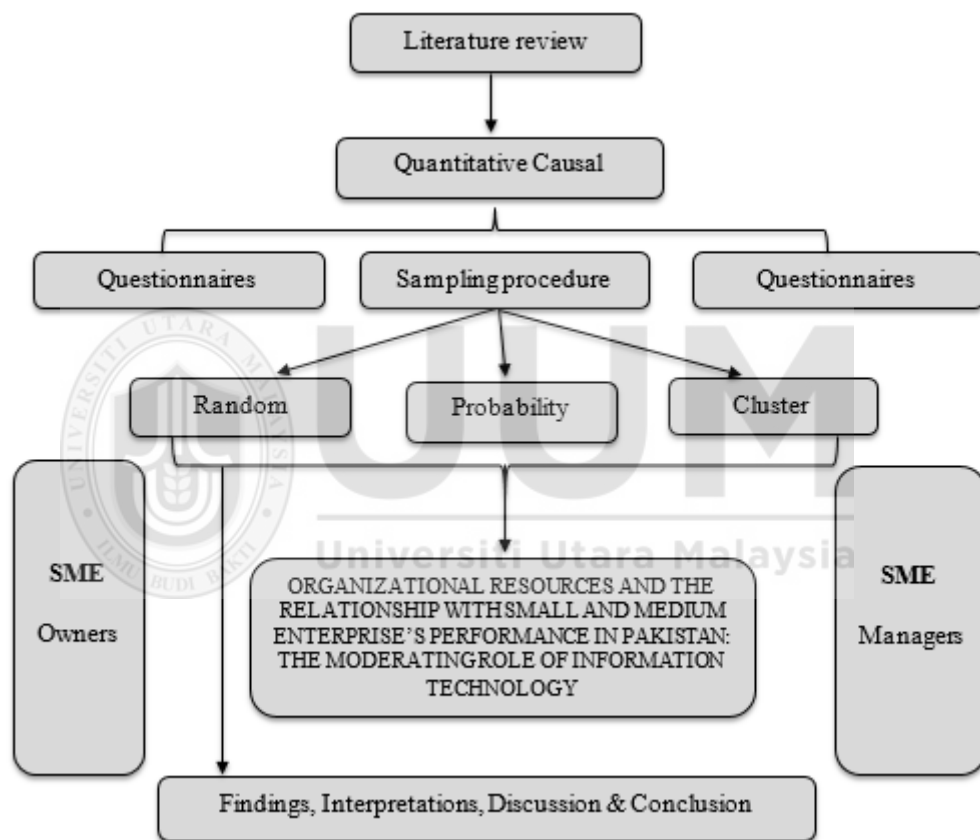


Figure 3.1
Research design.

Asad et al. (2019), and Haris et al. (2021), used a table based on various related questions for data collection at primary level concerned with a hypothesis as shown in this study also. In the present days of technological advancement, web-based questionnaires are utilized due to their ease of use and accuracy like paper-based questionnaires, and their ability to reach larger audiences (Li et al., 2022). Therefore,

the present study used a quantitative survey technique to collect data, since a survey's questionnaire enables the researcher to distill the findings of a sample of individuals from the population and provide an evaluation of its characteristics, attitudes, and behaviors. The survey method is active in this study and is thought to be appropriate.

3.3 Measurement of Variables

In research refers to the process of defining how a concept or variable measured and observed in a specific study. It involves turning abstract concepts (like "stress," "motivation," or "performance") into measurable, concrete indicators (Anand et al., 2021)

There are many factors holding the key position behind the success of the SME (Knol et al., 2018; Moeuf et al., 2020). Management strategy is a key factor in achieving the equilibrium between varied factors in relation to the success of the SME. Therefore, TQM, EO and KMC considered as independent variables in the study (Al-Dhaafri et al., 2013; Al-basheer et al., 2015; Aziz et al., 2017; Buli, 2017; Anon, 2018; Asad et al., 2018; Abubakar et al., 2019; Albassami et al., 2019; Asad et al., 2023).

There is a slogan “What gets measures gets done” focuses on the importance of measuring the item specifically in research (Nguyen et al., 2020). Various experts in the field of entrepreneurship have done the research and highlighted a few major differences among the SMEs’ level of performance in comparison with the other SMEs operating in the industry reflecting the SME performance at above a certain level. It gives the impression that there could be variables that have a moderating impact on the relationship considering in the study. Hence in support of various studies Information Technology (IT) in terms of technological turbulence for gathered information included

in the framework as moderating variable (Pratono, 2018; Andrade, 2021; Liu, 2024). To see the reflection of independent variables and moderating factors as mentioned and taken in this study on SMEs performance which is considered as dependent variable supported by various studies (Akbar et al., 2017; Muhammad et al., 2018; Asad et al., 2020).

For the examination of behaving phenomena of the dependent variable in line with other variables considered as independent in this research together with the moderator, the study used a 5 or 7-point Likert scale, which is more diverted to use 7 points and perceived as most widely used in such relationships. Selecting a 7-point Likert scale has some reasons. According to Kim (2010), using 5, 6, and 7-point Likert scale is considered in studies with higher reliability as the number of categories increased in terms of answers given by respondents. Thus, the seven-point interval of the Likert scale is considered being a measuring tool which is most appropriately aligned with the variables of this work here. Studies in the past also supported the decision to choose a seven-point Likert scale (Pratono, 2018; Hassan & Raziq, 2019). Additionally, the Likert scale is easy for respondents to report their perceptions and assessments. In the specific scenario of the study used here likert scale with a range from 1-7 as “1 treated a (strongly disagree) to the intensity of 7 as (Strongly agree)” as a framework construction.

3.3.1 SME Performance

SME performance is considered as dependent variable in this study, which measured both financial and non-financial performance. The financial and non-financial performance measures are meant to elicit responses on business profitability, growth, market share, customer satisfaction, employee satisfaction, staff turnover, and other

topics. Because the data is acquired directly from managers and owners who are accountable for their companies' success, it is considered as primary data. Furthermore, the current study used a subjective assessment to circumvent the lack of financial records or the sharing of confidential financial data from enterprises as mentioned (Asad et al., 2022). Multiple "financial and non-financial performance" measuring tools were used to address the concerns' objective.

Presently, in prevailing economic conditions it is extremely hard to measure the practicing performance for academicians and management. Wood in 2006 described SME performance context with businesses as "the operational ability to satisfy the desires of the SME's key shareholders", and it must be measured to determine an SME's success. Return on Investment (ROI), turnover, and client count are common measures used to assess business performance (Masood et al., 2018). However, studies recommend business performance measurement (BPM) systems are the way to measuring the performance of a business effectively (Zia, 2020). It is also a useful tool in a variety of fields, including business and social science research.

Therefore, this system examined each factor that influences an SME's financial performance, dividing it into two categories: operational business performance (OBP) and strategic business performance (SBP). It is well suited to assessing the performing capability of small and medium-sized businesses and suitable to use in research qualitatively and quantitatively (Al-Haddad et al., 2019). Scholars have debated the need for subjective criteria in measuring business performance because SMEs are typically hesitant to divulge their actual financial performance publicly. It is crucial to think about the characteristics of distinction that could be confounded by subjective and objective assessments. In this study, the performance of SMEs is a dependent variable.

which refers to the financial and non-financial effectiveness of SMEs' activity outcomes. Uni-dimensional performance measures are used in this study. Hence, with respect to this factor in Table 3.1 adapted questionnaire presenting below from the study (Avci et al., 2011).

Table 3.1

Performance of SME

No	Items
1	"Market share of SME increases in last two years."
2	"Increased in profits of SME in two previous years."
3	"Our cost has decreased in the past two years."
4	"Our sales volume also showed increase in two past years."
5	"Past two years increasing employee satisfaction in our SME."
6	"Satisfaction level of customer has increased in past two years."
7	"Two years in past employees' turnover has decreased in our SME."

Source: (Avci et al., 2011)

3.3.2 Total Quality Management

An analysis of earlier research about Total Quality Management (TQM) showed that many approaches have been taken to measuring the TQM construct for completely encapsulating the fundamental components of TQM, based on the fundamental components of TQM as theorized and investigated by earlier TQM researchers (Nair & Choudhary, 2016; Muhammad, et al., 2018). This study developed the construct for assessing TQM. According to the findings in the literature studied, the construct of TQM was broadly articulated using several of its fundamental components. Based on the relevant literature review, the variable TQM was measured by using 12 items adapted from the works of Kaynak done in 2003. The TQM scale's elements are listed with their references in Table 3.2 in this study.

Table 3.2
Total Quality Management

No	Items
1	“Improving the quality promoted by our SME.”
2	“Quality is a crucial and integral part of doing things in our SME.”
3	“Our SME, added value to the community by our activities.”
4	“Our SME, ensure that employees are well supported during times of change.”
5	“Our SME, has a strong attitude to prevent defective products.”
6	“Our SME, lacks to ensure the quality in the creation of new goods and services.”
7	“Our managers and supervisors are aware of the best ways to inspire workers and drive peak performance.”
8	“Our SME gives clear instructions to employees about the work in process.”
9	“Our SME always gives importance to inspections, review and checking of work.”
10	“Our SME always a focus on ongoing improvement across all activities at all levels.”
11	“Our SME provides training opportunities to employees to ensure the continuous improvement.”
12	“Our SME, genuinely believe that we can thrive and provide superior service in the environment of intense competition by putting continuous quality improvement strategy into practice.”

Source: (Kaynak, 2003)

3.3.3 Entrepreneurial Orientation

Entrepreneurial Orientation (EO) is a type of management activity that deals with topics that how the SME to be innovate, initiative-taking, and considering risk. The EO gauge to be utilized is centered on the work (Asad et al., 2020) which is deep-rooted from the effort of Covin and Slevin (1989) that was developed. Hence, EO comprises of three paradigms, namely: innovativeness, pro-activeness, and risk-taking which has been discussed by several researchers (Al-Dhaafri et al., 2013; Alembummah, 2015; Anwar, 2018; Asad et al., 2018; Isichei et al., 2020; Aftab et al., 2021).

Researchers investigated EO from both a single-dimensional and multi-dimensional perspective (Anwar 2018; Asad et al., 2018). Because EO has an impact on SME performance, businesses should develop it (Aftab et al., 2021). The scale which is used in the current study consists of nine items and the construct will be taken as a one-

dimensional construct. Items for the questionnaire related to EO adapted from the previous study on SMEs (Asad et al., 2018).

Table 3.3
Entrepreneurial Orientation

No	Items
1	“Our SME is known as an innovation executor among businesses.”
2	“Our SME is the leader in developing new products/services.”
3	“Our SME aims to exploit upcoming changes in the target market before competitors.”
4	“Our SME takes the initiative in target market whenever possible.”
5	“Our SME takes advantage of opportunities to influence the business environment in which it operates.”
6	“In dealing with competition, our SME never initiates actions.”
7	“Our SME, invests in high-risk initiatives overall.”
8	“Our SME has a prominent level of tolerance for undertakings projects with significant risk.”
9	“Our business has a strong inclination to take risks is a defining quality of strategy.”

Source: (Asad et al., 2018)

3.3.4 Knowledge Management Capabilities

Accepting the fact that capabilities of managing knowledge in relation with performance showed inconsistency in behaviors empirically. In this study, based on the positions of many authors, the process adopted for the identification, acquisition, storage, share, and application of knowledge to attain performance at an optimal level refer as Knowledge Management Capabilities (Byukusenge et al., 2016; Mardania et al., 2018). KMC was measured using 15 items adapted from (Abubakar et al., 2019) built on the review of applicable literature.

Therefore, collecting informative knowledge and realizing it as a valuable economic asset is a trademark for economic growth (Abubakar et al., 2019). In previous research, KMC can be explained as knowledge infrastructure capabilities and knowledge process capabilities (Akram et al., 2018; Abubakar et al., 2019; Albassami et al., 2019; Anand et al., 2021). Knowledge infrastructure capability views internal marketing as an

enabling factor whereas knowledge processes are represented by knowledge acquisition, and KMC enables accurate capacity and form of knowledge by keeping in mind the right time and place (Anand et al., 2021).

Table 3.4
Knowledge Management Capabilities

No	Items
1	“Our managers and supervisors do informal meetings to discuss and exchange ideas, experience, and opinion”
2	“Our managers always encourage and motivate to have a formal and informal joint activity between departments i.e., open dialogue, spending time together to share experience.”
3	“Our SME has a process to acquire knowledge about customers.”
4	“Our SME has processes for generating new knowledge from existing knowledge.”
5	“Our SME uses feedback from products to subsequently improving them.”
6	“Our SME has processes for converting knowledge into the design of new product and service.”
7	“Our SME has procedures for conveying knowledge to people.”
8	“Our SME has methods for classifying knowledge.”
9	“Our SME has processes for replacing outdated knowledge.”
10	“Our SME has processes for applying knowledge learned from mistakes.”
11	“Our SME uses knowledge to improve efficiency.”
12	“Our SME quickly applies knowledge to critical competitive needs.”
13	“Our SME makes knowledge accessible to those who need it.”
14	“Our SME has processes to protect knowledge from inappropriate use inside and outside of the SME.”
15	“Our SME has technology that restricts access to some resources of knowledge.”

Source : (Esterhuizen et al., 2012)

3.3.5 Information Technology

Information Technology (IT) in research refers to the use of digital tools, systems, and infrastructures to effectively manage, process, and apply gathered and stored information throughout the research lifecycle. IT facilitates data collection, storage, analysis, and dissemination, enabling researchers to improve the efficiency, accuracy, and accessibility of their work. It played a crucial role in transforming raw data into actionable knowledge using databases, analytical software, and communication technologies.

According to Laudon and Laudon (2020), IT involves “the hardware and software that a firm need to achieve its objectives,” which, in the research context, translates to using technology to support and enhance evidence-based inquiry. Similarly, Kumar (2019) emphasizes that IT tools help “accelerate data processing and improve the reliability of research findings.”

IT as a moderator enhanced business value in terms of use of technology. IT in combination with other independent variables brought performance in result. That is why IT accepted as a moderation impact to enhance performance by the other independent variables (Ju et al., 2013; Pratono, 2018; Ndabako et al., 2019; Martin et al., 2020). Investing in technology allows SMEs to gain information that will be useful and alert the SMEs to development into business value (Ndabako et al., 2019; Martin et al., 2020). Specifically, in this study IT considering as moderator which can also leverage SMEs in their performance by effective implementation of technology related policies (Liu, 2024) which support the SME in managing the information for future use and analysis.

However, other way round, highly determined SMEs towards the innovativeness have faced risk of errors in making decisions at highest level. A few years back in Martin et al. (2020), highlight that SMEs’ strategies having opportunistic orientation enhancing the risks associated with business. Responding to the opportunities depends on how SMEs are capable in adapting to change (Liu, 2024). Therefore, it stated that reluctance in the use of IT threatens the SME from creating instability and disrupting the environment. As per one of the research projects, because of the IT situation becomes more uncertain. Hence, there is a need to evaluate IT as moderator with distinct aspects of business. So, IT assessed by using 6 items that have been modified and adapted for

the purpose of this study and based on the work of previous study (Martin et al., 2020). The items and construct in the questionnaire reelecting in the table are taken as the use of technology tools for managing the information and its effective use in performance improvement (Kumar, 2019. IT involves “the hardware and software that a firm need to achieve its objectives of effective moderation of information use in performance enhancement (Laudon & Laudon, 2020).

Table 3.5
Information Technology

No	Items
1	“Information Technology in our SME changes rapidly.”
2	“Information Technology in our SME provides opportunity.”
3	“Information Technology era generates new product and ideas in our business.”
4	“Information Technology era generates innovative ideas from product supply.”
5	“Information Technology generates new ideas to our business.”
6	“Information Technology advancements in our sector have made it possible to create a lot of fresh product ideas.”

Source: (Martin et al., 2020)

This research is supported by the Resource Base View (RBV) as underpinning theory whereas, Knowledge Base View (KBV) and Contingency Theory (CT) as supportive theories at sub level, which emphasize the necessity of aligned strategies. This study showed that SMEs' performance can be improved by combining SME resources such as TQM, EO, and KMC, which has been moderated by IT. Furthermore, the study's findings are expected to suggest that resources such as TQM, EO, and KMC should be implemented as a single-dimensional structure rather than independently in a multidimensional construct. Because each construct's components are intertwined. Even though the vileness of the SME sector in any country's economy, most studies on the factors in question have been undertaken on immense size enterprises by at large.

The importance of aligned tactics is highlighted in this study, which is based on RBV theory together with KBV and CT as a supporting factor. The results of this study

showed that by aligning SME resources such as TQM, EO, KMC, and SMEs' performance has been improved and moderated by IT. Furthermore, the study's findings suggested that resources other than performance factors be implemented as a unidirectional construction instead of multidirectional.

3.4 Population and Sampling Procedure

According to the data revealed in the Sports Goods Sector Brief (2021) report issued by Small and Medium Enterprise Development Authority (SMEDA) claimed that in Pakistan overall 5.2 million businesses at the level of SME. The Sialkot Chamber of Commerce & Industry (SCCI) boasts a membership of over 6000 firms. A massive portion of these businesses are categorized as small enterprises primarily engaged in trading operations, often referred to as 'Commercial Exporters' (SMEDA, 2021). The SMEs in action as mentioned include registered and unregistered both statuses. For collecting data for sports sector SMEs, the Punjab province has been selected specifically Sialkot which is the hub for sports sector manufacturing activities (SMEDA, 2018). The objective behind taking Punjab as it is a hub of economic activity in relation to SMEs. The area of Punjab assigned eight industrial zones or sectors in all named as Lahore, Gujranwala, Wazirabad, Sialkot, Sheikhpura, Multan, Faisalabad, and Rawalpindi.

The resources for data gathering in this study were owners/managers of SMEs located in Sialkot, the city of Punjab. The justification of selecting owners or managers for collecting the data for this study is that they are the backbone of the business and influence in establishing the strategies to make the business successful. Because of the hub of manufacturing in sports goods sector SMEs Sialkot has been selected for taking the sample of the desire study.

3.4.1 Sampling Frame

Sample frame is the set of targeted respondents that must be a true representative of the population from which sample has been taken (Blanco et al., 2024). According to Hair et al. (2020), "sampling frame" is the technical term which assume as the resource of selected sample group. The sampling frame in normal terms includes all existing and potential participants' sample (Hair et al., 2013). Idea from the study of Sharma (2017), sample frame closely representing the population or within a population is a group of cases. It is truly a fact that a comprehensive list of all enterprises in any country is extremely hard to get due to administrative or working perceptive and cultural norms, which is why construction of related database which should be appropriate.

It is not feasibly practical to gather data from every individual in the population, which is why it needs to do sampling. It is essential to ensure that the selected sample is truly representative of the entire population. Various research suggested using probability sampling to ensure that the observed set of data object accurately representing the population, before extrapolating the results (Israr et al., 2021). Therefore, improving the efficacy of sampling frames is the essential step in research (Farrukh et al., 2021). Most of the population must have enough information to design a sampling frame or conduct a thorough study (Asad et al., 2024).

Thus, the study intended to collect the data from 6,000 SMEs according to the data revealed in the Sports Goods Sector Brief (2021) report issued by SMEDA related to sports sector and operating in the Punjab which is a province of Pakistan and carrying a lion's share in SMEs operative units. To more authentic in the study the sample frame development would be in line with the lists provide by Small and Medium Enterprise

Development Authority (SMEDA) and the Federation of Pakistan Chamber of Commerce and Industries (FPCCI).

3.4.2 Sample Size

Selecting the sample size is crucial due to the impracticability of taking the entire population in data collection consideration. Another study of Sharma (2017) mentioned that while taking the decision related to the sample for the research base number of factors including study type, decision significance, elements of data, analysis pattern, sample size, frequency of incidence, and constraints related to the resources' availability. Moreover, it is also workable that significance threshold can be predetermined and obtained the desire degree of statistical significance to set the required sample size in the desire research plan (Sharma, 2017). It is very sensitively important that the sample selected for the research study must have a reflection of the attributes of full population (Peters et al., 2023).

Additionally, the predictability of the model in a real scenario might be affected if the sample size is small or even large, to overcome this the sample size must be sufficient to represent the population (Peters et al., 2023). Finally, if the sample size is not appropriated then it may result in an error of incorrect rejection named as Type 1 error. On the other hand, if the sample size is unnecessarily large in number it may cause incorrect acceptance called as Type 2 error (Sekaran, 2003).

Therefore, a suitably representative sample is in numbers between 30 to 500 observations from the complete data set. According to the study of Sekaran (2003) the size of the sample highly recommended must be larger than the number of variables, ideally considering 10 times or more as justifiable. Whereas, in other studies taking

some varied sample sizes between 150 to 200 (Asad et al., 2023). Number of previous research using different methodologies to estimate the suitable size of the sample that should be a representative determinants of SME export performance (Imran et al., 2017; Anwar, 2018).

In the current study the size of the intended sample is based on the suggestion mentioned in the study conducted by Krejcie and Morgan in 1970. From the population ranging 5000 to 9000 it is appropriate to set the sample size between 357 to 368 as to make it representative of the total population (Krejcie & Morgan, 1970). That is why, it is assumed that the sample size 361 out of 6000 SMEs related to the spots goods manufacturing sector in Pakistan as per the report issued by SMEDA in 2021 to distribute the questionnaire for data collection was sufficient. Moreover, the study also suggested for future researchers to use G-Power as well for sample size selection.

3.4.3 Sampling Procedure

Sampling methods used to be applied in research because it is a big challenge and impractical to make inference on entire population by collecting the data from every data unit (Sharma, 2017). There are various techniques can be applied in doing sampling but in most of the research two main types used normally named as non-probability and probability sampling (Nair et al., 2021). In non-probability sampling some objects have a healthier chance of being selected compared with the others in the entire population. Whereas, comparing with probability sampling every object in the data set has an equal opportunity to be selected (Sekaran & Bougie, 2010).

However, non-probability is become the monopolistic choice if the population cannot be determined adequately (Masocha, 2019). In non-probability and probability

sampling methodologies there are different techniques that can be used named as “cluster, systematic, stratified, and simple random” sampling techniques. Primarily selected samples should be appropriate in size and representative of entire population specifically in social sciences studies probability sampling is preferable compared with non-probability sampling (Masocha, 2019).

Probability of sampling benefits by restricting the prejudice from the research point for selecting another participant of their choice. Because in a sample-based study not the entire population observed it may evidence as general perception of the sample make with specific allowed degree of variation in the result gives margin to develop the unambiguous and potential biases (Akbar et al., 2017). This level of generalizability in the sample is highly needed.

Moreover, the objective of sampling in this study is to collect the data from sampled SMEs established operations in the Pakistan Punjab province. So, probability sampling methodology is used in this study with the simple random sampling as specific method. The ultimate objective of doing the sampling and collecting data in this study is to examine the effect of TQM, EO and KMC on the performance of SMEs operating in Sialkot city which is in the Pakistan province named as Punjab. Among the variables TQM, EO and KMC also used IT as a variable to see the moderation impact of it on SMEs performance.

3.4.4 Unit of Analysis

On a business level, the goal of this research is to investigate hypothesized links between criteria and predictive variables. As a result, SMEs organization serve as the study's unit of analysis, with the owners and managers as the representatives of these

businesses considered as key respondents. Because improper respondents showed resources of erroneous responses, it is critical to address the most relevant respondents. According to Asad et al. (2023), respondent screening and selection were based on key informants' knowledge, formal role in the SME, and willingness to answer. Due to their level of participation in the SMEs' operations, owners/managers of the founding and managing enterprises are in the context of SMEs, they are consistently seen as the operational and strategic leaders and the informants Asad et al., 2021). As a result, the respondents in this study were the SME's and owner/managers taken as representatives, as they have a better understanding of and seem to be more deeply engaged in overseeing all business operations, and they frequently represent the opinions of the entire SME (Israr et al, 2021). Therefore, owners and managers are selected as units of analysis for data collection because of their roles in the business as follows.

Decision-Making Authority: Owners and managers are entrusted with authority to make significant decisions on behalf of the organization. These decisions can range from financial matters to strategic planning and operational activities. As representatives, they act on behalf of the organization in making choices that impact its present and future. However, leadership vision of owners and managers provide leadership and vision for the organization. They set the mission, goals, and objectives, which reflect the values and purpose of the organization. Through their decisions and actions, they embody the organization's identity and direction. Moreover, owners and managers are accountable for the organization's performance and outcomes. They are responsible for ensuring that the organization operates efficiently, complies with regulations, meets its financial obligations, and achieves its goals.

Legal and Fiduciary Duties: Owners and managers have legal and fiduciary duties towards the organization. Owners have a personal stake in the organization's success and are responsible for its financial health. Managers, on the other hand, are often hired or appointed to manage the organization's day-to-day operations. Both owners and managers are legally obligated to act in the best interests of the organization, making decisions that promote its well-being and sustainability.

Relationship with Stakeholders: Owners and managers interact with various stakeholders, including employees, customers, suppliers, and the community. They negotiate contracts, resolve conflicts, and represent the organization in partnerships and collaborations. In these interactions, they serve as the face of the organization, representing its values, integrity, and commitments.

Strategic Communication: Owners and managers communicate the organization's mission, goals, and achievements to internal and external audiences. They articulate the organization's purpose and initiatives, fostering a sense of identity and purpose among employees and stakeholders. Effective communication is a fundamental aspect of their role as representatives. Additionally, organizational culture influenced the work environment. Their leadership styles, values, and behavior set the tone for the workplace. A positive and inclusive organizational culture is often a reflection of their attitudes and approach to managing the organization.

In summary, owners and managers serve as the representatives of the organization because they hold decision-making authority, provide leadership and vision, are accountable for the organization's performance, fulfill legal and fiduciary duties, manage relationships with stakeholders, communicate the organization's identity, and shape its culture. Their actions and decisions are strongly associated with the

organization's reputation, making them integral representatives of the entity they lead. Hence the perception of the owners and managers analyze in growth, customer satisfaction, employee turnover, technology adoption, sales growth, quality implementation and role together with the application of entrepreneurial skills along with the knowledge gathering and its proper utilization towards performance enhancement. Hence, the perception of the owners and managers analyze around growth, customer satisfaction, employee turnover, technology adoption, sales growth, quality implementation and role together with the application of entrepreneurial skills along with the knowledge gathering and its proper utilization towards performance enhancement.

To encourage managers to participate completely in the survey, they were promised access to the study's findings. Because TQM, EO, and KMC are SME-level constructs with deep roots in SMEs, a single informant approach as a representative was utilized to acquire data from SMEs in this study. Hence, there are various explanations for why a single respondent strategy is more effective than a multiple-respondent approach. First, it is less expensive; second, it allows the researcher to involve more respondent SMEs, resulting in a higher response. Finally, it simplifies the data set, as several responses from the same SME might make the analysis process more difficult in the areas favored as a single-informant method.

3.5 Questionnaire Design

The survey's based on document is segmented in two parts, the first of which covered the demographic information about the participants and includes questions about their personal information, including name, email, gender, education level, age group, marital status, position within the SME, experience in the industry, and number of

employees. The second section asked about the respondents' opinions on diverse topics. The second section, which contains five subsections, is the focus of the survey and data collection objective. It includes three independent variables, one dependent variable, and a moderating variable, all of which are linked to different variables in the proposal as discussed in the conceptual framework. Before moving to formal testing researcher performed pilot testing on 50 initially collected questionnaires as pilot data.

3.5.1 Pilot Testing

Pilot testing in research refers to conducting a small-scale preliminary study before the main research project to evaluate the feasibility, time, cost, risks, and potential problems in the research design and procedures. It serves as a trial run to identify weaknesses and make necessary adjustments to improve the reliability of the main study (Wadood & Akbar, 2021).

Before moving on to the pilot testing and planned empirical data collection, each variable is examined by using various questions that gathered and adapted information from prior research and are authorized for reliability. The reliability of the survey instrument is observed in its content by the subject expert and the opinion has been taken from the expert to the subject in the study. There are several methods that can apply to make the data reliability. Instrument is subjectively investigated, and it reflects the transparency and the relevance in data collection from the intended population (Kumar, 2019).

Items of the questionnaire concerning each variables perceptions, are designed to be answers in Likert scale of seven points which is mostly used by scholars is social sciences-based studies (Pratono, 2018; Hassan & Raziq, 2019). The scale representing

the intensity of participant agreement on the items of the questionnaire in various dimensions in which “1 (Strongly disagree); 2 (Disagree); 3 (somewhat disagree); 4 (Neutral); 5 (somewhat agree); 6 (Agree) and 7 (Strongly agree).”

The items of the questionnaire on variables in study taken from various previous studies like the seven items covering the dependent variable of SME performance taken from the previous study (Avci et al., 2011). Similarly, the items of TQM are based on numerous studies (Anderson & Sohail, 1999; Al-Swidi & Mahmood, 2012). In addition to this from the study conducted by Asad et al. (2021), is the resource for the items concerning EO and the items of KMC variables for the questionnaire purpose adapted also from previous the studies and the moderating variable which is IT also being tested by the items taken from the various studies (Pratono, 2018; Martina et al., 2020).

3.6 Data Collection Method

Several studies mentioned various methods which can be used for questionnaires to reach the desired sample of the population with self-administered questionnaire as postal, internet (email), fax or online survey to the targeted population (Yuen et al., 2018; Ball, 2019; Bawden & Robinson, 2020; Asad et al., 2022). Every method has some pros and cons with limitations. Researcher's preference, time constraints, cost, potential response rate and many more should be considered in the selection for the method to be used in questionnaires administration (Al-Rashid et al., 2021). However, every method has some privileges over the other. Email and self-administered questionnaires used for collecting data and distribute among SMEs operating in Sialkot the city of Punjab, Pakistan. According to Dilman (1978) Self-administered questionnaires are more efficient and have a greater impact on how satisfactorily respondents reply to the data they produce.

Moreover, according to Sekaran (2003), the completed questionnaire for a survey cannot be gathered quickly but needs to push and motivate the respondents by the people in the research team working having data collection responsibility. They also need to clarify any doubt on the spot which arises in the mind of data objects. Therefore, this study went for the self-administered questionnaire selected as a method for data collection by filling those items of questionnaire as much as possible with all limitations. A follow-up calls and self-visits as a reminder to respondents SMEs also as per the possible practicality has been performed to increase the response rate of the survey according to the currently prevailing situation. Only those responses used for data analysis fulfilled all statistical requirements for the purpose of hypotheses testing.

3.7 Reliability

It is very crucial that the data collected for the purpose of research must be dependable and have validation to make inference based on it. At the same time, specifically for research related to the field of social sciences, it is not possible to develop a perfect process to collect the intended data. Therefore, in doing research in such area having possibilities of errors of random bases (Mura et al., 2020). Tactfully overseeing the process can assess the possible random error and can reduce its probability of harming the situation. Improvement in reliability is the grass root approach to dealing with random errors whereas the tests performed regarding reliability amid to examine that how consistent the level of proposed measures? Reliability of measurement reaches to elevated level in case of alike results derived in consistent conditions. To make sure in this study about the instrument related to the correctness of its measurement researcher used face validity.

3.7.1 Content Reliability Test

A small sample of respondents and experts were consulted to assess the suitability of the items selected to measure the construct. Although there are many different instrument reliability techniques in SME research, the frequently used technique is the coefficient of Cronbach's alpha and the other one is the coefficient of composite reliability (Asad et al., 2016; Mura et al., 2020). According to Mura et al. (2003), the acceptable level of alpha value about the instrument construct's reliability is considered as more than 0.5 while less will be considered as unacceptable. In addition to this if the value of Cronbach's alpha coefficient is exceeded or around 0.9 considered excellent; near to 0.8 is particularly good; 0.7 levels are adequate for research instrument reliability (Khan et al, 2021). In this current study for evaluating the reliability of instrument construct used composite reliability approach as a rule of thumb (Hair et al., 2020). The same composite reliability approach and coefficient of Cronbach's alpha were used at the level of pilot testing here along with determining the consistency at an internal level for measurement scale variance extracted on an average basis adapted in this study. The ascertained results are shown in Table 3.6 below.

Table 3.6
Reliability

Construct Reliability			
Variables	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
SME performance	0.916	0.931	0.629
Total quality management	0.961	0.966	0.684
Entrepreneurial orientation	0.834	0.884	0.572
Knowledge management capabilities	0.973	0.977	0.751
Information Technology	0.875	0.900	0.600

Source: Statistical Analysis

3.7.2 Summary of expert opinion on content validity

Validation of content refers to the degree to which elements on a basis for monitoring the content universal to which the measurement planned to sue. Applying content validity is strongly advised in the field of research while the instrument is being developed or evaluated for adaptability. The content validity is a crucial part of the instrument to assess variables in any study. To achieve this objective, questionnaires were sent to the experts on the subject, and in reply got their opinion. The expert confirmed that the instrument that was sent to check the content validity was adapted from prior literature. As per the opinion of experts, the scale taken in the questionnaire is appropriate and suitable for the data collection based on the items being used to measure the relevant constructs.

3.8 Data Analysis Techniques

Several methods used in this study to analyze the data. To check any violation in the data, data screening, and cleaning done at the first stage, then descriptive analysis used such as frequency tables, graphs, and percentage for the variables used in this study to assess the data. These methods identify that data has not initially been violated. For further analysis, the PLS-SEM method used (Ali et al., 2017; Imran et al., 2018; Mura et al., 2020; Iqbal et al., 2021). To minimize the measurement errors, reliability, validity, and appropriate measurement were also used in this research. Converging and discriminating validity is used to check the construct validity through PLS-SEM method. Besides, for the content validity, this study used the experience of experienced and knowledgeable people. Moreover, Composite reliability and Cronbach-alpha are utilized to measure the reliability of the data and instruments.

A Smart PLS 2.0 is used to determine the internal consistency reliability, Average (AVE), and discriminant validity of the constructs (Nakku et al., 2020). To obtain composite reliability coefficients and AVE PLS Algorithm calculated. Composite reliability coefficient should be minimum 0.7 as suggested by (Peterson & Kim, 2013). Moreover, AVE should have at least 0.5 (Asad et al., 2023). After, AVE discriminated against the validity of the construct checked by taking the square root of the AVE and suggested that all the square root values should be greater than the co-relations among variables.

3.9 Partial Least Square Analysis

The algorithmic technique of Partial Least Square (PLS) was developed in 1974, but in recent years' evolution in this technique has taken place at a greater pace. This research used SMART PLS-SEM which is an extension of PLS with structural equation modeling for statistical analysis and hypothesis testing. The selection of smart PLS among other software's depends on several reasons. Both methods of the Covariance-based Structural Equation Model (CB-SEM) and PLS-SEM statistically have differing viewpoints, but PLS-SEM served as the founding stone for covariance-based SEM (Hair et al., 2019). However, PLS-SEM represents good proxies of results and has been used in previous studies for SMEs (Iqbal et al., 2021). Similarly, SMART PLS-SEM provides significant and legitimate outcomes, while SPSS compared to PLS-SEM conclusively has an ambiguity that would call for further analyses (Bollen, 1989). In addition to this, PLS-SEM estimates a partial model relationship by maximizing the variance with an iterative sequence of ordinary least square. This indicates that PLS-SEM is more relevant for applications where the strong assumption of multivariate normality cannot be fully met.

Recently in the near past, the application of PLS-SEM showed an increase in its acceptance internationally in diverse businesses (Asad et al., 2021). Additionally, discretion in choice and endogenic ways of assessing observe as extension in methods extending the scope of it (Hair et al., 2020). Therefore, PLS-SEM has greater usability in less developed theoretical perspectives, and the objectivity of testing is to elaborate the targeted construction of the hypothesis (Hair et al., 2013). In the case of overly complex modeling of latent and manifesting variables, surrogate tools of PLS serve to oversee. Whereas PLS only entertain latent ones. Measuring reflective as well as formative style models can also be managed due to the lower rigorous assumptions in this tool (Hair et al., 2013). Even though formative measuring tactics are used with data of high Skewness, the results still have robustness.

Furthermore, reported most social science studies face normality issues in data analysis. The biggest advantage of using SMART PLS-SEM is that it deals with abnormal data as normal, and in other words, it shows non-normal data as efficiently as normal data (Chin, 1998). PLS-(SEM) algorithm uses data transformation towards normality, by the theorem of central limit. SMART PLS-SEM in this study was used to avoid normality issues. In behavioral and social sciences SMART PLS-SEM is found to be one of the top practical statistical tools to an examination of multiple relationships. Hence, in the present study, SMART PLS-SEM was employed for accurate prediction of the relationship between criterion and predictive variables within the structural model.

3.10 Chapter Summary

This chapter consists of a detailed explanation of research design, population, sampling technique, measurement, and instrumentation, validity of constructs, procedure for collecting data, and techniques for analyzing data. Therefore, SMART-PLS 2.0 was

employed to perform data analysis at the primary level with a descriptive dimension of statistics for the model of measurement (i.e., internal consistency reliability and validity tests), and the evolution of the structural model (i.e., testing hypothesis). Further, in the data collection method a simple random sampling approach was used based on the database provided by the Sialkot Chamber of Commerce and Industries (SCCI), and other official authoritative bodies.



CHAPTER FOUR

ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter provides the results of research findings and includes data about demographic factors, statistical descriptive analysis, content reliability, and validation tests, together with the hypothesis testing results. The results of the findings are based on the data collected from the SMEs of the sports sector in Pakistan. This chapter also provides a detailed discussion of various research findings areas like rate of biasness in terms of data responsiveness, non-responsiveness, and common method test. Further includes the initial screening of data at the preliminary stage with the cleaning of data and sample characteristics also discussed in detail. Moreover, the data reliability and test for validation of data are also presented together with the measurement model in terms of its predictive relevance and goodness of fit test. Finally, it also includes testing of each hypothesis developed in the study together with the path coefficients and size productiveness.

4.2 Response Rate

In the study, the questionnaires were personally administered. Data were collected from the owners/managers as a representative of the SME in the sports goods manufacturing sector in Pakistan. With a personally administrated questionnaire, researchers could provide personal explanations to the owners and managers of SMEs and encourage speedy and accurate completion. To increase the response rate, researchers used various means as reminders like calls, messages, and personally re-visited respondent's location (Sekaran & Bougie, 2010). In a result of this exercise, 380 from 500 questionnaires

were returned, which made a 76 percent rate of response. However, due to the missing information in the filled questionnaires, 19 were not suitable for use. That is why for enhancing the response validation 361 completed questionnaires were used from 500 sent to the respondents which reduce the response rate from 76 percent to 72.2 percent which is still acceptable (Sarstedt & Cheah, 2019). The reason for not taking 19 questionnaires in further research analysis is due to their incomplete response or improper answer by the respondents as mentioned above.

Table 4.1
Questionnaires Responses Rate

Response	Frequency rate
Questionnaires distributed	500
Questionnaires collected from respondents	380
Questionnaires not suitable for use	19
Un-returned questionnaires	120
Rate of response in percentage	76%
Response rate for usable questionnaires in percentage	72.2%

Source: Gathered from the collected questionnaires

As shown in table 4.1 due to informality in the SME sector, especially in Pakistan. 120 questionnaires were not returned even though the follow-up was done sufficiently due to the informality and lack of regulatory protocols in the SME sector in Pakistan. Therefore, usually, the owners and managers are reluctant to answer the questionnaires for any sort of data collection. Therefore, with 19 unsuitable and non-response questionnaires, the response rate becomes 72.2 percent which is still considerable (Sarstedt & Cheah, 2019).

4.3 Data Screening and Preliminary Analysis

It is crucial that the data must be free from any error up to a reasonable extent before moving towards further analysis. In applying the multivariate technique, it is also especially important to ensure that data does not have any violation from the basic assumptions of that technique (Hair et al., 2010; Asad et al., 2021). To ensure that data is not violating any of the basic assumptions and that lowest and highest values together with the means value are in the range assigned to them. Hence, it gives confidence that the data has no errors and is properly coded and entered for analysis. It enables the researcher to proceed to the next step, which is to analyze the data with full confidence related to its reliability. Moreover, after the step of codifying and entering the data, researcher also performed various tests like identifying the missing data and outliers along with evaluating its multi-collinearity and normality (Hair et al., 2010).

4.3.1 Test of Missing data

Researchers paid close attention to the data collection time to reduce the probability of missing data in the questionnaire. This countered the negative effects of missing data in data analysis. Researchers ensured the non-occurrence of missing data by carefully checking the returned questionnaires from respondents on a sample basis with a quick skimming pattern. To make it more effective researchers re-connect with the respondent for any question if found inappropriately answered or not answered at all. Missing values can be replaced by using the mean value immediately before the missing value (Mura et al., 2020). Missing values deal with weightage in the data overall. Missing values considered small if not exceeding 1 percent and 5 percent can be managed and controlled by themselves, whereas, more than 5 percent by not exceeding 15 percent require treated sensitively by an appropriate method, and if missing values weightage

is extended from 15 percent can negatively impact on statistical analysis significantly (Sarstedt & Cheah, 2019). Data was carefully evaluated with frequency testing for all variables to check the missing values and finally, no missing values were found in the data. Therefore, the research got permission signal to do the analysis that had to be performed.

4.3.2 Testing of Outliers

In statistical analysis, the data may have distortion, especially in computing variances and covariance if outliers in the data exist. Outliers may reflect some differences at the experimental level due to the application of multiple methods of detection (Khan et al., 2022). Outliers also have biased results on data mean and standard deviation (Iqbal et al., 2021). Outliers also limit the usefulness of the data in real-life situations in its true sense (Khan et al., 2022). Outliers are the indicators of errors at the measurement level and the population may suffer due to the presence of randomly distributed data. Therefore, the presence of an outlier may distort the data and cannot apply except in the case where the same kind of outlier exists.

For the detection of outlier data, various techniques are available. In this current research the author used Mahalanobis approach (D^2) which is one of the approaches among various existing in the research world (Hu et al., 2023). The Chi-square table is usually used to compare the distance value of Mahalanobis with the significance level of 0.001. Normally outliers at the multivariate level take care of the outliers at the univariate level. Whereas univariate level outliers will not necessarily be taking care of multivariate level outliers (Hair et al., 2010; Gold et al., 2015). However, reference to the distance value of Mahalanobis test at the upper level, it was found to be less than 0.001 compared with the chi-square statistics for all variables. Therefore, it showed that

in the data of 361 responses the presence of an outlier was not found. That is why all statistical results are based on 361 responses.

4.3.3 Testing of Normality

To ascertain whether the data was distributed normally, studies used the test of normality (Mura et al., 2020). This test normally scrutinizes the data variation from the meaning of the sample. Hence, difficulty in the assessment of parameters with the standard error may be exaggerated compared with the bootstrapping. Therefore, it is crucial to check the normality of data. The study here applied Skewness and Kurtosis as statistical techniques for ensuring the normal distribution of data in research (Hair et al., 2010; Asad et al., 2021). Whereas Kurtosis and Skewness check the deviation of data from its normality usually do not establish difference substantively if the sample size is greater than 200 (Asad et al., 2023).

Previous studies mentioned that to align the data with its normality the values of Skewness and Kurtosis should be less than 2 and 7 respectively (Mura et al., 2020). However, Skewness and Kurtosis values slightly vary as per the sample size for their acceptability. It is also mentioned in a study that if the coefficient values of Skewness and Kurtosis are less than 3 and 10 respectively the data set to marked as normal. Based on the above discussion and the results obtained in this study to evaluate the normality of data it falls within the range of less than 1 and 7 for each variable. Therefore, it is justifiable that the study can use the tabular presentation to reflect the normality test. Hence, table 4.2 shows the normality of the data collected in this study, this reflects that the pattern of data has normality in its features.

Table 4.2
Skewness and Kurtosis

Variables	Skewness		Kurtosis	
	Value	Standard error	Value	Standard error
TQM	-1.179	.125	3.431	.248
EO	-1.454	.125	5.633	.248
KMC	-1.424	.125	3.487	.248
IT	-1.395	.125	4.248	.248
FP	-1.416	.125	4.259	.248

TQM = Total Quality Management, EO = Entrepreneurial Orientation, KMC = Knowledge Management Capabilities, IT = Information Technology, and FP = Firm (SME) Performance.

Source: Statistical Analysis

Hence, based on the previous studies the results of Skewness and Kurtosis as mentioned in Table 4.2 are within the range of less than 1 to 7 for each exogenous variables and moderating variable (Mura et al., 2020). As mentioned in table 4.2 the values of Skewness are within the range of minimum negative 1.454 about EO and maximum negative 1.179 in terms of TQM. The value of Kurtosis also falls within the acceptable range of a maximum of 5.633 again in relation with EO and a minimum of 3.431 in terms of TQM. This shows that the data collected for the study has normality in its behaviors as well.

4.3.4 Testing of Multi-collinearity

Before going for statistical analysis, it is very crucial to check the data for the existence of multi-collinearity. It refers to the two exogenous variables in the study having a correlation between them which will impact the analysis of the data. Hence, the interpretation of the data could be influenced if multi-collinearity exists in the variables (Khan et al., 2021). Additionally, multi-collinearity increased the probability of standard error in the statistical results of coefficients, which may reveal them as insignificant when they are not (Khan et al., 2021).

Variance Inflation Factor (VIF) is the most suitable and reliable test that can be performed to check the multi-collinearity between or among the exogenous variables (Hair et al., 2010). The acceptability of the multi-collinearity as per the statistical range should be 0.1 to 10 (Hair et al., 2010). Therefore, using the correlation matrix first evaluated multi-collinearity whereas, in the second stage study examined the multi-collinearity in exogenous variables by using the tolerance and VIF levels. To determine that if any elevated level of multi-collinearity in the independent variable study used the correlation matrix. If the resulting correlation is more than 0.9 as an absolute value referring to the presence of multi-collinearity in the variables (Asad et al., 2023). Four types of correlations are identified to assist the appropriate selection of variables categories as exceptionally high in range with 1.0 to 0.9 whereas, 0.9 to 0.7 is considered moderate and 0.5 to 0.3 is considered low whereas, less than 0.3 believe to be irrelevant (Asad et al., 2023).

Table 4.2.1
Variables Correlation matrix

Variables	TQM	EO	KMC	IT	FP
TQM	1				
EO	0.63	1			
KMC	0.39	0.28	1		
IT	0.58	0.59	0.27	1	
FP	0.47	0.58	0.55	0.29	1

TQM = Total Quality Management, EO = Entrepreneurial Orientation, KMC = Knowledge Management Capabilities, IT = Information Technology, and FP = Firm (SME) Performance.

Source: Statistical Analysis

In Table 4.2.1, the correlations among the variables range from 0.27 to 0.63, all falling within acceptable limits. The table reveals that the lowest correlation exists between IT and KMC, while the highest correlation is observed between EO and TQM. Consequently, the variables analyzed in this study demonstrate correlations below 0.90, indicating the absence of multi-collinearity issues in the collected data.

Secondly, the assessment of multi-collinearity involved examining tolerance and VIF values, as recommended by scholars (Hair et al., 2020). VIF is a statistical measure used to assess multi-collinearity in statistical analysis. Multi-collinearity occurs when independent variables in a statistical model are highly correlated, making it challenging to discern each variable's individual impact on the dependent variable. VIF quantifies how much the variance of an estimated statistical coefficient increases when your predictors are correlated. Specifically, for each independent variable in the model, VIF is calculated by regressing that variable against all the other variables. A high VIF value (typically above 10) suggests that the variable in question is highly correlated with the other predictors, indicating potential multi-collinearity issues.

High VIF values can lead to inflated standard errors, making it difficult to determine the true relationship between the predictors and the dependent variable. To mitigate multi-collinearity, researchers often consider removing or transforming highly correlated variables to improve the reliability and interpretability of the statistical model. By keeping VIF values low, researchers ensure that the estimates of statistical coefficients are stable and accurate.

Table 4.2.2
Tolerance and VIF Values

Variables	Tolerance	VIF
TQM	0.53	1.93
EO	0.52	1.92
KMC	0.81	1.25
IT	0.52	1.94

TQM = Total Quality Management, EO = Entrepreneurial Orientation, KMC = Knowledge Management Capabilities, IT = Information Technology, and FP = Firm (SME) Performance.

Source: Statistical Analysis

As per the analysis presented in Table 4.2.2 above, the tolerance values, ranging from 0.52 reflecting EO to 0.81 in KMC, exceed the critical threshold of 0.1, while VIF values, ranging from 1.25 in KMC and to 1.94 in IT, were well below the problematic threshold of 10 (Hair et al., 2010). According to Hair et al. (2010), and Mura et al. (2020), tolerance values below 0.10 and VIF values above 10 signify high collinearity. Given that obtained tolerance and VIF values do not fall within these critical ranges, it can be concluded that multi-collinearity is not a concern in this study.

4.4 Biasness test for non-Responsiveness

The objective of evaluating the biasness of non-responsiveness is to compare the answers of respondents with those responses in the first receipt of the questionnaires with those answered after reminding them or sending them again the questionnaire. If the answers of the respondents differ significantly, it will create a problem in the survey, because it shows the inability of the instrument to get unbiased data from the target respondents. This may occur because of the hurdles in contacting the respondents and they refuse to participate in the survey (Asad et al., 2023). Information obtained from the respondents being different from the ones not responded at all is the actual error issue related to non-responsiveness (Aftab et al., 2021). It also affects the external validity of the estimates derived from the obtained response so needs to be sent for corrections add perpetually updating the collected response (Khan et al., 2021).

Therefore, in the presence of non-response error, one cannot express words about the responsiveness of the complete sample and affects the general applicability of the sample over the entire population. Hence, it is very crucial to analyze the type of error due to no-responsiveness before moving to further analysis. For the said purpose among the owners and managers of SMEs a total of 500 questionnaires were distributed and

361 questionnaires collected as fully completed. To check the non-responsive over all collected questionnaires split into two categories the one considers as response early within the time and the other delay by using the t-test statics on the variables in the study including moderator IT and exogenous TQM, EO, and KMC on SMEs performance in table 4.3 below.

Table 4.3
T-test for Non-Response Bias

Variables	Response Categories	Sample (N)	Mean	Standard Deviation	Levene's Test	
					F	Sig
TQM	Early	209	4.72	1.38	2.22	0.33
	Delayed	152	4.70	1.36		
EO	Early	209	4.39	1.63	1.99	0.40
	Delayed	152	4.37	1.56		
KMC	Early	209	4.93	1.35	1.87	0.45
	Delayed	152	4.78	1.33		
IT	Early	209	4.75	1.46	1.49	0.47
	Delayed	152	4.84	1.44		
FP	Early	209	4.33	1.65	2.32	0.33
	Delayed	152	4.25	1.61		

TQM = Total Quality Management, EO = Entrepreneurial Orientation, KMC = Knowledge Management Capabilities, IT = Information Technology and FP = Firm (SME) Performance.

Source: Statistical Analysis

The results of the independent samples t-test as statistical measures shown in Table 4.3 reflecting the sample of 209 early respondents and 152 delayed ones. The results also showed the significant level of differences between early and delayed respondents in light with the mean (M) and standard deviation (SD). Results reveal that the groups M and SD for prompt response and late response are not different. Levene's test based on SME performance, TQM, EO, KMC and IT showed that the variance between the early response and delayed response is the same. In general, with respect to SME performance, the mean and standard deviation of early respondents reported no significant difference (M=4.33, SD=1.65) than the delayed respondents (M=4.25,

SD=1.61). In addition, the result indicates that there is no significant difference between early and delayed responses. Therefore, the null hypothesis is accepted. Similarly, the result indicates that the early respondents based on TQM ($M=4.72$, $SD=1.38$) and delayed respondents ($M=4.70$, $SD=1.36$) were the same, which is why the same null hypothesis is accepted.

Moreover, results from EO indicate that there is no significant difference between early respondents ($M=4.39$, $SD=1.63$) and delayed respondents ($M=4.37$, $SD=1.56$), and the null hypothesis is accepted. The result with respect to KMC indicates that early respondents ($M=4.93$, $SD=1.35$) and delayed respondents ($M=4.78$, $SD=1.33$) were similar nearly resulting in the acceptance of the null hypothesis. Finally, based on IT as moderator, the early respondents ($M=4.75$, $SD=1.46$) and delayed respondents ($M=4.84$, $SD=1.44$) responded in an analogous way. Therefore, the alternate hypothesis was rejected. According to Field (2009), the variance significance values for each of the five study variables were higher than the 0.05 significance level of Levene's test for variance equality. The premise of equal variance between early respondents and delayed ones appears to have needed to be upheld in this study case. Therefore, it can be said that non-response bias was not a significant issue in the current study. Moreover, it stated that the problem of non-response bias does not seem to be a big issue in this study at all.

4.5 Biasness Test for Common Method

Data collection about the variables could have defoliation because of using the same instrument at the same time in the ordinal scale (Kock et al., 2021). Keeping the problem of errors in data collection due to Common Method Biasness (CMB) this study used a test to avoid the variances in actual and observed facts together with make sure

that the correlation factors were not inflated. Sometimes the author may fail to elaborate the CMB to readers. It is also recommended to use the Variance Inflation Factor (VIF) to eliminate the CMB (Matloob et al., 2023). CBM proved in the data if the correlation coefficient is greater than 0.9 (Matloob et al., 2023). The variance reflects due to CBM being said to be Common Method Variance (CMV). Therefore, straightforward, brief, and language used to develop the questions to improve the questionnaire and apply “Harman’s single factor test” for reducing the CMV (Asad et al, 2023). To evaluate the CMV with “Harman’s single factor test,” this study used exploratory analysis by loading the variables (Zia, 2020).

Hence, most of the instruments used in this study were taken and adopted from previous studies. Therefore, the construct was the same as the initial collection of the variables that needed to be investigated. The fundamental premise of this method is that there is a significant level of CMV both emerging from a single factor loading analysis or, factor as common reflecting the mainstream of covariance between the measuring tools (Asad et al., 2024). The results of the test with respect to principles component analysis for Harman’s single factor are mentioned in Table 4.4.

Table 4.4

Harman’s single-factor analysis

Component	Total Variance Explained								
	Initial Eigen Values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Var %	Cum %	Total	Var %	Cum %	Total	Var %	Cum %

1	6.531	21.742	21.742	6.531	21.742	21.742	3.983	13.259	13.259
2	2.678	8.915	30.656	2.678	8.915	30.656	3.009	10.017	23.276
3	2.339	7.786	38.443	2.339	7.786	38.443	2.922	9.727	33.003
4	2.021	6.728	45.171	2.021	6.728	45.171	2.843	9.464	42.467
5	1.811	6.029	51.200	1.811	6.029	51.200	2.699	8.733	51.200
6	1.232	4.089	55.289						
7	1.212	4.035	59.323						
8	1.115	3.379	62.702						
9	0.801	2.667	65.369						
10	0.789	2.623	67.991						
11	0.765	2.543	70.534						
12	0.734	2.440	72.974						
13	0.699	2.123	75.097						
14	0.651	2.164	77.261						
15	0.612	2.034	79.295						
16	0.524	1.736	81.031						
17	0.501	1.660	82.691						
18	0.497	1.647	84.338						
19	0.422	1.371	85.709						
20	0.371	1.229	86.938						
21	0.351	1.163	88.101						
22	0.298	0.987	89.088						
23	0.296	0.981	90.069						
24	0.271	0.870	90.939						
25	0.199	0.657	91.595						
26	0.192	0.634	92.229						
27	0.178	0.588	92.817						
28	0.172	0.568	93.384						
29	0.165	0.545	93.929						
30	0.161	0.531	94.460						
31	0.151	0.498	94.959						
32	0.148	0.489	95.447						

33	0.141	0.453	95.900
34	0.138	0.455	96.355
35	0.134	0.442	96.798
36	0.098	0.323	97.121
37	0.092	0.295	97.416
38	0.089	0.294	97.710
39	0.078	0.257	97.968
40	0.071	0.234	98.202
41	0.068	0.224	98.426
42	0.065	0.215	98.641
43	0.062	0.205	98.846
44	0.068	0.224	99.070
45	0.065	0.215	99.285
46	0.062	0.199	99.484
47	0.057	0.183	99.666
48	0.053	0.170	99.836
49	0.051	0.163	100.000

Source: Statistical Analysis

Table 4.4 also mentioned the percentages of extraction and rotations of sum of square loadings. It illustrated that five components with eigenvalues greater than one collectively explain 21.742 of the total variances. This implies that the first factor, with an eigenvalue of 21.742, captures a substantial portion of the dataset's variability. Harman's Single-Factor Test suggests that when the first factor accounts for more than 50% of the total variance or has an eigenvalue exceeding 1, a single factor explains much of the correlation among variables (Zia, 2020). Given the eigenvalue of 21.742, it is evident that the first factor plays a significant role in explaining the dataset's variance, indicating convincing evidence for a dominant underlying factor relation with CMB (Asad et al., 2024). While this suggests high interrelatedness among variables, it is essential to remain cautious as other factors may also be relevant. Further analysis,

such as examining the scree plot or conducting additional factor analyses with different rotation methods, can provide insights into whether additional factors should be considered.

4.6 Demographic Profile of the Respondents

In this section the author describes the respondents in this study in terms of some of their demographic factors like age, gender, marital status, and education including some formal factors as well like capital, investment sources, employee count, ownership status, and time since SME exists. In total, with various sources, 500 questionnaires were dispatched to the registered respondents in the province of Punjab. After collecting the questionnaires, it was found to be 361 fully completed, which showed the 72.2% response rate.

Table 4.5
Demographic attributes

Gender	Frequency	Percent	Cumulative Percent
Male	312	86.40	86.40
Female	49	13.60	100.00
Single	113	31.30	31.30
Married	248	68.70	100.00
Below 30 years	43	11.91	11.91
31 years to 40 years	148	41.00	52.91
41 years to 50 years	86	23.82	76.73
51 years to 60 years	57	15.79	92.52
Above 60 years	27	7.48	100.00
No formal education	17	4.71	4.71
Higher secondary	95	26.31	31.02
Graduation	128	35.46	66.48
Master	78	21.61	88.09
PhD.	15	4.15	92.24
Professional	28	7.76	100.00
Total	361	100.00	

Source: Data extracted from the questionnaire received

The table presented above Table 4.5 illustrates the demographic characteristics of the respondents, with a total of 361 participants. The descriptive analysis reveals that most of the respondents were male, constituting 312 individuals, accounting for 86.40 percent of the sample. On the other hand, there were 49 female respondents, representing 13.60 percent of the total sample. Furthermore, when examining the marital status of the respondents, it is evident that a substantial proportion (248 out of 361) were married, making up 68.70 percent of the sample. In contrast, a smaller number (91 out of 361) reported being single, representing 25.30 percent of the sample.

Regarding the age distribution of the participants, 43 individuals were within the age group of 30, constituting 11.91 percent of the sample. The largest age group was between 31-40 years, comprising 148 respondents, and accounting for 41 percent of the total sample. The age group of 41-50 years had 86 respondents, making up 23.82 percent of the total sample. The fourth age group, which includes individuals aged 51-60 years, represented 15.79 percent of the sample. The smallest age group in terms of percentage was individuals over 60 years, with 27 respondents, representing 7.48 percent of the sample.

Table 4.5 also provides insights into the educational background of the respondents. A considerable proportion (128 out of 361) were graduates, making up 35.46 percent of the sample. The next highest group were individuals with standard higher secondary level education, accounting for 26.31 percent of the sample. Master's degree holders constituted 21.61 percent of the sample, with 78 respondents. A smaller percentage (4.71 percent) had no formal education, totaling 17 out of 361 respondents. Additionally, 4.15 percent of the respondents held a PhD, making up 15 individuals in the total sample. Lastly, 28 respondents had professional qualifications, representing

7.76 percent of the total sample. Overall, the study indicates that a substantial proportion (68.98 percent) of the respondents had educational qualifications beyond higher school education, suggesting that a significant percentage of owners/managers in small businesses in Pakistan possess higher levels of education.

Table 4.6
Business attributes

Business ownership	Frequency	Percent	Cumulative Percent
Sole	252	69.80	69.80
Partnership concern	109	30.20	100.00
Employees below 15	43	11.91	11.91
15 to 20	53	14.68	26.59
21 to 25	123	34.07	60.66
26 to 30	70	19.39	80.05
31 to 35	32	8.86	88.91
36 to 40	22	6.09	95.00
Above 40	18	5.00	100.00
Inception below 5 years	95	26.31	26.31
6 to 10	162	44.88	71.19
11 to 15	68	18.84	90.03
16 to 20	23	6.37	96.4
Above 20	13	3.60	100.00
Funding source Family	89	24.65	24.65
Personal	212	58.73	83.38
Friends	12	3.32	86.70
Banks or FIs	48	13.30	100.00
Total	361	100.00	

Source: Data extracted from the questionnaire received

The findings also revealed that a sizable portion, 252 small businesses, were structured as sole proprietorships, accounting for 69.8 percent of the total sample in this study. The remaining 30.20 percent represented partnership businesses, indicating that the organizational structure of small SMEs is simple and lacks extensive hierarchical levels. This pattern reflects the prevailing trend in Pakistan, where smallest businesses adopt the sole proprietorship model over partnership structures.

A deeper analysis of the results in Table 4.6 unveils that a substantial proportion, about 123 out of 361, employed a workforce of 21-25 employees, constituting 34.07 percent of the sample. Additionally, 70 out of 361 small SMEs, amounting to 19.39 percent, operated with a workforce ranging from 26 to 30 employees. Moreover, approximately 14.68 percent of the sample comprised small businesses with 16-20 employees. The distribution further revealed that 43 SMEs operated with below 15 employees, while another 31-35 employees accounting for 8.86 percent of the total sample. A smaller number of 22 SMEs had 36-40 employees, and merely 18 SMEs had more than 40 employees, making up only five percent of the total.

The study also revealed that most of the small SMEs were young, falling within the age bracket of 6-10 years, with 162 out of 361, contributing to 44.88 percent of the sample. The next prevalent age category was 1-5 years, accounting for 26.31 percent of the collected data, followed by SMEs aged 11-15 years, representing 18.84 percent of the total sample. Further examination indicated that 23 SMEs were aged between 16-20 years, with only 13 out of 361 surpassing 20 years of age. This diverse distribution of SME ages lent practical support to the assessment of the moderating impact of Information Technology (IT) on the connection between Total Quality Management (TQM), Entrepreneurial Orientation (EO), Knowledge Management Capabilities (KMC), and SME performance.

In terms of funding sources, the data in Table 4.6 highlighted that source originated from personal savings, representing 58.73 percent of the sample. Financing from family support accounted for 24.65 percent of the sample, involving 89 respondents. Capital obtained from friends constituted only around three percent of the total, while the role of banks and financial institutions (FIs) in capital arrangement was observed in 13.3

percent of the SMEs. However, these funding sources might prove insufficient for the expansion of small businesses, potentially impacting their growth performance in the context of Pakistan.

4.7 Descriptive Analysis of the Variables

The use of mean values and standard deviations are suitable for the measurement of central tendency and dispersion of data set (Mura et al., 2020). Considering this the study used mean values and standard deviation to measure the central tendency and data dispersion as descriptive statistics to observe the collected data response. Researchers conducted descriptive analysis here for all variables including endogenous, exogenous, and moderator as well. Table 4.7 below presents the statistical values of mean and standard deviation together with the variables and the result showed high mean values for all variables in the study.

Table 4.7
Variables' Descriptive

Study variables	Items count	Mean	Standard deviation
Total Quality Management (TQM)	12	4.65	1.36
Entrepreneurial Orientation (EO)	9	4.75	1.33
Knowledge Management Capability (KMC)	15	4.33	1.59
Information Technology (IT)	6	4.73	1.45
SME Performance (FP)	7	4.32	1.31

Source: Statistical Analysis

Table 4.7 illustrates the descriptive statistics of the variables, encompassing the mean values for the dependent, independent, and moderator variables, which ranged from 4.32 to 4.75. Specifically, the mean and standard deviation for TQM were found to be 4.65 and 1.36, respectively. This suggests that the owner/managers of SMEs possessed a moderate level of awareness regarding TQM practices. Additionally, Table 4.7 reveals that the mean value for IT was 4.73, accompanied by a standard deviation of

1.45, indicating that the awareness surrounding technological changes was of moderate level among owner/managers of SMEs. The study also indicates that the understanding of KMC within the context of SMEs in Punjab, Pakistan, was at a moderate level, as reflected by the mean value of 4.33 and a standard deviation of 1.59.

Among the variables, EO scored the highest mean value, standing at 4.75, with a corresponding standard deviation of 1.33. This high meaning signifies that owners/managers of small SMEs were well-acquainted with the significance of EO within the context of SMEs. Conversely, the dependent variable, SME performance, exhibited the lowest mean value and standard deviation among the variables. With a mean of 4.32 and a standard deviation of 1.31, this suggests that respondents held an average perception of SME performance in the given scenario.

4.8 Evaluating of a Measurement Model through PLS-SEM

Before moving step, it is very crucial to look around the construct reliability and analysis for validity including the outer loading constructs. Also need to consider the reliability of internal consistency, convergent and discriminant validity (Henseler et al., 2015). The model was assessed by using the PLS-SEM.

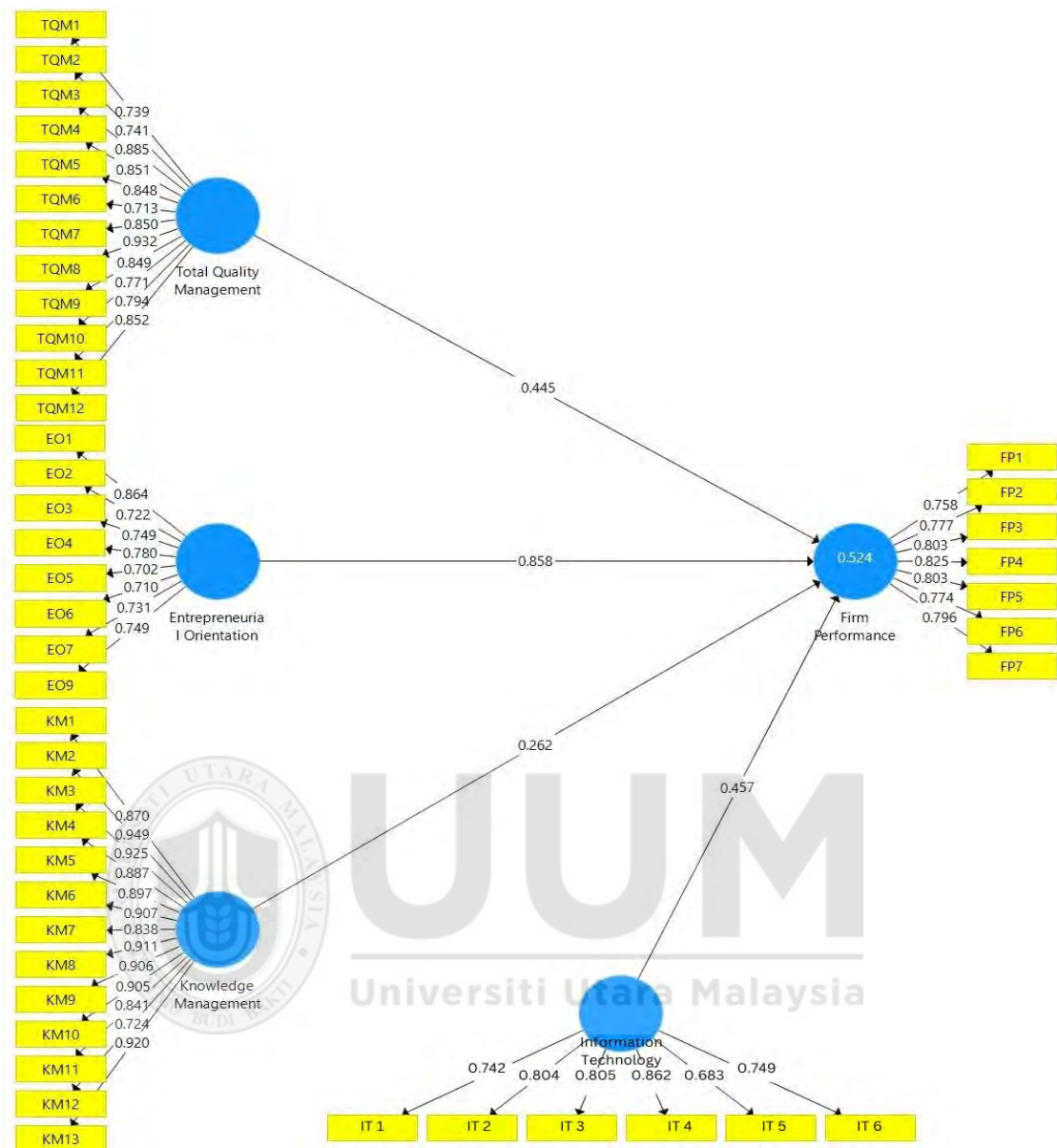


Figure 4.1

Measurement Model

Source: PLS-SEM software output

4.8.1 Outer loadings

The outer loading of a construct is a measure used to assess the accuracy and reliability of each item in a measurement scale (Hair et al., 2013). Previous literature advises that each item's reliability should be at least 0.4 to ensure the robustness of the measurement (Asad et al., 2023). In the context of exploratory research, it becomes crucial to have item loadings falling within the range of 0.4 to 0.7 (Asad et al., 2023). This range is

considered essential to ensure the validity and consistency of the assessment. In this study, all the measurement tools used demonstrated strong and statistically significant loadings on their respective constructs. Furthermore, each item's loading surpassed the recommended threshold of 0.5 (Mura et al., 2020), which is particularly crucial for exploratory research. These observations suggest that the measurement scale employed in this study exhibits an elevated level of internal consistency and reliability. The consistent and reliable measurement of constructs not only enhances the validity of the research findings but also boosts confidence in the study's overall conclusions. Consequently, the results of this study are more robust and can be relied upon with greater certainty.

Table 4.8

Outer loadings

Items	TQM	EO	KMC	IT	FP
TQM 1	0.799				
TQM 2	0.741				
TQM 3	0.885				
TQM 4	0.851				
TQM 5	0.848				
TQM 6	0.713				
TQM 7	0.850				
TQM 8	0.932				
TQM 9	0.849				
TQM 10	0.771				
TQM 11	0.794				
TQM 12	0.852				
EO 1		0.864			
EO 2		0.722			
EO 3		0.749			
EO 4		0.780			
EO 5		0.702			
EO 6		0.710			
EO 7		0.731			
EO 8		0.749			
KMC 1			0.870		
KMC 2			0.949		
KMC 3			0.925		
KMC 4			0.887		
KMC 5			0.897		

KMC 6	0.907	
KMC 7	0.838	
KMC 8	0.911	
KMC 9	0.906	
KMC 10	0.905	
KMC 11	0.841	
KMC 12	0.724	
KMC 13	0.920	
IT 1		0.742
IT 2		0.804
IT 3		0.805
IT 4		0.862
IT 5		0.683
IT 6		0.749
FP 1		0.758
FP 2		0.777
FP 3		0.803
FP 4		0.825
FP 5		0.803
FP 6		0.774
FP 7		0.796

TQM = Total Quality Management, EO = Entrepreneurial Orientation, KMC = Knowledge Management Capabilities, IT = Information Technology and FP = SME Performance.

Source: Statistical Analysis

4.8.2 Test of Reliability & Validity

It helps determine the extent to which a measure produces consistent and reliable results over time. Cronbach's alpha is a widely used measure of internal consistency reliability.

It assesses the extent to which items within a scale or construct are consistently measuring the same underlying concept. Higher values of Cronbach's alpha indicate greater internal consistency (Hair et al., 2020). The test of reliability assesses the stability of measurements over time. It involves administering the same test or scale to a group of participants on two separate occasions and calculating the correlation between the scores obtained at different points in time (Zia, 2020). Moreover, it has two more dimensions the one is the Parallel form's reliability which evaluates the consistency of measurements between two versions of a test or scale.

Table 4.9
Variables Reliability & Validity

Study variables	Cronbach's Alpha
Total Quality Management (TQM)	0.955
Entrepreneurial Orientation (EO)	0.891
Knowledge Management Capability (KMC)	0.977
Information Technology (IT)	0.875
SME Performance (FP)	0.901
Composite Reliability	
Total Quality Management (TQM)	0.961
Entrepreneurial Orientation (EO)	0.912
Knowledge Management Capability (KMC)	0.979
Information Technology (IT)	0.901
SME Performance (FP)	0.921
Average Variance Extracted (AVE)	
Total Quality Management (TQM)	0.674
Entrepreneurial Orientation (EO)	0.566
Knowledge Management Capability (KMC)	0.783
Information Technology (IT)	0.603
SME Performance (FP)	0.626

Source: Statistical Analysis

Ensuring construct reliability in research is a fundamental requirement, and one key aspect of it is discriminant validity. Discriminant validity assesses the extent to which a measurement scale does not exhibit strong correlations with other measures and demonstrates its distinctiveness from them (Mura et al., 2020). In simpler terms, discriminant validity evaluates the ability of measurement items to differentiate between different constructs without significant overlap. Scholars-like Hair et al. (2022), emphasize that establishing discriminant validity is pivotal in ensuring that the measurement instrument accurately captures unique aspects of each construct under investigation. To do this, researchers employ various methods and techniques to

Table 4.10

Discriminant validity

Study variables	TQM	EO	KMC	IT	FP
Total Quality Management (TQM)	0.821				
Entrepreneurial Orientation (EO)	0.689	0.752			
Knowledge Management Capabilities (KMC)	0.607	0.448	0.885		
Information Technology (IT)	0.576	0.456	0.143	0.777	
SME Performance (FP)	0.414	0.474	0.774	0.300	0.791

demonstrate that the measurement scale indeed assesses distinct and separate constructs

without significant confusion or overlap (Liu, 2024).

Source: Statistical Analysis

In assessing discriminant validity, researchers often refer to established guidelines. According to Cavana et al. (2001), it is recommended that the average variance extracted (AVE) should ideally be at least 0.50 to ensure adequate discriminant validity. Furthermore, to confirm discriminant validity, the square root of the AVE for each construct should be greater than the correlations between that construct and other variables (Cavana et al., 2001). These criteria are essential for validating the distinctiveness of constructs in a study. In the present research, Cavana et al. (2001) method was employed to assess discriminant validity. As demonstrated in Table 4.10, the study compared correlations among variables with the square root of the average variance extracted shown in bold. Notably, items exhibiting weak associations with their respective constructs were dropped from the analysis, enhancing the accuracy of the results. The diagonal bold values in the table represent the square root of the AVE for each construct. Adhering to the criteria set forth by Hair et al. (2022), where values should fall between 0.20 and 0.90, the remaining items in the analysis met the required thresholds. The same phenomena reflecting among the variables of current study in table 4.10. The values fall within the threshold with the minimum of 0.752 for EO and maximum of 0.885 in relation to KMC. This meticulous validation process ensures the appropriateness of evaluating the proposed hypotheses, enhancing the robustness and reliability of the study's findings (Hair et al., 2022).

4.9 Evaluation of Structural Model

Evaluation of the structural model is a crucial step in analyzing the relationships among latent constructs in structural equation modeling (SEM). It involves assessing the significance, strength, and overall fit of the hypothesized relationships of independent variables on dependent variables with the consideration of moderator.

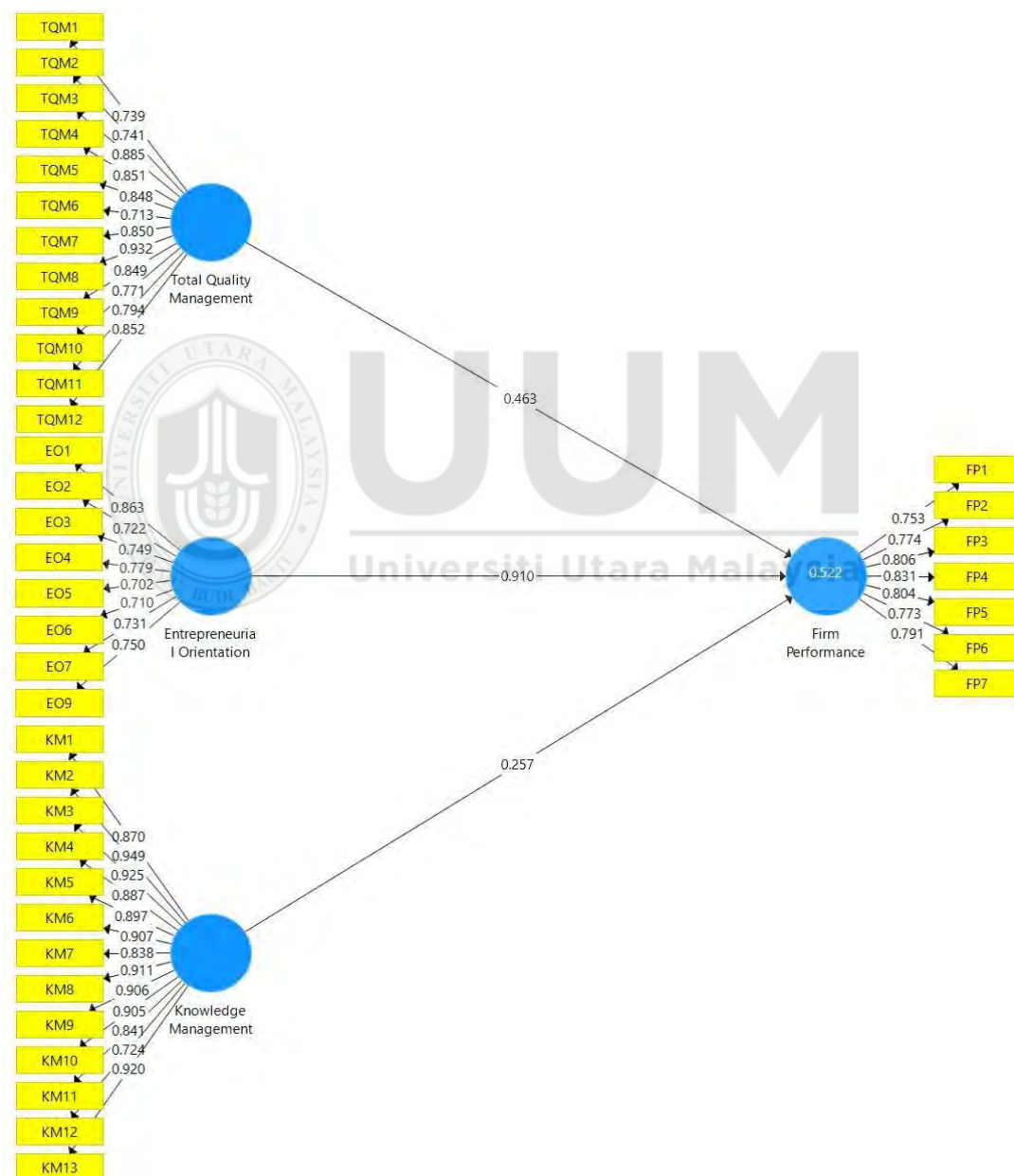


Figure 4.2
PLS Algorithm direct effect
Source: PLS-SEM software output

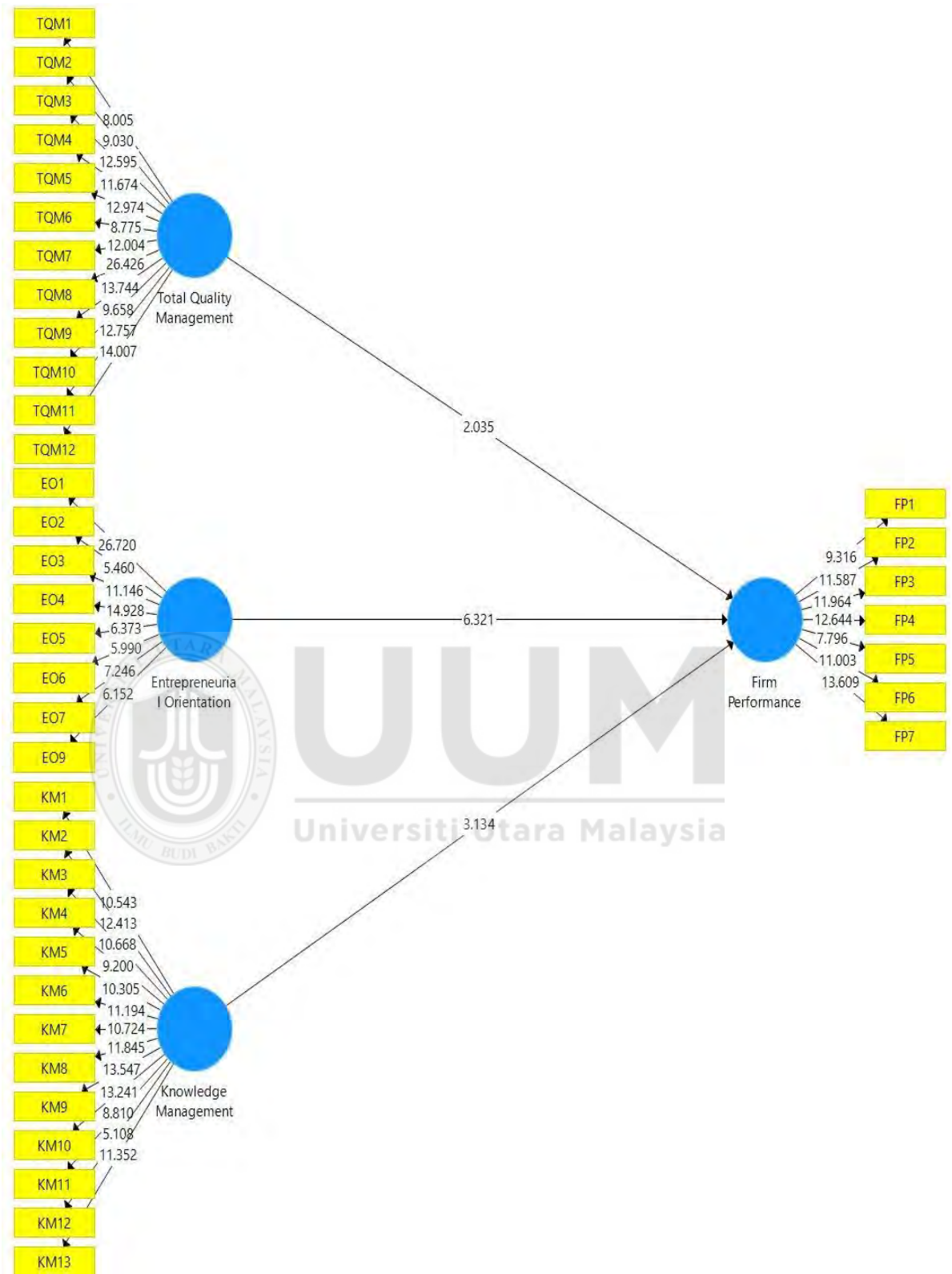


Figure 4.3
 PLS Bootstrapping direct effect.
 Source: PLS-SEM software output

4.9.1 Assessing Path Coefficients

In evaluating the structural model, researchers examine the path coefficients, which represent the strength and direction of the relationships between latent constructs. Path coefficients are typically assessed for significance using techniques such as bootstrapping, which provides p-values and confidence intervals for each path coefficient (Hair et al., 2013). Figure 4.3 visually illustrates the importance of interaction terms by highlighting the bootstrapping results.

Table 4.11
Path Coefficients

Terms	Original sample	Sample Mean (M)	Standard Deviation	T statistics	P values
TQM -> FP	0.463	0.439	0.228	2.035	0.042
KMC -> FP	0.257	0.237	0.082	3.134	0.000
EO -> FP	0.910	0.928	0.144	6.321	0.000

TQM= Total Quality Management, EO = Entrepreneurial Orientation, KMC = Knowledge Management Capabilities, and FP = SME Performance.

Source: Statistical Analysis

Examining Table 4.11 reveals the significance of the interaction terms between Total Quality Management (TQM) and performance ($t=2.035$; $p<1$), providing support for Hypothesis 1 (H1). Additionally, Hypothesis 2 (H2) gains support from the findings presented in Table 4.11, as they demonstrate significant effects of Entrepreneurial Orientation (EO) on performance ($t=6.321$; $p=0$). Similarly, Hypothesis 3 (H3) is corroborated by the results, which reveal the substantial impact of the interaction terms, Knowledge Management Capability (KMC) and performance ($t=3.134$; $p=0$). These comprehensive findings underscore the positive relationships between TQM, EO, KMC, and performance of SMEs.

4.9.2 Moderating Effect

A moderating effect, also known as the interaction effect, occurs when the relationship between two variables changes based on the value of a third variable. It indicates that the strength or direction of the relationship between the independent variable and the dependent variable varies depending on the level of the moderator (Asad et al., 2021).

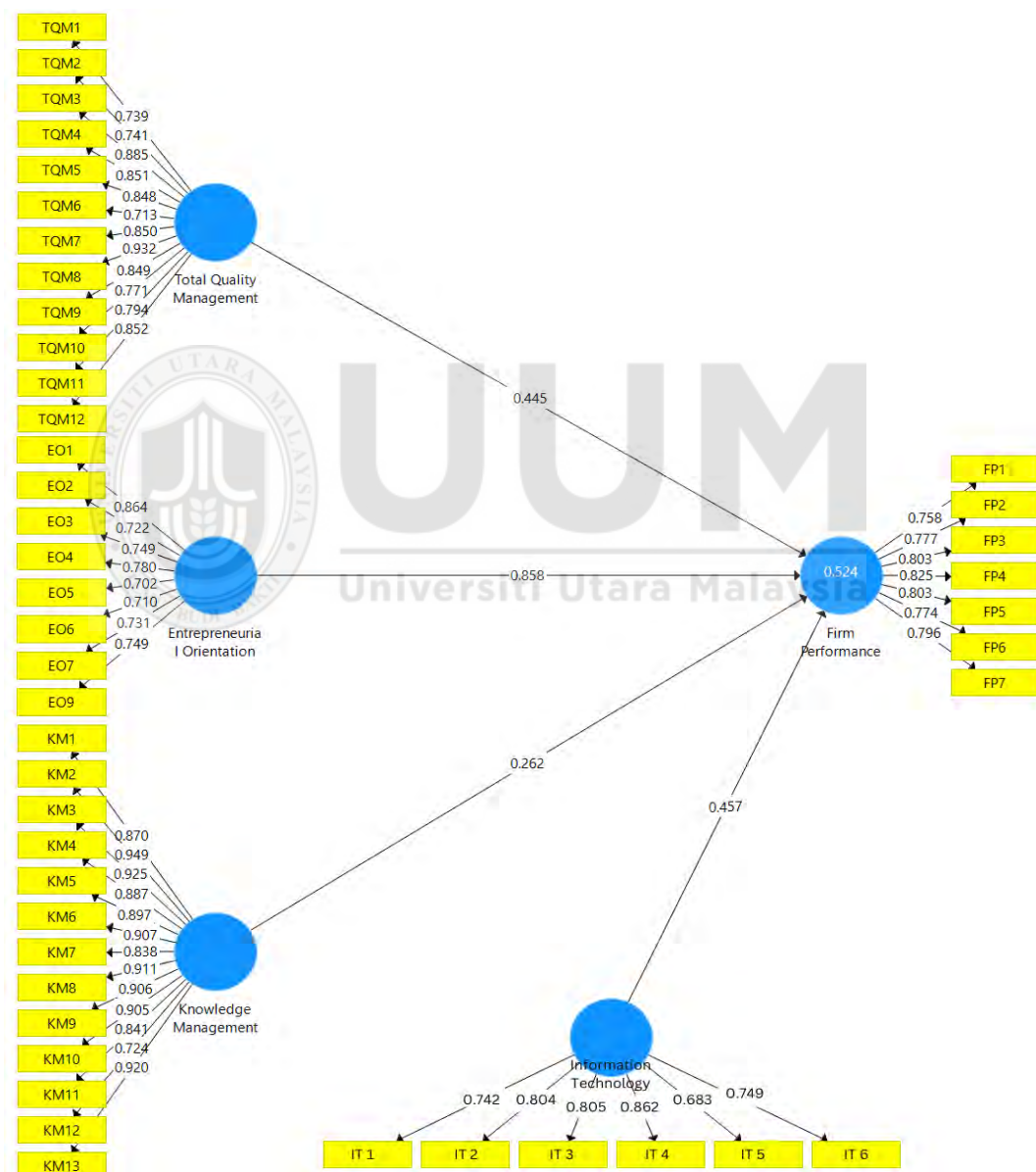


Figure 4.4
PLS Algorithm Moderator
Source: PLS-SEM software output

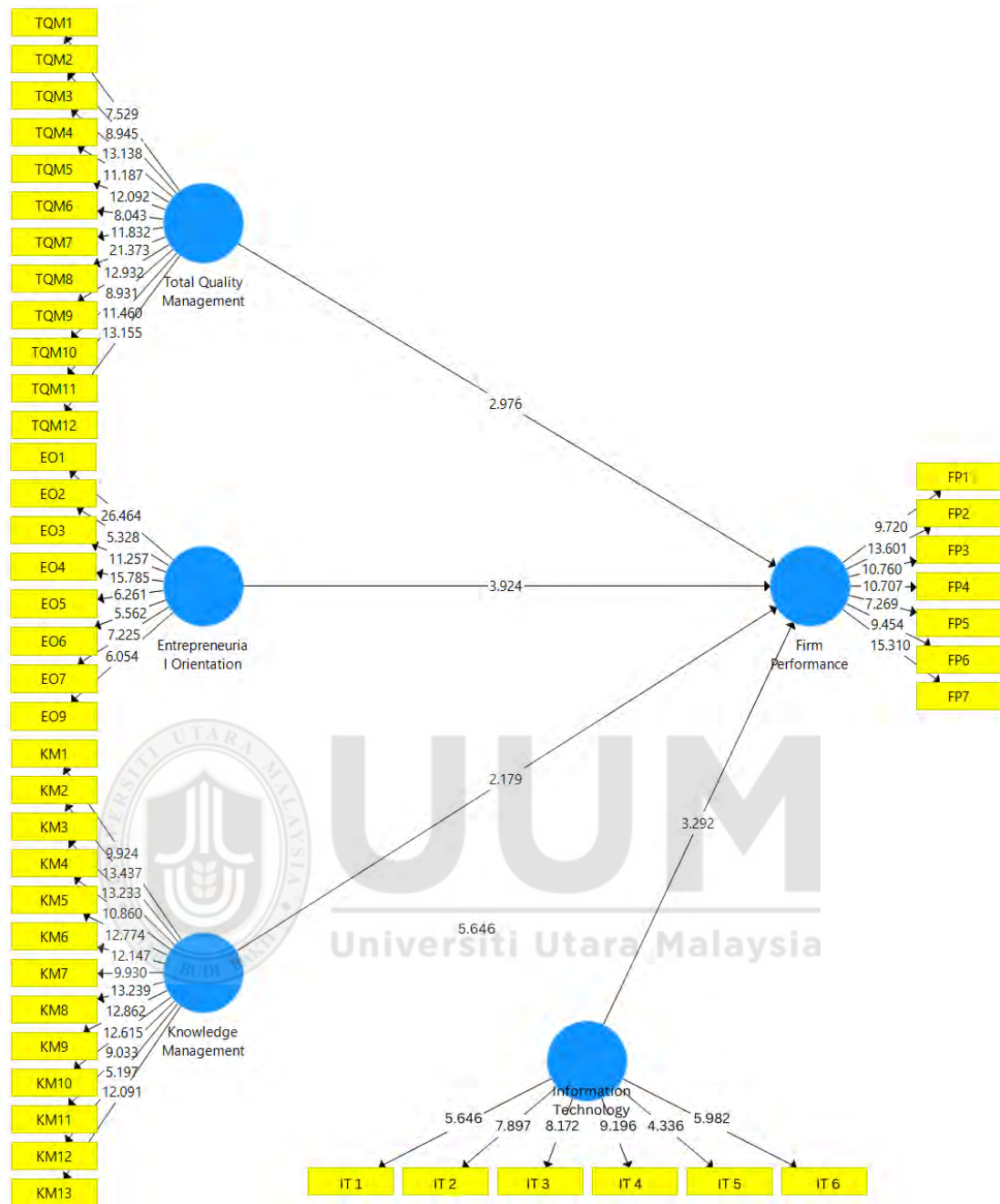


Figure 4.5
PLS Bootstrapping Moderator
 Source: PLS-SEM software output

Results of PLS bootstrapping with the moderator as indicated in figure 4.5, showed that the interaction terms were determined to be significant. It is evident that the interactions terms between Total Quality Management (TQM), Entrepreneurial Orientation (EO) and Knowledge Management Capabilities (KMC) together with the moderation of

Information Technology (IT) is significant on and the Small and Medium Enterprise (SME) performance. The PLS bootstrapping moderator figure 4.5 as the result showed t-statistics as 2.976 for TQM, 3.924 and 2.179 for EO and KMC, respectively. It also demonstrates significant effects of IT with t-stats as 3.292. According to the findings, the positive associations between TQM, EO and KMC on SME performance were moderated by IT (Chen & Onhg, 2016).

4.9.3 Testing Moderating Effect

When testing moderation, it is recommended to follow a three-step process (Asad et al., 2023). First, examine the main effects of the independent variables on the dependent variable. Next, consider the main effects of the independent variables and the moderator on the dependent variable. Finally, include the interaction terms by multiplying the independent variables with the moderator variable. The interaction terms represent latent interaction variables, which are assessed using the product of the indicators of the variables (Sarstedt & Cheah, 2019). The moderating effect is considered significant only when these interaction terms show statistical significance (Hair et al., 2013).

Using the procedure, we examined and reported the results of the interactive effects between the IT and the relationship between TQM, EO, KMC and SME performance. The moderation model, depicted in Figure 4.4 and Figure 4.5, evaluates whether including the moderating variable of the IT improves the prediction of SME performance based on TQM, EO and KMC. In Figure 4.4, the path assessment shows a positive path coefficient for the IT when it is included as an independent variable (Chavez et al., 2015). Correspondingly, Figure 4.5 demonstrates a meaningful relationship of the IT with the SME performance. Thus, we conclude that the IT

positively influences SME performance, and the model's explanatory power, as indicated by the R-squared value, improves from 0.522 to 0.524.

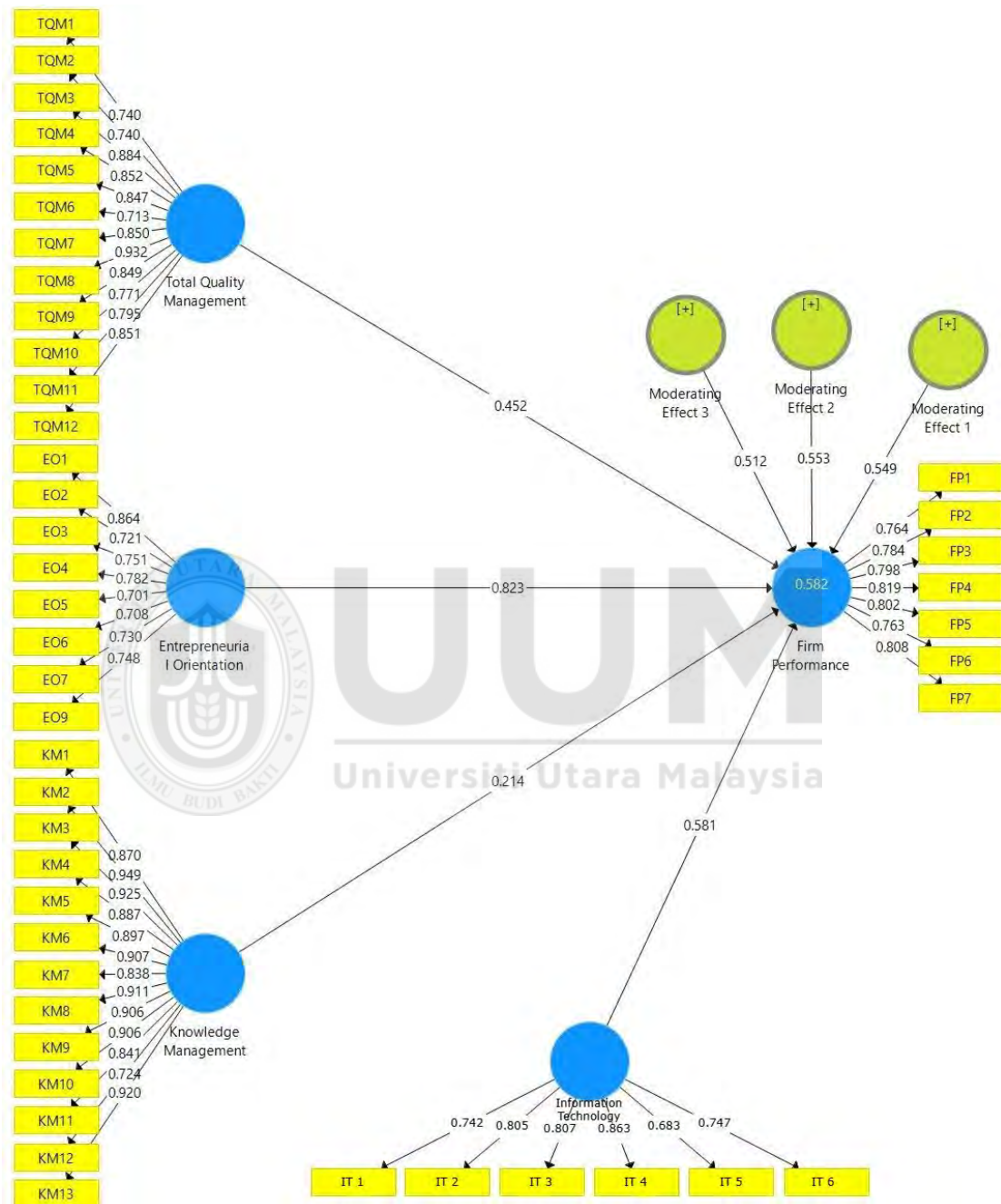


Figure 4.6
PLS-SEM Algorithm Moderator
Source: PLS-SEM software output

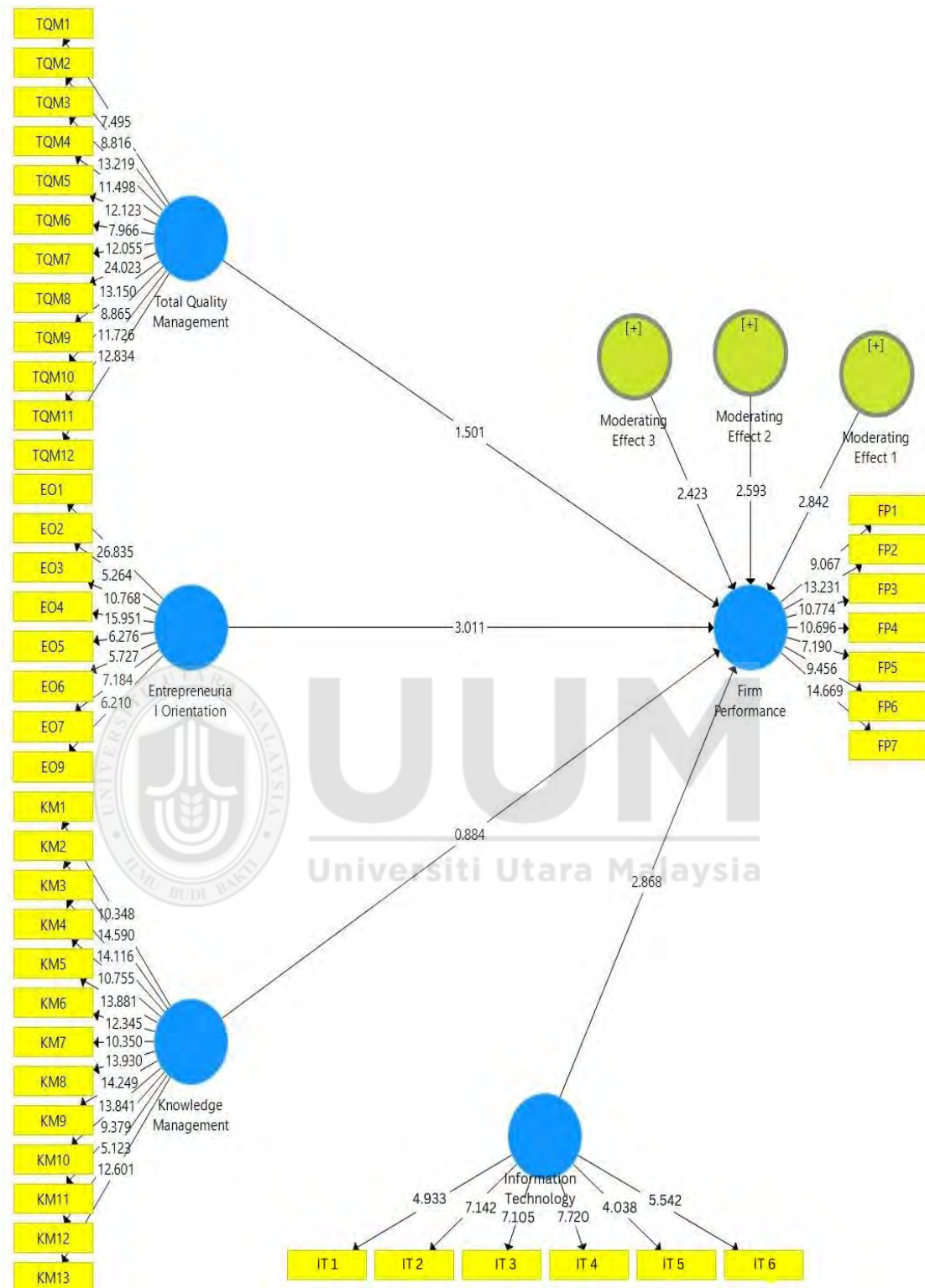


Figure 4.7
 PLS-SEM Bootstrapping Moderator
 Source: PLS-SEM software output

Table 4.12
Path Coefficients Moderating Effects

	Original Sample	Sample Mean (M)	Standard Deviation	T Statistics	P Values
EO -> FP	0.823	0.736	0.277	3.011	0.003
KMC -> FP	0.214	0.151	0.246	0.884	0.384
TQM -> FP	0.452	0.317	0.302	1.501	0.134
IT -> FP	0.581	0.252	0.209	2.868	0.387
Moderating effect 1 -> FP	0.549	0.397	0.414	2.842	0.003
Moderating effect 2 -> FP	0.553	0.157	0.258	2.593	0.004
Moderating effect 3 -> FP	0.512	0.551	0.360	2.423	0.005

TQM= Total Quality Management, EO = Entrepreneurial Orientation, KMC = Knowledge Management Capabilities IT = Information Technology, and FP = SME Performance, Moderating effect 1 = IT over TQM & FP, Moderating effect 2 = IT over EO & FP, and Moderating effect 3 = IT over KMC & FP.

Source: Statistical Analysis

By using the PLS-SEM analytics together with the moderating effects in relation with each independent variable on SME performance as indicated in figure 4.7, the interaction terms were determined to be significant. It is evident from table 4.10 that the interactions terms between TQM and the IT is significant ($t=2.842$; $p<1$), and as a result, H4 is supported. Like the result shown in Table 4.12, H5 is also supported because it does demonstrate significant effects of the EO and IT as ($t=2.593$; $p<1$). Similarly, H6 is also supported because Table 4.12 results demonstrate that the interaction terms, KMC and IT as ($t=2.423$; $p<1$), has appreciable influence on the results. According to the findings, the positive associations between TQM, EO and KMC on the one hand and SME performance on the other side were moderated by IT.

4.9.4 Evaluating Effect Size

In addition to assessing statistical significance, evaluating the effect size of the path coefficients provides insights into the practical significance of the relationships. Effect sizes such as standardized path coefficients, beta weights, or explained variances can

be used to measure the strength of the associations between constructs (Mura et al., 2020).

4.9.5 Predictive Relevance

Assessing the predictive relevance of the structural model examines its ability to accurately predict the dependent variables. Researchers can use metrics like R-squared, Q-squared, and cross-validated redundancy index (Q^2) to evaluate the model's predictive power.

Table 4.13

Construct Cross-validation Redundancy.

	SSO	SSE	Q^2 (1-SSE/SSO)
SME Performance	350.000	235.665	0.327

Source: Statistical Analysis

4.9.6 Model Fit Indices

Model fit indices help evaluate the overall goodness-of-fit of the structural model. These indices assess how well the hypothesized model fits the observed data. Commonly used fit indices include the chi-square goodness-of-fit test, comparative fit index (CFI), Tucker-Lewis's index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) (Umair & Dilanchiev, 2022).

4.9.7 Determination “R – Square”

R-squared (R^2) is a measure that represents the proportion of the variance in the dependent variable that can be explained by the independent variables in a statistical model. It is often referred to as the coefficient of determination. R-squared ranges from 0 to 1, where a value of 1 indicates that the independent variables explain all the

variation in the dependent variable, and a value of 0 indicates that the independent variables have no explanatory power (Hair et al., 2022).

R-squared is calculated by squaring the correlation coefficient (r) between the observed values of the dependent variable and the predicted values from the statistical model. It represents the proportion of the total sum of squares of the dependent variable that is accounted for by the statistical model. While R-squared provides an overall measure of the goodness-of-fit of the statistical model, it has limitations (Umair & Dilanchiev, 2022). It does not indicate whether the model is causally valid or whether the included independent variables are the best predictors. Additionally, R-squared tends to increase with the addition of more independent variables, even if those variables have little practical significance.

Table 4.14
Summary of Hypothesis Findings

H ₁	There is a significant relationship between Total Quality Management (TQM) and SME performance.	Accepted
H ₂	There is a significant relationship between Entrepreneurial Orientation (EO) and SME performance.	Accepted
H ₃	There is a significant relationship between Knowledge Management Capabilities (KMC) and SME performance.	Accepted
H ₄	Information Technology (IT) moderates the relationship between Total Quality Management (TQM) and SME performance.	Accepted
H ₅	Information Technology (IT) moderates the relationship between Entrepreneurial Orientation (EO) and SME performance.	Accepted
H ₆	Information Technology (IT) moderates the relationship between Knowledge Management Capabilities (KMC) and SME performance.	Accepted

4.10 Chapter Summary

In this chapter, we conducted a statistical analysis of quantitative data obtained from a questionnaire distributed in the sports sector SMEs in Pakistan. The analysis included various steps. Firstly, we examined the response rate and evaluated for non-response bias. Next, we performed an initial data examination and screening, which involved

assessing missing values, identifying outliers, testing for normality, and evaluating multi-collinearity. Subsequently, we presented the characteristics of the sample and proceeded with the measurement model and structural model assessment using PLS-SEM. The analysis was conducted using the Smart PLS 3.0 software over exogenous as well as moderating variables (Aftab et al., 2022). Following that, we reported the results of hypothesis testing based on the evaluation of the inner model. Lastly, we discussed the determinations of R-Square, and summary of hypothesis evaluated findings on SME performance.



CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

In this chapter, we concentrate on discussing the research findings, aligning them with the research objectives, research questions, hypotheses, and relevant literature review. Furthermore, we outline the theoretical and practical contributions of this study's findings and examine their implications. We also address the limitations of the research and suggest potential avenues for future research. Lastly, we provide a comprehensive conclusion summarizing the key outcomes of the study by considering the feedback responses of owners and managers as representatives of the business. According to Umair & Dilanchiev (2022) Owners and managers are considered representatives of an organization due to their roles and responsibilities in shaping, directing, and leading the organization (Asad et al., 2021). Here are several justifications for this statement according to the various roles performed by them as follows.

5.2 Recapitulating of Study

This area of write-up covers the discussion of the results research questions in relation to the research objectives. Therefore, in light of the results as it is evidenced that in the sports goods manufacturing sector of Pakistan, Total Quality Management (TQM), Entrepreneurial Orientation (EO), and Knowledge Management Capabilities (KMC) have significant positive impact on performance in this study as well as the same results supported in other studies also (Ali et al., 2020; Gomezel & Alesksic, 2020; Anand et al., 2021; Crespo et al., 2021). Perhaps, because of the inconsistencies in results of previous studies in relation with TQM, EO and KMC on performance, Information

Technology (IT) in terms of using the IT tools for information management and effective use of it taken as moderator. Let us explore the relationship of IT with each of these concepts starting with reference to TQM. IT systems in manufacturing enable efficient data collection and analysis across various quality metrics, including product defects, customer feedback, and production processes. Analysis using software tools helps identify areas for improvement. Additionally, IT automates quality control processes, ensuring consistency, invasiveness and reducing human error in manufacturing and distribution (Umair & Dilanchiev, 2022). Moreover, real-time monitoring through IT systems enables immediate corrective actions in response to deviations, enhancing overall quality management.

Similarly, IT moderate role of EO in enhancing the performance of sports good manufacturing sector. It enables entrepreneurs to gather and analyze market data effectively, leveraging online surveys, social media analytics, and e-commerce platforms to understand consumer preferences, market trends, and competitors' strategies by using the customer centric approach for improving customer experience (Asad et al., 2022; Aftab et al., 2022). With access to robust data analytics tools, entrepreneurs can identify emerging opportunities and tailor their offerings to meet evolving demands. Moreover, IT empowers entrepreneurs to establish and scale their businesses through e-commerce platforms, extending their reach beyond geographical boundaries. Digital marketing strategies such as social media marketing, and email marketing capitalize on IT tools to enhance brand visibility, customer engagement, and sales conversions (Asad et al, 2018; Kashif et al., 2020). Innovation is facilitated by IT through access to design software, simulation tools, and virtual prototyping technologies, enabling collaboration across locations and fostering creativity in product development. Advanced analytics and forecasting tools within IT systems further

empower entrepreneurs to anticipate demand fluctuations, manage supply chain risks, and adapt swiftly to market changes (He & Li, 2021).

Additionally, as per the results showed that IT is equally evidenced as moderator for KMC in the sports goods manufacturing sector to enhance its performance. It facilitates the creation of online platforms and databases for sharing knowledge and best practices among employees, suppliers, and stakeholders. Furthermore, IT as moderator also enables centralized document management systems, storing critical information such as product specifications and market trends (He & Li, 2021). The knowledge retention and analysis by using the IT is equally useful to develop market intelligence, pricing, and marketing communication capabilities to improve the SMEs' performance (Asad et al., 2023). Collaboration is enhanced through collaborative software and communication platforms, fostering innovation and knowledge exchange among teams. In Pakistan's sports sector, effective utilization of IT in conjunction with TQM, EO, and KMC has moderating impact. Hence, it is evidenced that IT as a moderator plays a crucial role in facilitating various aspects to improve performance.

Therefore, hypothesize that the three independent variables such as TQM, EO and KMC have a positive impact on SME performance (Ali et al., 2020; Gomezel & Alesksic, 2020; Anand et al., 2021). Additionally, we hypothesize that IT. moderates the relationship to achieve the research objective, data was collected from various SMEs using a survey-based questionnaire. A seven-point Likert scale was utilized to measure all the items in the questionnaire. The constructs used in the questionnaire were derived from previous research studies and were modified based on feedback from experts, including academicians and practitioners. This was done to ensure the face and

content validity of the constructs in the context of Pakistan, aiming to enhance the quality and relevance of the survey results.

In accordance with the primary aim of the study, specific objectives were formulated based on the research questions derived from the problem statement in the preceding chapters. By examining these relationships, opportunities for enhancing the performance of SMEs can be identified. The conceptual framework is grounded in the Resource-Based View (RBV) theory, which suggests that SME performance is influenced by valuable tangible and intangible resources. Therefore, empirically evaluated the relationships, a total of six hypotheses were formulated and analyzed using PLS-SEM with the Smart PLS 3.0 software. The findings from empirical analysis provide support for six hypotheses.

The following are detailed discussion on the findings indicate that the implementation of TQM and EO combined with KMC, can offer effective strategies for small businesses to enhance their performance and ensure sustainability (Ali et al., 2020). Furthermore, the discussion is structured around exogenous variables and IT as moderating variables. The whole discussion based on some primary objectives of the study, elaborated in two sections as follows systematically.

5.3 Relationship between TQM, EO, KMC and SMEs performance in Sports goods sector of Pakistan

The study has a main goal is to investigate the beneficial relationship between TQM, EO, KMC and the performance of SMEs in Pakistan pertaining to the sports goods industry. To reflect the positive correlation between TQM and SME performance, EO

and SME performance, and KMC and form performance three hypothesis were proposed.

5.3.1 Relationship of TQM and SME Performance

To start the discussion with TQM, referring to the previous research on TQM reveals various approaches used to measure the TQM construct, aiming to comprehensively capture its essential components. In this study, a construct was developed to assess TQM based on these findings from the literature. The construct of TQM was carefully articulated by incorporating several fundamental components identified in the reviewed literature (Muhammad et al., 2018; Asad et al., 2020). The concept of TQM originated with the practice of visually inspecting individual finished products by workers. This initial approach involved a simple inspection-based system where workers would visually assess the quality of each product. If an item were found to be of mediocre quality, it would either be discarded or sold at a discounted price. In more severe cases, the item would be reworked completely to meet the desired quality standards. This early stage of TQM focused primarily on identifying and addressing quality issues at the product level through inspection and corrective actions.

Thus, TQM in SMEs has been to enhance product quality and utilize a range of statistical tools and methodologies. TQM serves as a critical driving force that significantly contributes to improved performance, particularly in larger foreign SMEs that prioritize quality and meeting consumer demands (Asad et al., 2020; Hilman, 2020). This study examined the perceptions of owners and managers regarding the importance of TQM as a component for societal value addition. It investigates how TQM practices support employees in reducing the rate of product defects and contributes to advancements in products. Additionally, the study explores the role of

TQM in ensuring employee performance through the establishment of effective systems for quality checks and balances. Furthermore, it seeks to identify areas where training is required, this study aims to provide insights into the multifaceted impact of TQM on various aspects of SME performance and quality enhancement.

As stated in the literature review, TQM encompasses interconnected components that encompass maintaining quality at all levels, including a focus on customers and products. These elements enable SMEs to make confident business decisions. Therefore, this study emphasizes the significance of SMEs adopting TQM practices to enhance SME performance. In summary, the findings suggest that SMEs in Pakistan should implement TQM to identify areas for improvement and drive their business towards higher performance. Hypothesis 1 (H1) proposed that TQM has a positive relationship with SME performance. The results of the empirical analysis support this hypothesis, revealing a significant positive relationship between TQM and SME performance. This finding aligns with previous research studies that have also demonstrated a positive influence of TQM on SME performance (Hilman, 2020; Asad et al., 2021). These previous studies have consistently argued that TQM plays a crucial role in enhancing SME performance (Haroon & Sharif, 2016; Imran et al., 2018; Hilman, 2020; Asad et al., 2020).

5.3.2 Relationship of EO and SME performance

Secondly, EO refers to the entrepreneurial ethos within a business, which reflects its level of pro-activeness, risk-taking, and innovation. Hypothesis 2 (H2) proposed that there is a positive relationship between EO and SME performance. The empirical analysis conducted in this study supports H2, revealing a statistically significant and positive association between EO and SME performance. This finding aligns with prior

research studies that have consistently argued for the positive influence of EO on SME performance. These studies emphasize that SMEs with a higher level of EO tend to exhibit improved performance outcomes. Thus, the empirical results of this study are consistent with the existing body of literature, further supporting the notion that EO positively impacts SME performance (Buli, 2017; Haider et al., 2017; Muhammad et al., 2018; Asad et al., 2018; He & Li, 2021).

Hence, the discovery not only supports the idea but also offers a solution to the relevant research problem. In overall, the outcome conforms then beneficial impact of this VRIN resources on the SME's performance, adding more evidence to support the claim that the RBV is a theory of strategic orientation (Asad et al., 2018). Based on the assessment of the literature, EO encompasses interconnected characteristics such as innovation, proactivity, and taking and welcoming of risk profile. These components empower businesses to make bold and daring decisions. The significance of EO for SMEs is emphasized in this study due to its potential impact on SME performance. The findings suggest that SMEs in Pakistan's sports goods manufacturing industry would benefit from developing EO skills. These SMEs can actively seek out new opportunities and take calculated risks, which in turn can lead to improved performance outcomes. In summary, the study underscores the importance of EO for SMEs in the sports goods manufacturing industry in Pakistan, highlighting how it can enable them to identify and seize new opportunities while taking calculated risks to enhance their overall performance.

5.3.3 Relationship of KMC and SME performance

The third hypothesis (H3) examined the relationship between KMC and SME performance. KMC refers to a knowledge-based philosophy that involves gathering information about consumer needs and preferences (Abubakar et al., 2019). This information is then utilized to satisfy customers through activities such as customer analysis, collecting strategic data on competitors, and coordinating various performance milestones across distinct functions within the SME. Contrary to initial expectations, the findings of this study provided limited support for the hypothesis, suggesting that KMC has a partial influence on other variables beyond its direct impact on SME performance. In other words, while KMC does have a positive relationship with SME performance, its influence is not solely one-dimensional. Instead, it extends to other factors and aspects of the SME.

These results align with certain earlier studies that have also found a positive association between KMC and SME performance. However, it is important to note that the findings in this study indicate that KMC's impact on SME performance is not the sole driver but is influenced by other factors as well. Overall, these findings highlight the multidimensional nature of the relationship between KMC and SME performance. While KMC plays a role in driving performance, its effects are intertwined with other variables within the SME (Byukusenge et al., 2016; Abubakar et al., 2019; Albassami et al., 2019; Baporikar, 2020; Anand et al., 2021). This underscores the complexity and interconnectedness of formal processes and factors that contribute to overall performance outcomes.

Considering the existing reasons and evidence that support the impact of KMC on SME performance, this finding shed light on several theories that may explain this discovery.

One plausible explanation could be rooted in the understanding that KMC, like information sharing and transfer, is sensitive to the formal context (Anand et al., 2021). It is crucial not to overlook the importance of integrating goods, processes, and business systems to enhance the knowledge base within the SME. Additionally, this finding may be attributed to the fact that KMC represents the approach through which businesses continually explore their stakeholders and influential entities to gain deeper insights and understanding.

The hypothesis suggesting a direct relationship between KMC and SME performance is an expectation that can be observed and evaluated in the data. However, it is important to consider that methodological variations or the absence of moderating variables could be a factor contributing to the support of this assumption in the study. The fact that the direct relationship between KMC and SME performance was not always found does not imply that KMC is not crucial for the success of the SME. Rather, it suggests that there might be other factors at play or moderating variables that influence the relationship between KMC and SME performance. In the context of this study, it is possible that the indirect association between KMC and SME performance is affected by a moderating variable. This means that while the direct relationship may have slight variation in the level of significance, there could still be an impact of KMC on SME performance through another variable that interacts with or moderates the relationship.

It is essential to explore these potential moderating factors and consider their influence on the relationship between KMC and SME performance. By accounting for such factors, a more comprehensive understanding of the association between KMC and SME performance can be gained. In summary, the slight weakness in the relationship

between KMC and SME performance in the study does not undermine the significance of KMC for SME success crucially in case of SMEs and particularly in Pakistan scenario. Although, in this study IT taken as moderating variables for all exogenous variables including KMC, but still there is a margin to incorporate further investigate potential moderating variables that may influence the relationship and explore the association between KMC and SME performance (Gold et al., 2015; Clark et al., 2024).

5.4 The moderating role of Information Technology

The concept of Information Technology (IT) in this study application technological tools in terms of information management and its effective use (He et al., 2021; Celik, 2023). It holds significant importance in the field of general management and is widely recognized as a catalyst for SME performance. In today's dynamic environment, characterized by intense competition and rapid technological advancements, IT is considered a highly influential factor as moderator in gaining a competitive edge by effective management of information (He et al., 2021). When IT is prevalent in the market, technology assumes a critical role in driving the development of products, altering procedures, and reshaping industry norms by using Artificial Intelligence tools in present days (Celik, 2023). It brings about significant changes that are often difficult to predict (Khalil et al., 2018). These changes can be related to technological advancements, market disruptions, or shifts in consumer preferences (Clark et al., 2024). Businesses that fail to keep up with these technological developments and do not swiftly adapt their strategies and SME structures to align with the changing technology are likely to face various negative consequences (Adomako et al., 2022).

The repercussions of not effectively managing IT can be severe for businesses. They may experience declining market share, reduced competitiveness, and decreased

profitability (Clark et al., 2024). Additionally, their products or services may become outdated or less desirable to customers, leading to a loss of customer loyalty and decreased sales. To thrive in the face of IT, SMEs need to proactively embrace technological advancements, continuously monitor the market, and swiftly respond to changing business needs. They should adopt agile strategies, foster a culture of adopting the changing world, and develop the capability to quickly integrate modern technologies into their operations. By effectively managing IT, SMEs can position themselves as industry leaders and achieve sustainable growth in a rapidly evolving business landscape (Kapoor & Lee, 2013; Clark et al., 2024; Asad et al., 2021).

Technological reform processes pose significant challenges in transitional economies such as Pakistan, leading to increased complexity and uncertainty. These challenges arise from numerous factors, including changes in investment regulations, evolving legislation, legal barriers, financial guidelines, and shifting government policies. These elements are critical economic drivers in highly competitive technological environments. In this study, the moderating effect was examined using the method proposed by Baron and Kenny (1986). A moderator is a factor that could influence the strength and direction of the relationship between predictors and the outcome variable (Baron & Kenny, 1986). The criteria for establishing the validity of the moderation effect, as outlined by Baron and Kenny (1986), include the requirement that the interaction term between the moderator and the predictors is statistically significant.

In other words, when analyzing the moderating effect, the study looked at how the relationship between the predictors and the outcome variable changes based on the presence of the moderator. If the interaction term is found to be statistically significant, it suggests that the moderator has a meaningful influence on the relationship. By

employing the method proposed by Baron and Kenny (1986), this study aimed to assess the extent to which the moderator affects the relationship between the predictors and the outcome variable. It allowed for a deeper understanding of how varied factors can shape and modify the relationship under investigation.

The objective in this study focuses on investigating the moderating role of IT on the relationship between TQM, EO, KMC, and the performance of SMEs in the sports goods manufacturing industry in Pakistan. To achieve this objective, three hypotheses (H4, H5, and H6) were formulated and evaluated. However, the results of the analysis indicated that all the three hypotheses related to the moderating role of IT were found to be statistically significant. This means that the study found sufficient evidence to support the idea that IT has a significant impact on the relationship between TQM, EO, KMC, and SME performance.

Despite the significant results, it is important to note that this does not imply that IT is irrelevant or without any influence on the variables under investigation. It simply means that in the context of this study and the specific sample of sports goods manufacturing SMEs in Pakistan, the moderating role of information technology showed a significant effect on the relationship between TQM, EO, KMC, and performance (Ali et al., 2020 Anand et al., 2021). These findings highlighted further research into potential moderating factors or to investigate the moderating role of IT in different industries or contexts.

The moderating analysis yielded significant results indicating the impact of IT on three independent variables, namely TQM, EO and KMC in relation to the performance of SMEs. The results are presented in Table 4.9 and indicate significant coefficients for the variables. These findings provide support for hypothesis H4, H5 and H6 proposed

in this study. The findings suggest that in the sports goods manufacturing industries of Punjab, Pakistan, IT does play a moderating role in shaping the relationship between TQM, EO, KMC and SME performance (Alembummah, 2015; Buli, 2017; Aftab et al., 2022; Clark et al., 2024). These results emphasize the need for further research to explore additional factors that may also moderate the relationship between TQM and SME performance, particularly in the context of other sectors of SMEs in Pakistan. It is important to gain a deeper understanding of the dynamics and influences that impact the performance of small businesses in varying turbulent conditions pertaining to the way we use of information in business (Clark et al., 2024).

However, this study highlights a positive correlation between Pakistan's information technological environment and SME productivity and performance in the SME sector, it also reveals that the IT poses significant challenges for entrepreneurial SMEs in the country. The current IT environment in Pakistan lacks adequate support for SMEs, making other SME strategies appear too risky when the IT is not favorable. Consequently, SMEs are discouraged from adopting an optimistic view of IT, as they perceive increased risks and vulnerability to the ever-changing technological landscape. Instead of proactively embracing the opportunities presented by the IT, SMEs in Pakistan tend to adopt a cautious and vigilant approach. The weak adoption of IT, particularly in the SME sector, has led many businesses to move to neighboring countries in search of more favorable conditions. Consequently, based on the findings of this study, it is unlikely for SMEs in Pakistan to fully realize their potential due to the non-supportive environment they operate within.

The level of IT, i.e., the abundance and availability of technological resources to manage the information, can significantly impact SMEs if it offers opportunities rather

than disadvantages. SMEs need to recognize the importance of effectively and efficiently utilizing their SME's resources to mitigate the adverse effects of the external environment concerning the adoption of advanced technologies. In conclusion, while the study identifies the positive linkage between Pakistan's technological environment and SME performance in the SME sector, it also sheds light on the challenges posed by IT. To thrive in such an environment, SMEs should focus on resource optimization and seek opportunities to leverage technological advancements. This may require collaboration and knowledge-sharing among SMEs to collectively navigate the complex technological landscape and remain competitive in the business.

5.5 Research Contributions

The performance of small and medium-sized enterprises (SMEs) has garnered significant attention from governments, practitioners, and academic researchers in the fields of strategic management and entrepreneurship. This research work has yielded valuable findings that carry important implications for the performance of SMEs, particularly within the context of Pakistan.

The findings of this study offer practical insights for policymakers and government entities responsible for supporting and promoting SMEs. The identified variables influencing SME performance can guide the formulation of targeted policies and programs aimed at enhancing SME performance in Pakistan. This could include initiatives related to technology adoption, access to financing, entrepreneurial culture, and knowledge management, among others.

This research contributes to the existing theoretical literature on SME performance by validating the relationships between numerous factors and their impact on performance.

The study considers the significance of variables such as TQM, EO and KMC together with moderating role of IT in influencing SME performance. These findings further enrich theoretical understanding of how these factors interact and contribute to SME success. The research methodology employed in this study, including data collection methods, statistical analyses, and measurement scales, can serve as a reference for future studies in the field of SME performance. The study highlights the importance of rigorous empirical investigations in examining the relationships between variables and their impact on SME performance, providing guidance for researchers.

In summary, the findings of this research have important implications for practitioners, policymakers, and researchers alike. By considering these implications, stakeholders can make informed decisions and take actions to improve the performance of SMEs in Pakistan. The practical, theoretical, and methodological insights derived from this study contribute to the body of knowledge in the field of SME performance and can guide future research endeavors. The implications of this study can be categorized into practical, theoretical, and methodological aspects, which are discussed in detail in the following sub-sections.

5.5.1 Practical Contribution

Small and medium-sized enterprises (SMEs) have gained recognition as significant drivers of employment, economic growth, and poverty alleviation (SMEDA, 2021). The decisions made by government officials and policymakers have a direct influence on the operations and outcomes of these enterprises. It is imperative for government entities and policymakers to understand the steps they can take to enhance the performance and sustainability of SMEs in Pakistan. This entails exploring potential measures and initiatives that can be implemented to support SMEs effectively.

Recognizing the crucial role of SMEs, the government and policymakers should consider the following areas for improvement:

Creating a favorable regulatory environment is essential for SMEs to thrive. Government officials and policymakers should work towards simplifying bureaucratic procedures, reducing red tape, and streamlining business registration and licensing processes. This can contribute to an enabling environment for SMEs and encourage their growth and development (Asad et al., 2023).

TQM & EO is a significant challenge for SMEs in Pakistan. Government and policymakers can introduce initiatives to enhance factorial inclusion, such as providing quality at all levels, promoting entrepreneurial dimensions, and facilitating the development of skilled networks. Supporting SMEs in TQM & EO can fuel their growth and enable them to invest in innovation and expansion (Asad et al., 2020; Aftab et al., 2022).

Enhancing the capacity and skills of SME owners and employees is crucial for their long-term success. Government and policymakers can collaborate with educational institutions, industry associations, and training SMEs to provide targeted programs and workshops that address the specific needs of SMEs. These initiatives can focus on areas such as entrepreneurship, management, marketing, and technological skills (Byukusenge et al., 2017; Zia, 2020).

Encouraging innovation and research and development (R&D) activities among SMEs is crucial for their competitiveness. Government and policymakers can establish grants, incentives, and support mechanisms to enable SMEs to invest in R&D, adopt modern technologies, and develop innovative products and services. This can enhance the

overall performance and productivity of SMEs. By focusing on these areas, the government and policymakers can create an environment that promotes the growth, performance, and sustainability of SMEs in Pakistan. Recognizing the significance of SMEs and implementing supportive measures can unlock their potential and contribute to the overall economic development of the country.

However, despite the presence of various funding programs and support agencies by the government (SMEDA, 2021), many SME owners are not aware of these resources and therefore fail to benefit from them. Moreover, even among those who are aware, there is a lack of proper coordination and guidance provided by these institutions, leading to limited patronage by SMEs. This highlights the necessity for the government to enhance the coordination among these institutions and increase awareness among SME owners through effective advertising, workshops, and capacity-building programs. Drawing from the findings of this study and previous research, there is compelling empirical evidence that supports the notion that TQM, EO and KMC have a positive impact on SME performance.

TQM emphasizes the importance of quality management practices and continuous improvement throughout the SME. It enables SMEs to enhance customer satisfaction, product/service quality, and operational efficiency. EO, on the other hand, encourages SMEs to foster a proactive and risk-taking mindset, promoting innovation, opportunity-seeking, and adaptability. KMC focuses on the effective utilization of knowledge resources, including customer insights, competitor intelligence, and internal expertise, to drive decision-making and improve performance. While acknowledging the benefits of TQM, EO, and KMC, it is crucial to avoid becoming excessively fixated on any one variable or factor. Over-concentration on a single aspect can lead to neglecting other

critical areas of the business, potentially resulting in diminished overall performance. It is essential to adopt a comprehensive approach that recognizes the interplay between these factors and their collective influence on SME performance.

SME owners and managers should strive to strike a balance among TQM, EO, and KMC, integrating them into their SME processes and strategies. By leveraging the synergies between these factors and ensuring their alignment with broader business objectives, SMEs can optimize their performance outcomes. This requires a comprehensive understanding of the specific context and dynamics of the SME, allowing for tailored implementation and resource allocation. In summary, SMEs can enhance their performance by recognizing and embracing the importance of TQM, EO, and KMC. However, it is crucial to maintain a balanced perspective and avoid excessive focus on any one factor. By leveraging the synergistic effects of these factors and integrating them effectively into their operations, SMEs can achieve sustainable growth and competitive advantage in their respective industries.

The study reveals that effectively managing TQM practices can have a significant impact on SME performance. TQM refers to the processes and practices implemented by a SME to develop high-quality products while utilizing available resources efficiently. By implementing TQM, SMEs can enhance their ability to deliver products or services of superior quality that align with the needs of the market. The study highlights that when SMEs prioritize TQM practices, they are better equipped to develop products or services that meet the environmental demands and customer expectations. This, in turn, leads to higher levels of customer satisfaction, which can contribute to superior SME performance. The findings also suggest that the overall capabilities of SMEs can be enhanced when SMEs prioritize the development of higher

quality products across various dimensions of TQM, including product design, manufacturing processes, and others.

Therefore, it is crucial for SME owners and managers to recognize the importance of TQM in achieving sustainability and driving growth within their SMEs. By implementing TQM principles and practices, SMEs can improve their competitive position, as the ability to meet quality standards is integral to maintaining a strong market presence. Furthermore, the study emphasizes the significance of understanding the business environment. This understanding serves as a foundation for acquiring the necessary knowledge and facilitates the sharing of information and experiences within the enterprise. Such knowledge and information sharing promote the development and maintenance of high-quality standards within the SME. Overall, this study highlights the importance of effectively managing TQM in SMEs. By prioritizing TQM practices, SMEs can enhance their ability to deliver superior quality products or services, meet customer expectations, and sustain a competitive advantage in the marketplace.

Additionally, the findings of the study indicate that EO has a significant impact on SMEs, consequently influencing SME performance. Therefore, to enhance the performance of SMEs, it is crucial for owners and managers to continuously strive to elevate the level of EO within their SMEs. This can be achieved by fostering an environment that encourages and supports entrepreneurial behavior. EO has been proven to be a catalyst for driving positive outcomes in SMEs, making it an asset for improving SME performance. By embracing an entrepreneurial mindset, SMEs can capitalize on opportunities, take proactive measures, and exhibit a willingness to undertake calculated risks. This proactive approach facilitates innovation and enables SMEs to gain a competitive edge in the market.

To enhance the level of EO, SMEs should focus on gaining a better understanding of their potential for innovativeness, pro-activeness, and risk-taking. This entails staying abreast of industry trends, identifying emerging market needs, and continuously seeking ways to deliver value to customers. By fostering a culture of innovation, SMEs can not only enhance their understanding of the market, customers, and competitors but also improve their ability to develop refined products and services (Asad et al., 2018; Asemokha et al., 2019). It is important for SMEs to recognize that being innovative goes beyond simply generating ideas. It involves translating those ideas into practical solutions and implementing them effectively. This requires SMEs to invest in research and development, embrace modern technologies, and foster a learning culture that encourages experimentation and adaptation (Clark et al., 2024). By emphasizing EO and cultivating a culture of innovation, SMEs can position themselves for long-term success and improved SME performance. This proactive approach enables SMEs to seize opportunities, respond effectively to market changes, and create value for their customers. By embracing EO and fostering a culture of innovation, SMEs can enhance their competitiveness and achieve sustainable growth in their respective industries (Asad et al., 2018).

Finally, the findings of the study emphasize the importance for SME owners and managers to cultivate KMC within their SMEs. KMC encompasses a comprehensive approach to managing knowledge that is crucial in influencing SME performance. While KMC itself is significant, its impact on SME performance becomes even more pronounced when it is linked to accessing new and improved knowledge, sharing that knowledge effectively, and ultimately achieving superior performance outcomes. In practical terms, SMEs can enhance their SME performance by establishing a solid foundation of KMC. This involves developing a knowledge-sharing culture and

leveraging the available knowledge resources to produce high-quality goods and services. By combining a focus on quality and technological superiority with a robust KMC, SMEs can effectively enhance their SME performance. Therefore, SME owners and managers should prioritize the development of a long-term mindset that embraces technological advancements and promotes knowledge sharing. This mindset enables SMEs to continually innovate, ensuring the novelty and competitiveness of their products and services in the market. By embracing a comprehensive approach to KMC and fostering a culture of continuous learning and adaptation, SMEs can position themselves for improved SME performance and sustained success.

Additionally, Information Technology (IT) has a practical contribution in research and lies in its ability to function as a moderator in managing and streamlining large volumes of information. With the exponential growth of data, especially in digital environments, IT tools and systems provide researchers with the capability to organize, filter, and retrieve relevant data efficiently (Celik, 2023). Results of moderation in these studies showed that IT moderates the relationship to TQM, EO and KMC positively to enhance the performance. Technologies such as data management systems, machine learning algorithms, and information retrieval platforms help moderate the influx of data, ensuring quality control and relevance to the research objectives. These tools not only enhance data accessibility but also improve decision-making processes by reducing information overload. For instance, the use of automated content analysis and natural language processing enables researchers to extract insights from unstructured data, thus enhancing the reliability and validity of the research outcomes (Bawden & Robinson, 2020). As a result, IT serves as a critical moderator in transforming raw information into structured knowledge, supporting both theoretical and practical advancements in various research domains.

Conclusively, this study highlights the significance of TQM, EO and KMC as critical resources or orientations that can contribute to generating a competitive advantage for SMEs (Ali et al., 2020; Anand et al., 2021). These resources should be considered as complementary and interrelated factors that have a direct impact on the financial outcomes of the SME, consequently influencing its overall performance. It is important to note that each of these strategic orientations operate in distinct ways, and focusing solely on one orientation may not be sufficient for achieving optimal results. Instead, a successful configuration or integration of these orientations becomes imperative. SME owners and managers must strive to develop the right combination or alignment of TQM, EO, and KMC within their SMEs.

The study supports the argument that the bundles of SME resources, comprising TQM, EO, and KMC, represent a significant source of competitive advantage. It is through the strategic configuration and effective utilization of these resources that SMEs can differentiate themselves in the market, meet customer expectations, and achieve superior performance outcomes. Therefore, SME owners and managers should recognize the importance of adopting a comprehensive and integrated approach that encompasses TQM, EO, and KMC. By effectively combining these strategic orientations, SMEs can unlock their full potential and establish a sustainable competitive advantage, thus contributing to enhanced SME performance (Anon, 2018; Aftab et al., 2022).

Finally, this study makes a significant theoretical contribution by empirically examining the moderating role of IT in the relationship between TQM, EO, KMC, and the performance of SMEs. The results of the analysis demonstrate that IT indeed acts as a moderator in the relationship between TQM, EO, KMC, and SME performance. In

practical terms, this implies that to enhance SME performance through effective management of TQM, EO, and KMC, SMEs need to pay attention towards the use of IT tools for information gathering and analysis for better prospective decisions. It suggests that SMEs should strive to improve their technological capabilities and make better use of information to achieve improved business performance. By recognizing the moderating role of IT, this research emphasizes the importance of technological factors in shaping the relationship between strategic orientations and SME performance.

5.5.2 Theoretical Contribution

This study presents significant findings that support the theoretical relationships proposed in the research framework. It focuses on examining the impact of Information Technology (IT) as a moderating factor on the relationship between Total Quality Management (TQM), Entrepreneurial Orientation (EO), Knowledge Management Capabilities (KMC), and the performance of small and medium-sized enterprises (SMEs) in the sports goods manufacturing sector of Pakistan. The study formulates six hypotheses to evaluate these relationships. The study's objective is to shed light on the role of IT in influencing the relationships between TQM, EO, KMC, and SME performance. IT refers to the rapid and dynamic changes in technology that businesses need to adapt to stay competitive. TQM represents the implementation of quality management practices, EO signifies a SME's proactive and risk-taking approach to innovation and opportunity-seeking, and KMC refers to a SME's ability to create, share, and utilize knowledge effectively.

The study's results indicate that IT plays a significant moderating role in the relationships between TQM, EO, KMC, and SME performance. This implies that the

impact of TQM, EO, and KMC on performance outcomes is contingent upon the level of IT experienced by SMEs in the sports goods manufacturing sector. These findings contribute to the existing body of knowledge by highlighting the importance of considering the influence of technological factors used to manage information when examining the relationships between strategic variables and SME performance. Overall, this study provides empirical evidence for the proposed theoretical relationships and contributes to our understanding of how TQM, EO, and KMC interact with IT to influence the performance of SMEs in the sports goods manufacturing sector of Pakistan (Alembummah, 2015; Abubakar et al., 2019; Asad et al., 2020; Bolatan et al., 2022).

The findings of the study demonstrate that TQM, EO, and KMC have a positive impact on SME performance. This indicates that when SMEs implement effective quality management practices, adopt a proactive and risk-taking approach to innovation and opportunity-seeking, and possess the ability to create, share, and utilize knowledge effectively, their performance improves.

Furthermore, this study enhances our understanding of the role of IT in predicting SME performance. The results highlight the importance of considering the influence of IT, which refers to the rapid and dynamic changes in technology, when examining the relationship between TQM, EO, KMC, and performance outcomes. The findings provide empirical evidence to support the research framework and contribute to the Resource-Based View (RBV) theory. The RBV suggests that a SME's performance is influenced by its bundle of tangible and intangible resources. In the context of this study, TQM, EO, KMC, and IT are considered as the SME's resources. By examining the relationships between these variables and SME performance, this study provides

empirical support for the RBV theory. In summary, this study fills a gap in the literature by investigating the combined effects of TQM, EO, and KMC on SME performance within a single model. The findings demonstrate the positive impact of these variables on SME performance and highlight the significance of considering IT as a moderating factor. By providing empirical evidence and supporting the RBV theory, this study contributes to our understanding of how these strategic variables and technological factors influence the performance of SMEs.

Therefore, considering the gap this study emphasized the need for a deeper examination of how IT is moderator in terms of using IT tools for information analysis and better strategic move which influences the relationships between TQM, EO, KMC, and SME performance (Jardim et al., 2020). By delving into this aspect, we can gain valuable insights into the complex dynamics that underpin the performance outcomes of SMEs. In summary, while past research has acknowledged the importance of TQM, EO, KMC, and the accessibility of various resources in determining SME performance, there is a dearth of knowledge regarding the moderating role of IT in this relationship (Jardim et al., 2020).

These findings not only contribute to the RBV theory but also have implications for strategic management and entrepreneurial literature. They shed light on the role played by IT in influencing the relationship between TQM, EO, KMC, and SME performance, thereby adding clarity to our understanding of these dynamics. It is worth noting that previous studies, such as those by Clark et al. (2020), have briefly mentioned the role of IT as a moderator, but this study further enhances researchers' knowledge in this area by providing empirical evidence. In summary, this study provides theoretical support by empirically evaluating the moderating role of IT on the relationship between TQM,

EO, KMC, and SME performance. The results highlight the significance of IT as a moderator and emphasize the need for SMEs to improve their technological orientation to enhance overall performance. These findings contribute to the RBV, strategic management, and entrepreneurial literature by clarifying the role of IT and expanding our understanding of the moderating influence it exerts on strategic orientations and SME performance.

5.5.3 Methodological Contribution

From methodological perspective, this study evaluated construct reliability of five measures such as Total Quality Management (TQM), Entrepreneurial Orientation (EO), Knowledge Management Capabilities (KMC), Information Technology (IT) in terms of gathering and effective use of information through IT tools as moderator and Small and Medium Enterprise (SME) performance. These instruments were adapted from well-established studies and have been considered as widely used instruments of the TQM, EO, KMC, IT and SME performance. However, limited empirical evidence on psychometric properties of these measures has been reported because most studies (Kebede & Virdi, 2021; Singh, 2024; Clark et al., 2024). Mostly results were evaluated the internal consistency reliability using Cronbach's alpha. This study moved one step ahead in evaluating the robustness of the Pakistan version of TQM, EO, KMC, IT and SME performance in terms of construct reliability to establish usability of the instrument in the Pakistani sports goods manufacturing sector. Specifically, the present study has succeeded in assessing psychometric properties of TQM, EO, KMC, IT and SME performance in terms of convergent and discriminant reliability. Psychometric property was also evaluated in terms of individual item reliability; average variance explained (AVE) and composite reliability of each construct measure. Taken together,

the present study has succeeded in using one of the more robust approaches PLS-SEM to assess the psychometric properties of each theoretical construct incorporated in the conceptual model with the theory integration in this study.

Therefore, the present study not only contributes to the literature on SME performance but also enhances the methodology employed in such studies. By employing Smart PLS-SEM 3.0 and establishing the reliability of the adapted measures, it provides a methodological framework that can be replicated and applied in similar contexts. This contributes to the broader understanding of SME performance and strengthens the foundation for future research in the field of SMEs in the Pakistani sports goods manufacturing sector. In summary, this study has methodological implications that should be acknowledged. By utilizing Smart PLS-SEM 3.0, it introduces a novel analytical approach to the study of SME performance. Additionally, the study establishes the reliability and validity of the measurement scales used, which enhances the methodological rigor of future research. These contributions further advance the literature on SME performance and provide valuable insights for researchers studying SMEs in the specific context of the sports goods manufacturing sector in Pakistan.

5.6 Limitations and Recommendations for Future Research

This study has provided valuable insights into the performance of small and medium-sized enterprises (SMEs). However, it is important to acknowledge that there are certain limitations associated with the study. One of the potential drawbacks is the presence of common technique variance and non-response biasness, which is a significant concern in behavioral research (Asad et al., 2023). This refers to the possibility that the results obtained in the study could be influenced by the way the data was collected or the methods employed. To address this issue, the researchers conducted a single-factor

analysis based on Harman's technique. This analysis helped them assess the common method bias and determine if it was a potential factor affecting their results.

In the present study the variables are not broken down in different dimensions for measurement, which may have potential for future study. However, it is worth noting that there are still opportunities for improvement in future studies. One such improvement could involve gathering information from multiple participants within each organization, such as owners, managers, and other relevant stakeholders. By collecting data from a diverse range of individuals, independently, it would be possible to reduce measurement errors and enhance the validity of the findings. This approach would provide a more comprehensive understanding of the performance of SMEs and potentially overcome any limitations associated with common technique variance.

Another aspect to consider is the scope of the analysis, which focuses exclusively on SMEs involved in the manufacturing of sports items in Pakistan. By narrowing down the study to this sector of sports goods manufacturing, it inadvertently excludes SMEs operating in other sectors of the country. This decision might have implications for the generalizability of the findings. It is important to note that SMEs in Pakistan share common characteristics in terms of ownership structure, employee count, and other factors. However, these characteristics may not be representative of SMEs in other sectors or regions. Consequently, the conclusions drawn from this study should be cautiously applied to SMEs operating in different sectors of the country. The outcomes and implications of the study might have varied if SMEs from additional regions or sectors were included in the analysis.

Moreover, while this study provides valuable insights into the performance of SMEs in the sports item manufacturing sector, it is crucial to investigate how SME performance

varies across diverse sectors. Different industries may have unique challenges, market dynamics, and growth opportunities, which can significantly influence the performance of SMEs operating within them. Therefore, it is necessary to conduct sector-specific analyses to gain a comprehensive understanding of SME performance and tailor interventions and strategies accordingly. By examining performance variations across different sectors, policymakers and stakeholders can develop targeted approaches to support and enhance SMEs' performance in each specific sector.

Another important consideration is the research methodology employed in this study. The current study primarily adopted a quantitative approach, relying solely on a questionnaire as the data collection tool. While questionnaires are commonly used in research, it is essential to recognize that respondents may not always be inclined to provide completely accurate or honest responses (Armstrong & Overton, 1977). This potential issue raises concerns about the consistency and accuracy of the collected data in reflecting the actual factors under investigation. To mitigate this limitation, future research on the performance of SMEs in Pakistan could benefit from incorporating a combination of both quantitative and qualitative methodologies. By integrating qualitative approaches, such as interviews or focus groups, researchers can gain deeper insight into the experiences, perspectives, and motivations of SME owners and managers. Qualitative methods can provide rich, context-specific information that complements the quantitative data obtained through questionnaires (Sharma, 2017).

The integration of quantitative and qualitative methods would enhance the robustness and validity of the research findings. It would allow for a more comprehensive understanding of the performance of SMEs in Pakistan by capturing both numerical data and qualitative narratives. Additionally, this mixed-methods approach would

facilitate triangulation, which involves cross-validating findings from different data sources, strengthening the overall research conclusions. Moreover, by incorporating qualitative methods, researchers can explore nuanced aspects that may not be captured through quantitative measures alone. This could include factors such as SME culture, leadership styles, and external market influences, which play a significant role in shaping the performance of SMEs. Such insights would enable a more holistic understanding of the complexities involved and aid in the development of targeted strategies to improve SME performance.

In summary, while the current study relied solely on a quantitative approach using a questionnaire, future research endeavors examining SME performance in Pakistan would be enriched by adopting a mixed-methods approach (Cavana et al., 2001). By combining quantitative and qualitative methodologies, researchers can address potential limitations associated with solely relying on questionnaire data and gain a more comprehensive understanding of the multifaceted aspects influencing SME performance.

Next important limitation in the study is related to the cross-sectional studies, such as the survey design employed in this study, involve data collection at a single point in time. While they offer valuable insights into relationships between variables, it is important to acknowledge their limitations in establishing causal links (Asad et al., 2018). Cross-sectional design restricts researchers from determining the direction of causality or capturing the dynamic nature of relationships over time. One notable limitation of cross-sectional designs is the inability to capture long-term behaviors and changes within SMEs (Clark et al., 2024). Since data is collected only once, it provides a snapshot of respondents' thoughts, attitudes, and behaviors at that moment. This

limitation hampers a comprehensive understanding of the dynamics and developmental patterns within SMEs.

To address this limitation, future research is recommended to employ longitudinal study design. Longitudinal studies involve collecting data from the same sample of respondents over an extended period, allowing for the examination of changes, trends, and relationships between variables over time (Asad et al., 2018). By tracking SME performance and collecting data at multiple times, researchers can observe the evolution of factors influencing performance. A longitudinal study enables researchers to establish causal relationships between variables, identify patterns, and assess the impact of long-term changes and interventions on SME performance (Sharma, 2017). This approach provides a more robust foundation for drawing conclusions and making evidence-based recommendations.

Additionally, conducting a longitudinal study can serve as a means of validating results obtained from cross-sectional investigations (Chan et al., 2014). By comparing findings from both study designs, researchers can ensure the stability and generalizability of their results, enhancing the overall research findings and bolstering confidence in the conclusions drawn. In conclusion, while the cross-sectional design utilized in this study offers valuable insights, it has limitations in establishing causal relationships and capturing long-term behaviors within SMEs. Future research should consider employing a longitudinal study design to overcome these limitations, enabling a comprehensive understanding of the topic, and facilitating stronger conclusions about the relationships and dynamics involved in SME performance.

Last but not the least, it is important to highlight that this study specifically examined the impact of Information Technology (IT) on the relationship between Total Quality

Management (TQM), Entrepreneurial Orientation (EO), Knowledge Management Capabilities (KMC), and the performance of SMEs in the Pakistani sports products manufacturing industry. The focus of the study was primarily on the effectiveness of SMEs as the independent variable. However, it is worth noting that the framework proposed in this study can be broadened by incorporating additional elements that constitute a SME's strategic resources. For instance, elements such as personnel orientation, cost orientation, and network orientation could be included to provide a more comprehensive understanding of the factors influencing SME performance (Celik, 2023). These elements, when integrated into the existing framework, would allow for a more holistic analysis of the various strategic resources that contribute to SME success.

Moreover, future researchers could also explore the use of IT as a modifier to explain variations in SME performance beyond the scope of this study. By investigating how IT interacts with other variables and influences SME performance, researchers can gain deeper insights into the dynamics and complexities of the relationship between technological factors and organizational outcomes. Expanding the scope of the study by incorporating additional elements and exploring the potential of IT as a modifier would contribute to a more nuanced understanding of the factors that drive SME performance. It would allow for a comprehensive evaluation of the strategic resources, external influences, and contextual factors that shape the performance of SMEs in the sports products manufacturing industry in Pakistan.

Conclusively, while this study focused on the impact of IT on the relationship between TQM, EO, KMC, and SME performance, there is potential for future research to expand the framework by including other strategic resource elements and investigating the role

of IT as a modifier. Such advancements would provide a more comprehensive understanding of the complex dynamics at play in SME performance.

5.7 Conclusion

The primary objective of this study is to examine the relationship between Total Quality Management (TQM), Entrepreneurial Orientation (EO), Knowledge Management Capabilities (KMC), and the performance SMEs in Pakistan's sports goods manufacturing industry. To achieve this goal, the study examined three hypotheses that directly investigate these relationships. The findings of the study provide concrete evidence of a significant correlation between TQM, EO, KMC, and SME performance. The second goal of the study is to explore the relationship between TQM, EO, KMC, and the moderating role of Information Technology (IT) by means of use of IT tools for information gathering and its effective use to improve the SMEs performance. This moderation is examined by three more hypotheses. By investigating this connection, the study aims to understand how IT is moderating the relationship between TQM, EO, KMC, and SME performance. This aspect of the study delves into the dynamics and interactions between these variables, shedding light on how IT moderates the relationship between TQM, EO, KMC and the performance of SMEs in the sports goods manufacturing sector.

Furthermore, this study makes significant contributions in terms of practical, theoretical, and methodological aspects regarding the influence of strategic orientations on the performance of SMEs. The findings of the study provide valuable insights that can be applied in real-world business settings, offering practical implications for SMEs operating in various sectors, including the sports goods manufacturing sector in Pakistan. These insights can help SMEs enhance their performance by implementing

effective strategic management practices such as TQM, EO and KMC. From a theoretical standpoint, this study enriches the existing literature on SME performance and strategic management by providing empirical evidence of the positive impact of TQM, EO, and KMC as strategic orientations on SME performance. By establishing these relationships, the study adds to the theoretical understanding of how strategic orientations can contribute to improved performance outcomes for SMEs. The findings validate and extend previous theoretical frameworks and models, providing a deeper understanding of the mechanisms through which strategic orientations influence SME performance.

By conducting this research, the study aimed to contribute to the existing body of knowledge in the field of SME performance and shed light on the influence of TQM, EO, and KMC in the presence of IT. The findings from this study have the potential to provide valuable insights for practitioners and policymakers in the sports goods manufacturing sector, helping them better understand how these factors interact and influence SME performance in a dynamic and ever-changing technological environment.

Methodologically, this study contributes by employing rigorous research methods and statistical analyses to investigate the relationships between strategic orientations and SME performance. The study's methodology serves as a valuable reference for future research in the field, offering insights into effective approaches for studying the impact of strategic orientations on SMEs. Researchers can use the methodological framework of this study to design and conduct similar investigations, ensuring robustness and reliability of their findings. Considering the limitations of this study, several directions for future research are outlined. These directions highlight areas that require further

exploration and investigation to enhance our understanding of the relationship between strategic orientations and SME performance. By addressing these limitations, future studies can build upon the findings of this research and delve deeper into specific aspects or contexts that were not fully explored in this study.

Finally, in conclusion, this research work has made valuable contributions in terms of practical implications for SMEs, theoretical advancements in the field of strategic management, and methodological guidance for future research. The study's findings have important implications for SMEs seeking to improve their performance, while also contributing to the academic literature on SME performance and strategic management. By recognizing the limitations and suggesting future research directions, this study lays the foundation for further investigations around strategic orientations and SME performance.



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APPENDICES

APPENDIX A : Data Collection Questionnaire

Demographic factors

Name:				
Email:				
Gender:	1	Male	2	Female
Education level	1	No formal education	2	Higher secondary
	3	Graduation	4	Masters
	5	PhD	6	Professional
Age group (years)	1	Below 30	2	31 – 40
	3	41 – 50	4	51 – 60
	5	Above 60		
Marital status	1	Single	2	Married
Ownership	1	Sole Proprietor	2	Partnership
Inception (years)	1	Below 5	2	6 – 10
	3	11 – 15	4	16 – 20
	5	Above 20		
Number of employees in business	1	Below 15	2	15 – 20
	3	21 – 25	4	26 – 30
	5	31 – 35	6	36 – 40
	7	Above 40		
Funding source	1	Family	2	Personal
	3	Friends	4	Banks & FIs

SME performance

1	“In previous years SME increases its share in market.”	1	2	3	4	5	6	7
2	“Increased in profits of SME in previous years.”	1	2	3	4	5	6	7
3	“Our cost has decreased in the past years.”	1	2	3	4	5	6	7
4	“Our sales volume also showed increase in past years.”	1	2	3	4	5	6	7
5	“Past years increasing employee satisfaction in our SME.”	1	2	3	4	5	6	7
6	“Satisfaction level of customer has increased in past years.”	1	2	3	4	5	6	7
7	“Past years employees’ turnover has decreased in our SME.”	1	2	3	4	5	6	7

Total Quality Management

1	“Improving the quality promoted by our SME.”	1	2	3	4	5	6	7
2	“Quality is a crucial and integral part of doing things in our SME.”	1	2	3	4	5	6	7
3	“Our SME, added value to the community by our activities.”	1	2	3	4	5	6	7
4	“Our SME, ensure that employees are well supported during times of change.”	1	2	3	4	5	6	7
5	“Our SME, has a strong attitude to prevent defective products.”	1	2	3	4	5	6	7
6	“Our SME, ensures the quality in the creation of new goods and services.”	1	2	3	4	5	6	7
7	“Our managers and supervisors are aware of the best ways to inspire workers and drive peak performance.”	1	2	3	4	5	6	7
8	“Our SME gives clear instructions to employees about the work in process.”	1	2	3	4	5	6	7
9	“Our SME always gives importance to inspections, review and checking of work.”	1	2	3	4	5	6	7
10	“Our SME always a focus on ongoing improvement across all activities at all levels.”	1	2	3	4	5	6	7
11	“Our SME provides training opportunities to employees to ensure the continuous improvement.”	1	2	3	4	5	6	7
12	“Our SME, genuinely believe that one can thrive and provide superior service in the environment of intense competition by putting continuous quality improvement strategy into practice.”	1	2	3	4	5	6	7

Entrepreneurial Orientation

1	“Our SME is known as an innovation executor among businesses.”	1	2	3	4	5	6	7
2	“Our SME is the leader in developing new products/services.”	1	2	3	4	5	6	7
3	“Our SME aims to exploit upcoming changes in the target market before competitors.”	1	2	3	4	5	6	7
4	“Our SME takes the initiative in target market operations whenever possible.”	1	2	3	4	5	6	7
5	“Our SME takes advantage of opportunities to influence the business environment in which it operates.”	1	2	3	4	5	6	7
6	“In dealing with competition, our SME never initiates actions.”	1	2	3	4	5	6	7
7	“Our SME, invests in high-risk initiatives overall.”	1	2	3	4	5	6	7
8	“Our SME has a prominent level of tolerance for undertakings projects with significant risk.”	1	2	3	4	5	6	7
9	“Our business has a strong inclination to take risks is a defining quality of strategy.”	1	2	3	4	5	6	7

Knowledge Management Capabilities

1	“Our managers and supervisors do informal meetings to discuss and exchange ideas, experience, and opinion”	1	2	3	4	5	6	7
2	“Our managers always encourage and motivate to have a formal and informal joint activity between departments i.e., open dialogue, spending time together to share experience.”	1	2	3	4	5	6	7
3	“Our SME has a process to acquire knowledge about customers.”	1	2	3	4	5	6	7
4	“Our SME has processes for generating new knowledge from existing knowledge.”	1	2	3	4	5	6	7
5	“Our SME uses feedback from products to subsequently improving them.”	1	2	3	4	5	6	7
6	“Our SME has processes for converting knowledge into the design of new product and service.”	1	2	3	4	5	6	7
7	“Our SME has procedures for conveying knowledge to people.”	1	2	3	4	5	6	7
8	“Our SME has methods for classifying knowledge.”	1	2	3	4	5	6	7
9	“Our SME has processes for replacing outdated knowledge.”	1	2	3	4	5	6	7
10	“Our SME has processes for applying knowledge learned from mistakes.”	1	2	3	4	5	6	7
11	“Our SME uses knowledge to improve efficiency.”	1	2	3	4	5	6	7
12	“Our SME quickly applies knowledge to critical competitive needs.”	1	2	3	4	5	6	7
13	“Our SME makes knowledge accessible to those who need it.”	1	2	3	4	5	6	7
14	“Our SME has processes to protect knowledge from inappropriate use inside and outside of the SME.”	1	2	3	4	5	6	7
15	“Our SME has technology that restricts access to some resources of knowledge.”	1	2	3	4	5	6	7

Information Technology

1	“Informational technology in our SME changes rapidly.”	1	2	3	4	5	6	7
2	“Information technology in our SME provides opportunity.”	1	2	3	4	5	6	7
3	“Information technology era generates new product and ideas in our business.”	1	2	3	4	5	6	7
4	“Information technology era generates innovative ideas from product supply.”	1	2	3	4	5	6	7
5	“Information technology generates new ideas to our business.”	1	2	3	4	5	6	7
6	“Information technology advancements in our sector have made it possible to create a lot of fresh product ideas.”	1	2	3	4	5	6	7