Innovation, Competitive Advantage and Export Performance: A Study of Pakistani Manufacturing SMEs

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Abstract—**This study examines the innovation practice as a key component to gain a competitive advantage to pursue export performance. Data were collected through questionnaires from 364 Pakistani manufacturing SMEs. Structural equation modeling (SEM) by operating Smart PLS-4 was used for data analysis. The findings showed that both directly and indirectly, innovation has a positive and significant impact on the export performance of SMEs in Pakistan. Additionally, competitive advantage has also been found as a mediator between innovation and export performance. The results signify an improvement in the firm's innovation as well as sustaining competitive benefit so one can boost the export overall performance of Pakistani SMEs. This study is important to generate beneficial knowledge and insight regarding the appropriate and specific explanation for a firm's CEOs/managers to enhance innovation along with maintaining a competitive advantage for the enhancement of the company's export performance particularly in the context of Pakistan. Consequently, this has a look at suggests a particular and beneficial avenue for companies to effectively improve innovation that is very important to gain a competitive edge for firms around the globe.**

*Keyword*s—**Innovation, Export performance, Competitive advantage**

I. INTRODUCTION

Global experts and legislators are promoting innovation to boost their companies' export competitiveness because of rising globalization and escalating global rivalry (Kazemi, Rousta, & Na'ami, 2021). It is claimed that innovative exporters have a stronger chance of success because innovation boosts productivity and lowers manufacturing costs, or because it creates new goods and services with superior quality or distinctive features. This viewpoint is generally supported by past studies on the effect of innovation on export overall performance (Dong, Kokko, & Zhou, 2022; Fassio, 2018; Reçica, Hashi, Jackson, & Krasniqi, 2019). Most of the study on the innovation-export relationship focuses on large businesses in developed nations that have built significant creative abilities and intangible resources like proprietary technology, well-known trademarks, and big brands. Small and medium-sized firms (SMEs) in developing nations, where fewer of these kinds of valuable assets are present, have not been the subject of as in-depth research as other industries. Therefore, the current study investigates the association of innovation, competitive advantage, and export performance in the context of SMEs' working in Pakistan.

One economic barometer of any nation is its SMEs. Globally and more crucially, in developing and emerging markets and nations, SMEs enterprise considerably improved humans cultural and economic quality. Small and medium-sized businesses (SMEs) are vital for growth in addition to the creation of jobs in any nation (Gherghina, Botezatu, Hosszu, & Simionescu, 2020). SMEs are engaged in fostering entrepreneurship and sustaining grassroots sustainable industrial growth, which supports the viable and sustainable development of the nation (Surya *et al*., 2021). 3.3 million SMEs call Pakistan their home, accounting for more than 90% of the nation's whole business sector (Soomro, Shah, & Mangi, 2018). It is generally acknowledged that SMEs engage a significant role in Pakistan's economy and that there is a need to support their expansion and maturity, including the financial sector (Manzoor, Wei, & Siraj, 2021). Small and medium-sized businesses (SMEs) play an important role in economic growth, and employment creation,

providing the backbone of giant corporations' operations. Many nations are taking the lead in assisting SMEs in attaining their full capacity by focusing on innovation to successfully engage the global market (Albassami, Hameed, Naveed, & Moshfegyan, 2019). Pakistan provides great significance to the promotion of innovation in order to lessen the problems presented by the developing global market and to get a competitive edge there. In light of Pakistan's SMEs' desire to gain a competitive edge, it is necessary to explore the innovation and export performance relationship. The present study sought to explore the development of innovations in their product, process, marketing and managerial to enhance their export competitiveness as well as focus on building a competitive atmosphere to create competition on a global scale with the intention of filling the knowledge gap.

II. LITERATURE REVIEW

Innovation and Export Performance

The literature has extensively recognized the idea of internationalization, particularly the significance of exporting for both business and country progress (Cieślik, Michałek, & Szczygielski, 2016; Cieślik & Michałek, 2017; Dong *et al.*, 2022; Fassio, 2018). Over the past few decades, exporting has received more attention within the context of global commerce (Alotaibi & Zhang, 2017). Firms are forced to internationalize to seize their survival chances as globalization intensifies competition. In particular, for small- and medium-sized businesses, exporting is regarded as the most prevalent and fundamental method of market access (Manzoor *et al.*, 2021). However, businesses must build the skills necessary to thrive and outperform their competitors on a global scale (Mohammadian, Allahverdi, & Salimi, 2014).

Moreover, scholars give attention to exporting and found the relationship between SMEs innovation and SMEs internationalization and its difference corresponding to the innovation types (Saridakis *et al.*, 2019). In the context of international business, Paul *et al.* (2017) suggested that small- and medium-sized firms that come up with the ability to develop service or product innovation will obtain competitive advantages on their competitors and these innovative measures will support their process of internationalisation. Research has proven that innovation can improve business performance and the economy's overall health (Bacinello, Tontini, & Alberton, 2020; Exposito & Sanchis-Llopis, 2018). By engaging in innovative operations, businesses will be able to make use of opportunities in the international marketplace (Kazemi *et al.*, 2021). Therefore, it is believed that the sources of high performance include innovative initiatives and worldwide market competitiveness (Alotaibi & Zhang, 2017). Basically, innovation is a means by which value is generated, according to Schumpeter and Nichol (1934). Success in global marketplaces depends on a company's innovation operations, claim Udriyah, Tham, and Azam (2019).

Additionally, Schumpeter and Nichol (1934), a pioneer of innovation, emphasized the significance of introducing new technology and developing new markets for fostering national development. To get the benefit of the economies of size and scope, innovation is therefore seen as being essential for achieving and retaining a long-term competitive advantage in international markets (Herman, Hady, & Arafah, 2018; Lestari, LEON, Widyastuti, BRABO, & Putra, 2020). For sustaining a sustainable market position and exemplary performance in global marketplaces, innovation is seen as a system whereby thoughts are translated into an industrial asset that can be within the shape of products, tactics, systems, techniques, or structures (Roper, 2022; Roper & Love, 2018). Research and development (R&D) also plays a significant part in the global success of businesses by creating new goods, procedures, as well as organizational structures to fit external conditions or refining currently existing products along with processes (Luo, Lui, & Kim, 2017; Rajapathirana & Hui, 2018; Silvestre & Ţîrcă, 2019). Therefore, innovation is seen as the important thing to keeping up with market modifications and adapting intrinsic firm strategies to the encircling elements, that are taken into consideration to be the assets of achievement in ultra-modern hypercompetitive surroundings wherein product lifespans are becoming smaller and smaller (Acemoglu, Akcigit, Alp, Bloom, & Kerr, 2018; Kafetzopoulos, Psomas, & Skalkos, 2019; Kazemi *et al.*, 2021). Along with these advantages, businesses can also benefit from learning from their innovation activities, that's critical for improving their export overall performance (Alotaibi & Zhang, 2017; Kazemi, Rousta, & Na'ami, 2019; Özdemira, Altıntaşb, & Kılıçc, 2017; Roper, 2022).

Competitive Advantage as a mediator

The combination of many factors that set SMEs apart from their rivals and provide them with a distinct and stronger position in the marketplace is known as a competitive advantage. According to Sulistyo and Ayuni (2020), SMEs should engage in innovation to gain a competitive edge in the market. Several researchers discovered a link connecting competitive advantage and innovation (Anning-Dorson, 2018; Distanont & Khongmalai, 2020; Ferreira, Coelho, & Moutinho, 2020; Udriyah *et al.*, 2019). Distanont and Khongmalai (2020) showed the one-dimensional aspects of competitive advantage and found that innovative programs or activities ultimately achieve a competitive advantage in the marketplace. The study of Lehmberg, Rowe, White, and Phillips (2009) found that vertical integration and innovation process is in favor of gaining a competitive advantage. This highly influences the innovation of new products or goods development along with, the difference in quality and ultimate reliance on the taste and preference of customers as well as the lifestyle and market trends. It will be necessary to make a distinction to increase the market segment and become a market leader.

Moreover, competitive advantages are the deriving factor from exports representing the position that the organization attains with respect to the combination of product, cost and service components in a specific foreign market (Eniola & Ektebang, 2014; Morgan, Kaleka, & Katsikeas, 2004; Navarro, Losada, Ruzo, & Diez, 2010). Product advantage represented design, quality, and other product characteristics that distinguish the firm value extended from competitors. Cost advantage includes the resources used in marketing and manufacturing firm value tendered and influences perceived value and price in

the export market. Service advantage involves service-associated factors of the value created such as after-sales service quality, reliability and delivery speed. According to scholars such as Morgan *et al.* (2004) and Zou, Fang, and Zhao (2003), competitive advantages are directly related to export performance. The comparative superiority of a company's value is provided which defines the target buying behaviors of customers and the results of this behavior for the export performance (Albaum & Tse, 2001; Shoham, 1999).

Based on past studies, subsequent hypothesises were proposed.
H1: There is a relationship between innovation and SME s' export performance in Pakistan.
H2: There is a relationship between innovation and SMEs' competitive advantage in Pakistan.
H3: There is a relationship between SMEs' competitive advantage and SMEs' export performance in Pakistan.
H4: Competitive advantage mediates the relationship between innovation and SMEs' export performance in Pakistan.
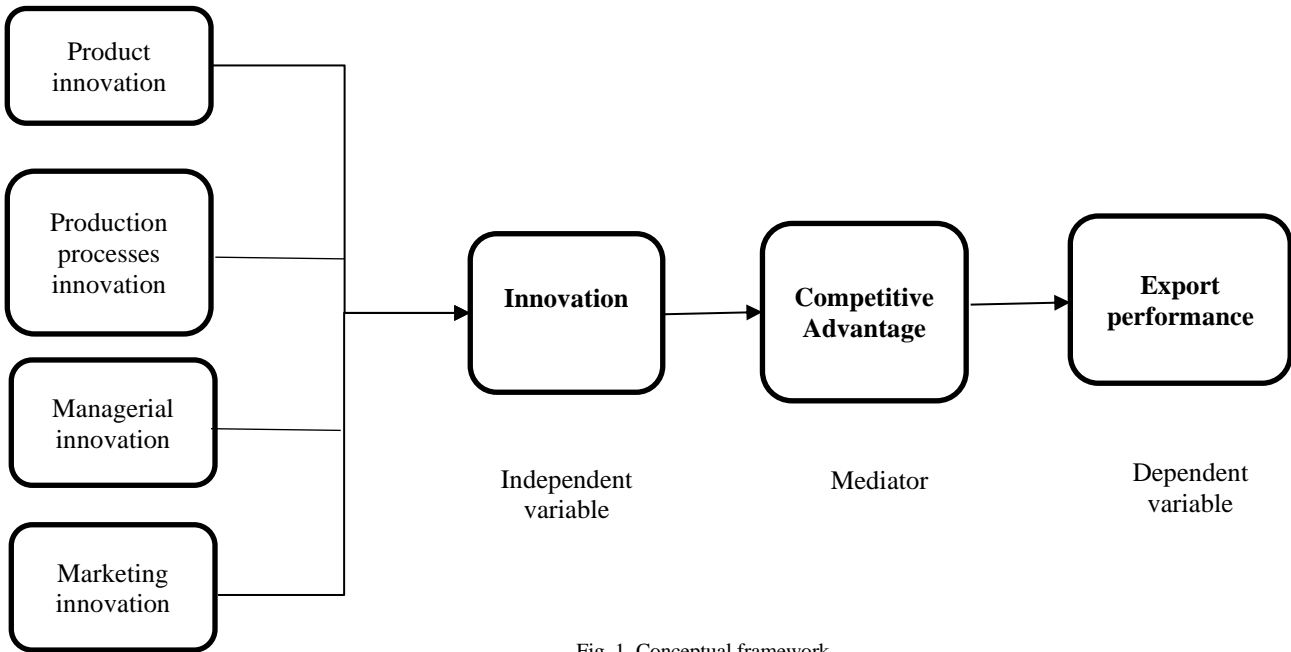

Fig. 1. Conceptual framework

III RESEARCH METHODOLOGY

Population and sample size

This study was conducted in the setting of Pakistani manufacturing SMEs. The study population was chosen from among the registered businesses in Pakistani exporter directories. Basic requirements like "organization ought to meet the standards of SMEs and contain in manufacturing and export operations" were met by the organizations included in this study. Okpara and Kabongo (2009) and Imran, Aziz, *et al.* (2018) utilized the same criteria in different settings. 6994 exporters from the top eight manufacturing subsectors that focus on exports were identified using the recommended criteria. The sample size for this study was determined by using the table to be made by Krejcie and Morgan (1970). A sample size of 364 SMEs was selected for the study by checking the statistics table created by Morgan and Krejcie in 1970. Furthermore, Shafiq, Lasrado, and Hafeez (2019) reported that the response rate for manufacturing SMEs in Pakistan was 46%. In an effort to control non-response error, the size of the study's sample was raised by 54% (Schouten, Cobben, & Bethlehem, 2009). Additionally, in accordance with Sekaran and Bougie (2016), we followed up with reminder calls and emails to participants

after the surveys had been sent in order to get the highest response rate possible. Additionally, the stratified sampling approach was applied in order to get reasonably accurate calculations for all sub-groups. By using this sampling technique, the number of sample units selected each from the stratum corresponded to the Imran, Hamid, and Aziz (2018). The sample size was broken down into five (5) strata, including furniture (68), sports equipment (60), leather/footwear (43), textiles/apparel (157), and pharmaceuticals (36). As a unit of study, the firm level was chosen, and firm owners and export managers provided their responses. Only 227 out of the 364 industry firms that received questionnaires participated in the survey, yielding a response rate of 60.69%. This answer was appropriate(Ali, Hilman, & Gorondutse, 2020; Sahoo & Yadav, 2017).

Research tool and data analysis

The study's primary research technique was a questionnaire. There are two sections to the questionnaire. The responder profiles, which are made up of five items, are related to the first section. The 10 elements of competitive advantage (derived from Beal and Yasai-Ardekani (2000)) the 8 items of export performance (modified from Maurel (2009); Ural (2009); Zou,

Taylor, and Osland (1998)), and the 5 items of innovation (derived from Azar and Ciabuschi (2017); O'Cass and Weerawardena (2009); Weerawardena (2003)) all been measured using a five-point Likert scale in the second section.

IV   FINDINGS

Descriptive analysis

The characteristics of the industry and the respondents were investigated using descriptive analysis. The results indicate that 43.8% of enterprises were active in the textile industry, 16.7% in sports equipment, 22.2% in leather products, 13.3% in pharmaceuticals, and 7.8% in the furniture industry. Results also included information about the business scope, showing that 27.8% of enterprises only focused on export business while 72.2% of firms engaged in both export and domestic market activity. Results also showed the respondent age, with 48.9% of respondents aged 31 and 40, 30% from the ages of 41 and 50, and 21.1% over the age of 50. Results, which break down respondent gender, show that 81.7% of participants were men along with only 18.3% were women. This indicates a male-dominant culture. The participant's educational level was determined and most of the respondents (45% and 45%, respectively) said that they had a master's or a degree. However, only 4.7% of respondents have a Ph.D. and 10.3% with a diploma.

Measurement Model Assessment

The measurement model was evaluated using SmartPLS 4. The measurement model and structural model are two steps in the two-step PLS-SEM evaluation process. The measurement model verified the validity and reliability of the constructs, and the structural model assessed how the constructs related to one another.

Internal consistency and convergent validity

However, the threshold values for the Cronbach alpha, rho, and reliability coefficient criteria for measurement model evaluations of the domain internal consistency are all 0.70 (Bernstein & Teng, 1989). As a result, all three measures had internal consistency values for the construct above 0.70 in the current investigation. Additionally, to validate the constructs, the composite reliability of the construct was assessed by using average error and items loading approaches. The current study discovered that all constructs had AVE values larger than 0.50, all items had greater than threshold values, and all constructs' AVE values were met (Joe F Hair Jr, Sarstedt, Hopkins, & Kuppelwieser, 2014). Table I shows the outcomes of the content validity and convergence validity tests.

TABLE I. INTERNAL CONSISTENCY AND CONVERGENT VALIDITY

Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Innovation (OI)	0.768	0.771	0.842	0.517
Competitive advantage (CP)	0.900	0.904	0.917	0.527
Export Performance (EP)	0.897	0.900	0.918	0.582

Discriminant Validity

To ascertain the external consistency of the model, construct validity was examined. HeterotraitMonotrait correlation ratio and Fornell and Larcker are the criteria to confirm the discriminant validity (HTMT). Fornell and Larcker (1981) claimed that the factor of square root for AVEs was used to compare the value of each variable. Finally, all of the correlations among some of the parameters are smaller than square root averages (AVEs), which are highlighted crosswise, as seen in Table II explaining the following situation.

TABLE II. FORNELL AND LARCKER

	CA	EP	OI
CA	**0.726**		
EP	0.702	**0.763**	
OI	0.537	0.487	**0.719**

As one of the fundamental components of model evaluation, the Heterotrait-Monotrait ratio (HTMT) is a unique approach for evaluating discriminant validity in PLS-SEM (Henseler, Ringle, & Sarstedt, 2015). Researchers cannot check if the results of the structural model are accurate or whether they're merely the product of statistical errors if construct validity is not proven. The Fornell and Larcker assessment which seems to be largely still unable to find a lack of discriminant validity, are typical techniques for discriminant validity assessment that perform significantly worse than the HTMT criterion (Joseph F Hair Jr *et al*., 2021; Ramayah, Cheah, Chuah, Ting, & Memon, 2018). The results of the present study found all HTMT values to be below one (1) and confirmed the discriminant validity of all study components. The results of the HTMT values are shown in Table III.

TABLE III. HTMT VALUES

	CA	EP	OI
CA			
EP	0.767		
OI	0.632	0.582	

Structural Model Assessment

The latest research runs the structural equation model and inner model to accept or deny the proposed hypothesis after evaluating the measurement model. The route factor and the determination coefficient (R2) criteria are used in the structural model assessment. To accept or reject the suggested hypothesis, the path coefficient assessment examined the link between the constructs. To ascertain the β – and T-values for the linear relationship exists assessment. Three direct links in the current study were investigated, and H1, H2, and H3 were determined to be supported. The t-value used to determine whether a hypothesis was accepted or rejected determines whether the observed value is larger than the predefined threshold of 1.96. Furthermore, Götz, Liehr-Gobbers, and Krafft (2010) pointed out that the technique of PLS (SEM) bootstrapping for the analysis of mediation is deemed appropriate. Therefore, this research has considered the mediation role of competitive advantage by using the technique of PLS (SEM) bootstrapping for determining the t-value and results indicated that competitive advantage mediates the relationship between innovation and SMEs' export performance. Hence H4 is accepted. Table IV shows the outcomes.

Table IV. PATH CO-EFFICIENT

Hypothesis	Beta	Standard deviation (STDEV)	T statistics	P values	Results
OI -> EP	0.128	0.036	3.548	0.000	Supported
OI -> CA	0.253	0.064	3.976	0.000	Supported
CA -> EP	0.102	0.045	5.753	0.000	Supported
OI -> CA -> EP	0.178	0.046	3.869	0.000	Mediation

An important component of the evaluation of a structural equation model is the determination coefficient (R^2). The R^2 is a metric for predicting outcomes, with values of 0.25 (low), 0.50 (medium), and 0.70 (high) being considered, correspondingly (Joe F Hair Jr *et al.*, 2014). In our situation, the OI, CP, and EP were deemed to have made a moderate contribution. The results are shown in Table V. Additionally, the contribution of the variable to the R^2 values of the variable is used to explain the effect magnitude.

TABLE V. DETERMINATION COEFFICIENT (R^2)

Variable	R^2	R-square adjusted
Competitive Advantage	0.493	0.490
Export Performance		
Innovation		

Innovation directly influences Pakistani SMEs' ability to compete favorably and significantly. The outcome is consistent with findings from Cieślik *et al*. (2016); Dong *et al.* (2022); Kazemi *et al*. (2021). SME owners and executives need to improve innovation since developing brand-new items that have never existed on the market is given less consideration in the product innovation process. Increasing product variety, creating items that are distinctive and different from rivals, and improving product packaging are all essential for product development. In terms of process innovation, SMEs must improve innovation, for instance by utilizing the newest techniques and instruments that are more productive and effective.

In this research direction, the mediating variable of competitive advantage has a significant and positive impact on export performance. Previous investigations by Tan and Sousa (2015) and Navarro, Losada, Ruzo, and Díez (2010) provide support for the findings. Both directly and indirectly, innovation has a positive and considerable impact on the export performance of SMEs in Pakistan. The outcomes from Dong *et al*. (2022); Fassio (2018); Herman *et al*. (2018); Reçica *et al*. (2019) are in agreement with this result. This study thus showed that once businesses began exporting, their efforts to develop new products and apply novel production techniques were important competitive advantage sources.

IV CONCLUSION AND IMPLICATIONS

Empirical research into the impacts of innovation on the business effectiveness and competitive advantage of SMEs in Pakistan has been provided by this study. The competitive advantage benefits from innovation. This means that as innovation increases, so will competitive advantage. Additionally, innovation has each direct and oblique results on export overall performance through competitive advantages that are both positive and significant. As a result, export performance will improve if innovation grows. Competitive advantage serves as the mediator factor in this study's analysis of the trade performance of SMEs in Pakistan. It has a positive and significant impact. The study's findings might have some theoretical and practical ramifications. The results of this study will contribute to our theoretical understanding of how SMEs in Pakistan can gain a competitive gain and improve their export overall performance via innovation. They will also have practical implications for SME owners and managers, particularly in Pakistan, where there is room for improvement. The findings of this study offer various suggestions for how to enhance export performance as suggested in the discussion. By expanding innovation, which will have an impact on the

growing significant advantage and export performance, managers and owners of SMEs can increase and optimize export performance once more.

ACKNOWLEDGMENT

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