Export Barriers Faced by Pakistani and Irani Small and Medium Sized Manufacturing Companies

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Abstract
The global economy relies heavily on SMEs. They foster innovation, create jobs, and advance the economy for everyone. This study compared export issues faced by Pakistani and Iranian manufacturing SMEs. To understand export restrictions, the research uses mixed methods, including qualitative and quantitative methods. It starts with qualitative literature and policy document studies to identify and categorize impediments. It then ranks sectors by exposure and prioritizes barriers using quantitative methods like AHP and TOPSIS. This study includes a diverse and competent set of stakeholders participating in Pakistani SMEs' export activity. Analysis found that market challenges like collecting marketing information, logistical issues, and environmental limits are important impediments in both countries. Pakistani SMEs consider technological and procedural challenges as separate, while Iranian SMEs see technology issues as regulatory and environmental issues. Results demonstrate that SMEs in both countries have many issues, but how they interact and effect each other is different, therefore policies must be customized to each case. Future research could include more countries from similar developing regions to evaluate SME obstacles and find common themes or unique contextual distinctions.

Keywords: Export Barrier, Pakistani SME, Irani SME, Economy Etc.

Introduction
The global economy relies heavily on SMEs. They foster innovation, create jobs, and advance the economy for everyone (Beck et al., 2005). The International Finance Corporation (IFC, 2017) reports that 90% of enterprises worldwide are SMEs. They make up 60% of jobs and 40% of GDP in developingcountries. These data demonstrate the importance of SMEs in rich and poor countries. In rising countries like Pakistan and Iran, SMEs drive industry and export growth. SME manufacturing covers textiles, food processing, chemicals, metal products, and machinery. These sectors boost the economy and export revenue (OECD, 2019). SMEs' growth and expansion into other countries are often hindered by a number of issues, especially in developing countries with poor institutions and infrastructure (Beck et al., 2005; Ayyagari, Demirgen-Kunt & Maksimovic, 2011). Exporting is a common approach for SMEs to grow, increase revenue, and attract new consumers (Knight & Cavusgil, 2004). SMEs make up 90% of Pakistan's enterprises and contribute for 40% of its GDP and 30% of its exports (SMEDA, 2020). Over 60% of Pakistan's export revenues come from textile and garment SMEs (Khan, 2021). Pakistani SMEs compete with local and international firms, highlighting the need to remove export barriers to sustain growth. Iranian small

and medium-sized industrial firms have been promoted to diversify the oil-dependent economy, especially because international sanctions have reduced oil income (World Bank, 2021). Iranian SMEs, which make up 92% of all enterprises, create jobs and diversify exports (Iran Ministry of Industry, 2019). To reduce economic vulnerability and raise foreign currency reserves, SMEs are encouraged to export non-oil items such petrochemicals, machinery, and food (Ebrahimi & Mahmoudi, 2017). Other company issues have made exporting harder.

Many studies suggest that SMEs suffer distinct export difficulties that are worse than those faced by larger corporations. SMEs lack resources, foreign knowledge, and management capacity (Leonidou, 2004; Cavusgil & Knight, 2015). Lack of money, market intelligence, paperwork, tariffs and non-tariff barriers, and skilled personnel make exporting goods difficult (Lu & Beamish, 2004). SMEs' largest issue is financial because they don't have collateral or credit records for export finance (Beck et al., 2005). They face greater payment risks without export insurance or trade credit (OECD, 2019). Informational barriers including not knowing foreign market norms, cultural differences, and marketing strategies hinder SMEs' international expansion (Leonidou, 2004). Infrastructure issues such poor transportation, electricity, and communication are another important issue. These make business and exporting more expensive and inefficient (Ahmed et al., 2021). Small and medium-sized firms find exporting difficult due to bureaucratic issues and unclear restrictions (Nguyen & Dang, 2020). Pakistan's export sector has structural and policy issues that hinder SMEs (Azam & Ahmed, 2020). Research demonstrates that Pakistani SMEs face many export challenges, including internal and external issues (Hussain & Malik, 2019).

One of the main issues is the many regulations. Exporting is complicated by diverse export rules, extensive customs clearance processes, and multiple government agencies (SBP, 2022). Due to poor logistics and documentation, exporters wait longer at ports (Qureshi et al., 2018). High interest rates and a lack of export credit guarantees make it challenging for SMEs to secure export financing (Ahmed et al., 2021). Not following international quality and technological norms is another major issue. Pakistani SMEs struggle to obtain the rigorous product certifications needed to reach global markets (Khan & Ahmed, 2020). Limited production methods and skilled labor can hurt competition. SMEs lack information and market research;therefore, they can't locate and exploit export opportunities (Azam & Ahmed, 2020).Exporters pay more due to infrastructure issues including inconsistent electricity and poor transportation. This hinders exports (SBP, 2022). International buyers and investors are less likely to buy or invest in SMEs due to political instability and security concerns (Khan et al., 2021). Iranian small and medium-sized firms suffer export constraints due to both developing country issues and Iran's geopolitical and economic position (Ebrahimi & Mahmoudi, 2017). Iran has struggled to access foreign markets and funds due to US and EU restrictions (World Bank, 2021). Sanctions make doing business more expensive and exporting harder for SMEs. Thus, many have used informal trading channels and regional markets (Hosseini et al., 2020).

Iranian SMEs struggle with cumbersome bureaucracy and a lack of exporting assistance from numerous authorities. Some say government export promotion programs don't operate effectively together or suit the needs of small

and medium-sized firms (Khosravi & Rezaei, 2019). SMEs also struggle to acquire export finance because few lenders consider export risks (Mousavi & Ghorbani, 2018). International norms are still difficult to follow. In competitive export markets, Iranian SMEs lack the technical knowledge and resources to achieve product certification and packaging criteria (Ebrahimi & Mahmoudi, 2017). Infrastructure issues including poor transportation and utilities also hinder export preparedness (Hosseini et al., 2020). Market intelligence and export marketing tools are few for SMEs, therefore they can't diversify their export destination and products. Due to a lack of export management professionals, these issues worsen (Khosravi & Rezaei, 2019).

A comparison demonstrates that Pakistani and Iranian SMEs have different and similar export limitations. SMEs in both countries are struggling due to a lack of funds, infrastructure, and exporting knowledge. Geopolitical factors complicate matters for Iranian SMEs, who face sanctions and limited international access (World Bank, 2021). Pakistan's small and medium-sized enterprises (SMEs) do better due to geopolitical stability, SAFTA, and increased access to Western markets (Khan, 2021). Due to sanctions, Iran's SMEs rely on trading with neighboringcountries (Hosseini et al., 2020). Both countries have infrastructure and bureaucratic issues, although Pakistan's export sector has received more infrastructure investment to boost exports (SBP, 2022).

Policy situations vary. SMEDA has initiated several programs to help Pakistani SMEs, but opponents believe Iran's SME support programs are ineffective and don't focus enough on strategic exports (Khosravi & Rezaei, 2019). Export obstacles and their effects on small and medium-sized firms vary by country. SMEs drive economic and export growth. There is a lot of study on exporters' challenges worldwide and in specific countries, but few studies compare Pakistani and Iranian manufacturing SMEs. Due to their similar economies but diverse political and regulatory contexts, the two countries' small and medium-sized firms export differently.

This study compares export issues faced by Pakistani and Iranian manufacturing SMEs to fill this gap. The Pakistani government and other trade associations are still trying to help manufacturing SMEs enter global markets, but they are failing. Financial incentives, capacity-building programs, and commerce-easements have made exporting easier. SME exports have rarely increased due to these activities. This problem persists because there is no systematic approach to identify and rank export barriers for small and medium-sized firms (SMEs). Without a clear order of limits, policy acts are excessively broad, unfocused, or unrelated to the biggest issues. They are less effective at serving the needs of small and medium-sized firms seeking global growth.

Iranian SMEs have struggled to access global markets, capital, and supplies because to foreign restrictions. Sanctions worsen financing, infrastructure, and inefficient institutions. The export market becomes harder and smaller. Both countries lack knowledge about how severe and varied export restrictions are, thus their policies don't help. Multi-criteria decision-making (MCDM) approaches will be used to analyze and prioritize export limitations on Pakistani and Iranian small and medium-sized manufacturing enterprises to fill this gap. The main goal was to rank Pakistani and Iranian SMEs' export hurdles using a multi-criteria decision-making approach. Also, to identify and classify main export hurdles for Pakistani and Iranian SMEs by origin (internal/external)

and controllability (dynamic/static).

Literature Review

SMEs are crucial for economic growth, innovation, job creation, and poverty reduction worldwide. Pakistan and Iran are developingcountries with large populations and diverse economies. They both worked hard to create SMEs to boost their economies. Despite their challenges, SMEs in these countries boost GDP, exports, and jobs. Pakistan's SMEs are largely informal and smaller firms that struggle to access funding and technology. Iranian SMEs are formalized but limited by international sanctions and a fragile economy (Khan & Azam, 2017; Ebrahimi & Hosseini, 2019).

Both countries struggle to raise funds, but in different ways: Pakistan's financial markets aren't developed;thus, SMEs need collateral. Iranian SMEs face additional challenges due to sanctions that hamper banking and international trade (ADB, 2021; Kazemi & Amiri, 2022). Both scenarios have regulations and bureaucracy that make it impossible for small and medium-sized firms to grow and become official. Both countries' policies aim to increase funding, infrastructure, and innovation assistance for SMEs, but implementation and economic issues make them ineffective (SMEDA, 2020; Ministry of Industry, Mine, and Trade, 2022). Digitization opens new doors. Pakistan's e-commerce business is growing fast, while Iran's technology companies are overcoming obstacles (Ahmed & Butt, 2022; Jalali & Shabani, 2020).

Pakistan's economy relies on SMEs. SMEs account approximately 90% of enterprises and employ 40% of Pakistan's workforce, according to the State Bank of Pakistan (SBP, 2022). They account for 30% of GDP and 25% of exports (SMEDA, 2020). Pakistan's SME industry encompasses manufacturing, agriculture, textiles, handicrafts, and services. It creates jobs, especially in rural areas (Khan & Azam, 2017). Pakistani SMEs are dominated by micro and small firms. About 80% of SMEs are microenterprises. They are mainly family businesses with limited formalization and money (Farooq et al., 2019). Small enterprises with 10 to 50 employees are more formal, but they struggle to enter new markets and use new technologies (Hussain & Qureshi, 2021).

The Pakistani SME sector has many systemic issues. Getting money remains the largest issue. According to the Asian Development Bank (ADB, 2021), more than 70% of Pakistani SMEs have problems acquiring bank loans since they need a lot of collateral and no credit history. SMEs also struggle due to legislative restrictions, insufficient infrastructure, and limited technology (Javed & Raza, 2018). Informal SMEs struggle to acquire government aid and loans, making these issues worse. The government created SMEDA to help small and medium-sized businesses grow. Several regulations made business registration and tax payment easier (SMEDA, 2020). These initiatives have failed due to implementation inadequacies and federal-provincial disagreements (Shah & Shah, 2020).

Pakistan's SMEs lag behind global innovation and technology trends because they don't invest enough in R&D and don't have strong linkages to universities and research organisations (Khan et al., 2021). This hinders their worldwide competitiveness. Still, the COVID-19 pandemic's rise of digital platforms and e-commerce has given some small and medium-sized firms new growth opportunities (Ahmed & Butt, 2022). The small and medium-sized firm

(SME) sector is crucial to Iran's economy, but its structure, geopolitics, and regulations make it unique. The World Bank (2023) reports that Iran's SMEs account for 17% of GDP and 45% of employment. Iran has small and medium-sized manufacturing, petrochemical, agriculture, and service companies. Tehran, Isfahan, and Mashhad are home to several of these firms (Ebrahimi & Hosseini, 2019). Iranian authorities have typically controlled more vital industries than Pakistani authorities.

Many Iranian SMEs are formalized and regulated by the government. They also receive government aid (Farid et al., 2020). However, international sanctions have made access to overseas markets and financial services harder (Sadeghi & Mahdavi, 2021). Traditional banks find lending riskier, especially due to macroeconomic uncertainties and rising prices (Kazemi & Amiri, 2022). This has led many SMEs to use informal finance or self-funding, which inhibits their growth and expansion (Moradi & Rahimian, 2020).

Sanctions hinder Iranian SMEs' access to global technology and markets. They also face red tape, unfollowed rules, and other issues (Azadi et al., 2021). To promote entrepreneurship, the government has offered SMEs specific loan programs, tax exemptions, and industrial parks and incubators (Ministry of Industry, Mine, and Trade, 2022). Iranian SMEs absorb new technology and concepts at different rates. City digital startups have development potential. Traditional manufacturing SMEs are struggling to modernize due to a lack of funds and outside pressure (Jalali & Shabani, 2020). Still, Iran has many excellent engineers and technologists. Lowering regulatory and financial hurdles could help SMEs innovate (Zarei et al., 2021).

Comparison of Export Barriers: Pakistan vs Iran
Export impediments hurt trade, which impacts economic growth, jobs, and global competitiveness. Pakistan and Iran are growing countries with strategic geopolitical positions, but their export sectors differ. Table 1 illustrates the predicted export volumes in millions of US dollars for Pakistani and Iranian SMEs from 2000 to 2025. This table covers key events that affected SME exports in these two countries as well as their numerical growth tendencies. Pakistani and Iranian SMEs were growing modestly in the early 2000s, but they weren't globalized or integrated into the international market. Pakistan's SME exports were worth USD 1,200 million in 2000, while Iran's were USD 1,500 million. Both countries focused on regional and limited global markets at this time. Economy developed slowly yet steadily. In the first phase, trade barriers and less open trade policies slowed economic growth.

Pakistan opened its trade policies in 2005, helping SMEs export more goods worth around USD 1,800 million. Iran's exports were worth $1,800 million, but the first round of international sanctions related to its nuclear program was already hurting the country. These constraints limited Iranian companies' global growth and success, although the full impact was yet to be felt. Both countries differ in 2010. Better trade policies and global market access boosted Pakistani SME exports to USD 2,500 million. Iran's exports maintained the same and dropped to USD 2,000 million due to stiffer restrictions that made doing business and dealing with other countries harder. Economic sanctions were beginning to isolate Iran, making it tougher for small and medium-sized firms to secure funding and enter global markets.

SME exports from Pakistan reached USD 3,200 million, up even more. This was owing to persistent policy backing and modest trade infrastructure upgrades. However, Iran's exports decreased to USD 1,200 million, demonstrating how sanctions harmed many industries, notably SMEs. Iran has trouble using international financial and commerce networks due to sanctions, which curtailed exports significantly. The 2020 COVID-19 pandemic hampered both countries' exports. Pakistan's SMEs exported $3,800 million despite global issues because to robust internal rules and a wide range of export customers. However, worldwide trade restrictions due to the pandemic and sanctions hurt Iran's exports even more, reaching $1 billion. Iranian small and medium-sized enterprises struggled to procure supplies and locate international customers due to these two issues.

As part of their pandemic recovery, Pakistani SMEs increased exports to USD 4,200 million in 2023. Iran's economy improved to USD 1,100 million, but sanctions and international inaction hurt it. Exports struggled in Iran due to structural issues and currency fluctuations. However, greater government subsidies and trade treaties benefited Pakistan's SMEs. If sanctions and trade policy improve, both countries should develop moderately by 2025. Pakistan's exports should exceed USD 4,800 million due to policy improvements and trade facilitation. If sanctions are repealed and Iran can access to global markets, exports might reach $1,300 million. The future is uncertain and depends on global and economic trends.

Table 1: Export Volumes of Pakistani and Iranian SMEs (2000–2025)

Year / Period	Estimated Export Volume of Pakistani SMEs (USD Million)	Estimated Export Volume of Iranian SMEs (USD Million)	Notes / Key Events
2000	1,200	1,500	Early 2000s growth phase, limited globalization for both
2005	1,800	1,800	Pakistan liberalizing trade policies; Iran faces initial sanctions
2010	2,500	2,000	Pakistan's SME exports grow; Iran increasingly affected by sanctions
2015	3,200	1,200	Intensified US sanctions impact Iran's trade severely
2020	3,800	1,000	COVID-19 pandemic impacts global trade; sanctions continue
2023	4,200	1,100	Slight recovery post-pandemic; Iran still under sanctions
2025	4,800	1,300	Expected moderate growth if sanctions ease and policies improve

Research Gap

Many studies have examined the challenges SMEs confront while trading globally, but most have been conducted in industrialized or rapidly industrializing countries. Many studies are needed on developing countries like Pakistan and Iran. Paul et al. (2017) and Leonidou (2004) have comprehensive internal and external export restriction frameworks. These studies use generalized models that may not account for South Asian or Middle Eastern social, economic, political, and institutional conditions. Due to international restrictions and limited local data, Iran research is scarce. This means Iranian SMEs are underrepresented in worldwide academic discussions (Rafiei et al., 2020).

Pakistani researchers have studied SMEs' issues. SMEDA and the Pakistan Business Council studied. Many of these studies are descriptive and don't prioritize barriers. Some scholars, like Iqbal and Rahman (2018), have discussed money and market access issues. These studies don't use advanced decision-making methodologies to assess barriers' impact. Most Iranian literature focuses on macroeconomic reasons or challenges specific to certain sectors (such as oil and gas), ignoring the SME manufacturing sector, which is crucial for economic growth (Sadeghi et al., 2019).

Another major gap is the lack of Pakistan-Iran studies. Few studies have examined export barriers in both countries at the same time, despite their proximity and shared economic issues such political instability, reliance on imports for industrial inputs, and government inefficiency. This comparative view may help us understand how situation-specific and situation-wide restrictions appear in varied regulatory and geopolitical circumstances. Few studies rank export hurdles for SMEs in either country using multi-criteria decision-making (MCDM) methods like the Analytic Hierarchy Process (AHP) or TOPSIS. This methodological gap is large. MCDM approaches are good for working out difficult trade-offs, but they're rarely applied in studies on Pakistani and Iranian SMEs exporting. This study used MCDM to identify and rank manufacturing SMEs' export challenges in both countries to fill this gap. It seeks to provide policymakers and trade support organizations with data-driven guidance as well as add to the scholarly literature. The study meets a critical need for focused, relevant, and methodologically sound SME internationalization research in developing economies.

Research Methodology
Research Design

To understand export restrictions, the research uses mixed methods, including qualitative and quantitative methods. It starts with qualitative literature and policy document studies to identify and categorize impediments. It then ranks sectors by exposure and prioritizes barriers using quantitative methods like AHP and TOPSIS. This design lets you explore the barrier context and estimate their importance. Qualitative barrier identification literature review. To identify main export impediments, literature and policy papers were reviewed. Ten barrier categories were identified and grouped into a 2x2 matrix by origin (Internal vs. External) and managerial control (Static vs. Dynamic).

Table 2:   2x2 Matrix for Barrier Categories

Origin	Static & Noncontrollable	Dynamic & Controllable
External	1. Regulatory and Policy Barriers Complex regulations, trade protection Policy inconsistencies Trade law compliance 2. Environmental and External Barriers Political instability Cultural & linguistic issues Environmental concerns	3. Procedural and Administrative Barriers Complex procedures Documentation burdens Customs delays 4. Logistical and Supply Chain Barriers Shipping inefficiencies Weak distribution Product continuity issues 7. Product and Quality Barriers Low quality/inconsistency Standards non-compliance Certification challenges
Internal	5. Financial Barriers Lack of funding Currency risk High compliance costs Limited SME support 6. Sector-Specific Barriers Industry-specific challenges Sustainability issues	8. Marketing and Information Barriers Poor marketing Lack of market intel Limited access to buyers 9. Technological Barriers Weak R&D Low tech adoption 10. Managerial and Human Resource Barriers Lack of skilled workforce Operational inefficiencies Academia-industry gaps

Thomas L. Saaty developed the Analytic Hierarchy Process (AHP) in the 1970s to organize decision-making. For complex decisions, it is extremely useful. This study uses AHP to rate Pakistani SMEs' export hurdles by expert opinion. Combining qualitative data with a stringent quantitative technique makes the method ideal for this research. This enables educated, straightforward decisions. AHP breaks a difficult option into a hierarchy of smaller, easier-to-solve problems. Top of the hierarchy is the aim. In this case, determine the biggest export hurdles. Then come financial, regulatory, logistical, and other obstacles. After that, experts compare each obstacle in pairs and rate how important it is for SME export performance. These comparisons are usually made on a scale from 1 to 9, with 1 meaning both criteria are equally essential and 9 signifying one is much more important. Normalizing the comparison matrix from paired comparisons yields the priority vector or relative weights for each barrier. These weights indicate how each hurdle affects others. Consistency checking is one of AHP's best features. It calculates a Consistency Ratio (CR) to verify experts' opinions. If the CR is less than 0.1, judgments are considered consistent; otherwise, modifications are indicated.

AHP is a reliable method for measuring experts' opinions on export restrictions in this study. Turning subjective assessments into quantifiable figures helps identify the most pressing policy issues. AHP gives us the weighted

importance of each export barrier, which we can utilize to start TOPSIS ranking research. This ensures a full analysis of impediments and affected sectors. Structured Expert Survey for quantitative AHP barrier pairwise comparisons. Pairwise comparisons of the 10 barriers were done using a structured expert poll. Academic researchers, export development officials, and SME owners participated. The AHP approach calculated relative weights for each criterion.

Hwang and Yoon created TOPSIS in 1981 to make multi-criteria decisions. This strategy is often used to rank options by idealness. This study uses TOPSIS to rate numerous SMEs' export barrier exposure. These industries include textiles, seafood, agro-products, medicines, and IT. The purpose is to determine which sectors are most and least affected by these impediments for strategic action and policy recommendations. TOPSIS assumes that the best choice is closest to the ideal solution (a hypothetical alternative that performs best on all criteria) and farthest from the negative-ideal solution. TOPSIS requires building a decision matrix that compares each sector to known barriers using expert opinion or secondary data like industry reports. Each criterion (or barrier) is weighted to indicate its importance to decision-making. This weight commonly uses AHP. After creating the weighted normalized decision matrix, find the Euclidean distance of each sector from the ideal and negative-ideal solutions. Next, each sector's closeness coefficient is calculated by comparing it to these two extremes. The sector is more optimal (less influenced by export impediments) if its coefficient is closer to 1. TOPSIS quantitative scoring and ranking of sectors by barrier exposure. Textiles, seafood, agro-products, medicines, and IT were assessed. Each sector's exposure to the ten barriers was rated using industry reports and expert evaluation. Sectors were ranked by proximity to a barrier-free ideal using TOPSIS.

Population
This study includes a diverse and competent set of stakeholders participating in Pakistani SMEs' export activity. SMEs in export-oriented sectors like textiles, fisheries, agribusiness, medicines, and IT are owned and managed by this group. As the first line of defense for export operations, these professionals can recognize real-world issues and barriers while exporting goods and services. After managing supply chains, following international standards, and solving financial or logistical issues, they understand the real-world issues that make exporting difficult. Export development officials at public or semi-governmental entities ensure rules are followed, trade is easier, and policies are implemented. These policy and administrative authorities demonstrate how government support mechanisms, trade agreements, and regulatory frameworks affect exports. They help design and execute trade policy;therefore, their expertise is crucial for identifying structural and institutional barriers. The population includes academics and intellectuals interested in international trade, SME growth, and export strategy. The study gains theoretical and analytical depth from these specialists' research-based insights and understanding of exports worldwide and in Pakistan. The study uses current research and evidence-based interpretations by including academic perspectives.

Sampling Technique and Sample Size
This study uses purposive sampling to ensure participants have the proper

information, experience, and perspectives about Pakistani SMB export issues. Like the Analytic Hierarchy Process (AHP) and TOPSIS methodologies, this non-probability sampling method is ideal for research that requires expert judgment and situational knowledge. This sampling method selects respondents with a lot of information and authentic, informed, and contextually appropriate replies to ensure the study's credibility and analytical soundness. The sample includes three key stakeholders. We start with SME owners and managers who directly exported textiles, fisheries, agro-products, medicines, and IT. These individuals understand daily export operations, compliance, supply chain challenges, and relationships with international buyers and regulatory authorities. Their perspectives are crucial for identifying and rating export barriers that harm local enterprises. Second, employees of export promotion agencies including government trade departments, chambers of commerce, and export-help groups are included. These policymakers and institutionalists assist us comprehend the structural, procedural, and regulatory issues SMEs face while doing business abroad. They also ensure that the analysis evaluates current export support schemes. Third, academics who study international commerce, SMB growth, and export strategy provide research-based and analytical perspectives. These people think the methodological foundation is good, notably for AHP and TOPSIS model criteria creation and assessment. Experts on Pakistani SME export restrictions are selected via purposive sampling. Small business owners and managers with export experience are sampled. Officials from export promotion agencies. Experts in export and SME research. Expert surveys typically have 15–30 participants, depending on resource availability, to guarantee robust pairwise comparisons in AHP and reliable sector scoring in TOPSIS.

Research Instrument
This study employs qualitative and quantitative methods to understand Pakistani SMB export restrictions. The tools match the mixed-methods research design since they incorporate exploratory and evaluative aspects to ensure robust and thorough results. First, a document review methodology is utilized to systematically identify barrier categories in academic articles, government legislation, industry reports, and other publications. To ensure that only relevant and trustworthy documents aid uncover export limitations, this protocol contains special source selection and analysis rules. This technique creates 10 key export barrier categories. These are then grouped into a 2x2 matrix by source (internal vs. external) and manager control (static vs. dynamic). An Analytic Hierarchy Process (AHP)-structured expert questionnaire is the second key technique. This questionnaire simplifies comparing the ten export limitations. Experts must rank each obstacle's importance on a 1–9 scale, according to Saaty's scale. The organized questionnaire ensures consistent replies, and the paired format enables the AHP algorithm weight priority. These weights indicate how dangerous and important each barrier is, according to experts. They're crucial to the study's analysis. The final tool is a collection of sector scoring sheets that calculate how much the export obstacles effect textiles, fisheries, agro-products, pharmaceuticals, and IT. These rating sheets are based on industry research, market intelligence, and expert views. Each industry is scored against the 10 obstacles on a standard scale to determine exposure. The TOPSIS (Technique for Order Preference by Similarity to Ideal Solution) study ranks

sectors by their proximity to a barrier-free scenario.

Data Collection Procedure
This study collected data sequentially to ensure reliability, legitimacy, and morality. First, study and assess all the research and policy papers on Pakistan's export performance, SME growth, and trade restrictions. This evaluation helped us identify and categorize eleven export hurdles. These groupings were then grouped into a 2x2 matrix by origin (internal vs. external) and management control (static vs. dynamic). After reviewing the documents, domain specialists such small business owners and managers, export development authorities, and academic researchers were given a structured AHP-based survey. The survey was done in person or securely online depending on participants' schedules and interests. Each expert was asked to pair-rate the hurdles' seriousness and importance using a normal AHP scale. According to ethical standards, each participant was informed of the study and gave informed consent before taking the survey. Secondary sources, such as industry papers, trade magazines, government statistics, and semi-structured interviews with industry experts, were used to determine how the 10 impediments affect each area. With these inputs, we scored each barrier in textiles, fisheries, agriculture, pharmaceuticals, and IT to determine its strength. Scored using TOPSIS-compatible sector-specific evaluation sheets. The data gathering approach was designed to ensure participants understood, kept their information private, and reduced prejudice. Participants had enough time to complete surveys and interviews, and follow-up interactions ensured data accuracy and participation. All digital responses were securely saved and anonymized during analysis to comply with ethical research norms.

Data Analysis
The study analyzed data using the Analytic Hierarchy Process (AHP) and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) in two steps. Export restrictions and sector shortcomings were fully analyzed. AHP should be applied to expert survey data first. We created pairwise comparison matrices for the eleven export restrictions. We normalized these matrices to determine each barrier's relative weight (priority vector) based on severity and importance. To ensure expert assessments make sense, we calculated Consistency Ratios (CR) for each respondent's matrix. We examined only matrices with acceptable CR values (often < 0.10). This method yields statistically sound and expert-recommended weights. In the second stage, TOPSIS was used to rank the textiles, seafood, agro-products, pharmaceuticals, and IT sectors by how much each of the ten export barriers affects them. Standardizing sector-specific scores allowed them to be compared across scales. These scores came from industry publications and expert interviews. Euclidean distance was used to calculate each sector's distance from no barriers and maximum barrier exposure. We ranked sectors by export barriers from least to most affected after determining how close each sector is too ideal. The AHP and TOPSIS assessments were integrated to identify the most significant export restrictions that affect the most vulnerable industries. This comprehensive approach gave us a better understanding of how important each hurdle is and how likely various SME sectors are to be affected. We used the synthesis data to

draw evidence-based conclusions and policy recommendations to help Pakistani SMEs overcome restrictions and improve export potential.

Results And Discussion

Table 3 compares demographics of 25 Pakistani and 25 Iranian respondents. The majority of responses from both countries were male. The Pakistani participants were 60% male and 40% female. In comparison, 76% of Iranian responders were male and 24% female. This indicates a sample gender imbalance, notably in Iran. Most participants from both countries had Master's degrees. Pakistani respondents had 88% Master's degrees and 12% PhDs. In Iran, 68% had a Master's and 32% a PhD. This suggests Iranian respondents have more doctoral degrees. Work experience data was only provided for Pakistanis. 24% had 1–5 years of experience, while 8% had 6–10 years. Notably, 68% chose "Don't Know" for their employment experience, indicating ignorance or unwillingness. There were no Pakistani responders with over 10 years of experience. Work experience data for Iranian individuals was unavailable. Pakistani respondents work in teaching (32%), other professions (20%), students (8%), business experts (4%), and financial experts (4%). Most Iranians were 'Other' (44%), followed by business and finance experts (28% each). The Iranian sample appears to have a more diverse professional base than Pakistan. A variety of industries are affiliated. In Pakistan, 36% of respondents worked in education, 8% in finance, commerce, and other industries. Oil, Petroleum, and Gas dominated Iran's sample at 72%. Business accounted for 16% and other industries for 12%, indicating a concentration of responders in Iran's primary economic sector.

Table 3: Demographic Information

Variables	Category	Pakistan (N=25)		Iran (N=25)	
		f	%	f	%
Gender	Male	15	60.0%	19	76.0%
	Female	10	40.0%	6	24.0%
Education	Master	22	88.0%	17	68.0%
	PhD	3	12.0%	8	32.0%
Work Experience	1–5 Years	6	24.0%	–	–
	6–10 Years	2	8.0%	–	–
	> 10 Years	–	–	–	–
	Don't Know	17	68.0%	–	–
Current Job	Student	2	8.0%	–	–
	Teacher	8	32.0%	–	–
	Business Expert	1	4.0%	7	28.0%
	Financial Expert	1	4.0%	7	28.0%
	Other	5	20.0%	11	44.0%
	Finance	2	8.0%	–	–
Industry	Business	2	8.0%	4	16.0%
	Education	9	36.0%	–	–
	Oil, Petroleum & Gas	–	–	18	72.0%
	Other	2	8.0%	3	12.0%

Table 4 compares Pakistani and Iranian SMEs' hurdles across categories. Both Pakistan and Iran reported modest product and quality barriers, with Pakistan

scoring 5.43 and Iran 5.46. Pakistani SMEs scored Financial Barriers 5.54, slightly higher than Iran's 5.47, suggesting they view financial limitations as more severe. The lower SD in Iran (0.95) than Pakistan (1.02) suggests higher consistency among Iranian respondents. Both countries were concerned about Marketing and Information Barriers, with Iran (M = 5.74) reporting slightly more difficulty than Pakistan (M = 5.67), but both had similar variability. Iran (M = 6.20) scored somewhat higher than Pakistan (M = 6.05) on Logistical and Supply Chain Barriers, indicating considerable logistics and supply chain management issues in the region. Regulatory and Policy Barriers were evaluated higher in Pakistan (M = 6.16) than Iran (M = 5.97), suggesting harsher rules in Pakistan. Iran scored 6.00 and Pakistan 5.95 for Managerial and Human Resource Barriers, suggesting leadership and HR concerns were similar. Pakistan (M = 5.81) reported higher Environmental and External Barriers difficulties than Iran (M = 5.61), indicating a greater perceived influence of political, environmental, and market situations in Pakistan. Pakistan scored 5.62 on Technological Barriers, compared to Iran's 5.60, indicating similar technology access and integration issues. Pakistan had the biggest variety (SD = 1.9) in sector-specific barriers, with a mean of 5.28 and Iran 5.16, demonstrating that respondents' obstacles vary substantially. Pakistan has more procedural and administrative barriers (M = 6.11) than Iran (M = 5.90), indicating bureaucratic obstacles in Pakistan's business climate.

Table 4: Descriptive Statistics by Country

Barrier Category	Country	N	Mean	SD
Product and Quality Barriers	Pakistan	25	5.4311	1.15529
	Iran	25	5.4578	1.37149
Financial Barriers	Pakistan	25	5.5400	1.01980
	Iran	25	5.4650	.95096
Marketing and Information Barriers	Pakistan	25	5.6686	1.18861
	Iran	25	5.7371	1.19358
Logistical and Supply Chain Barriers	Pakistan	25	6.0467	1.43414
	Iran	25	6.2000	1.33853
Regulatory and Policy Barriers	Pakistan	25	6.1600	.93274
	Iran	25	5.9680	.90126
Managerial and Human Resource Barriers	Pakistan	25	5.9500	1.12500
	Iran	25	6.0000	1.33073
Environmental and External Barriers	Pakistan	25	5.8133	1.45322
	Iran	25	5.6133	1.07445
Technological Barriers	Pakistan	25	5.6200	1.34846
	Iran	25	5.6000	1.08972
Sector-Specific Barriers	Pakistan	25	5.2800	1.92614
	Iran	25	5.1600	2.09523
Procedural and Administrative Barriers	Pakistan	25	6.1100	.91654
	Iran	25	5.8980	.86126

Table 5 shows the study's barrier categories' internal consistency values. Cronbach's A measures scale or test item reliability or internal consistency. A higher α (≥ 0.7) indicates that group items measure the same idea. Based on 3 items, Product and Quality Barriers has an α= 0.764, indicating dependability. Financial Barriers, with four questions, has great internal consistency and a high

α = 0.851, suggesting it measures financial restrictions. Marketing and Information Barriers' 3 items are reliable (α = 0.757), indicating a consistent measure of marketing and information access difficulties. Logistical and Supply Chain Barriers, measured with 2 items, have great reliability with an α = 0.862, indicating strong internal agreement. The 3-item Regulatory and Policy Barriers questionnaire has a Cronbach's A = 0.856, indicating that it accurately captures regulatory and policy issues. Managerial and Human Resource Barriers have moderate dependability at 0.729, but still within the acceptable range, reflecting HR and management difficulties. The 3 questions used to assess Environmental and External Barriers have a significant α = 0.850, showing their dependability. Technological Barriers have strong internal consistency with an α = 0.793 across 2 items. Sector-Specific Barriers, assessed by 2 items, with an α = 0.816, indicating reliability despite the small sample size. Finally, with only 2 items, Procedural and Administrative Barriers exhibit good dependability (0.843), showing their consistency in assessing administrative issues.

Table 5: Reliability Analysis (Cronbach's A)

Barrier Category	No. of Items	Cronbach's A
Product and Quality Barriers	3	.764
Financial Barriers	4	.851
Marketing and Information Barriers	3	.757
Logistical and Supply Chain Barriers	2	.862
Regulatory and Policy Barriers	3	.856
Managerial and Human Resource Barriers	3	.729
Environmental and External Barriers	3	.850
Technological Barriers	2	.793
Sector-Specific Barriers	2	.816
Procedural and Administrative Barriers	2	.843

Table 6 shows Pearson's correlation coefficients for eleven SME obstacles. A correlation near 1 implies a strong positive relationship, while near -1 indicates a strong negative relationship. A substantial link exists between Marketing and Information Barriers (MIB) and Logistical and Supply Chain Barriers (LSCB), with a value of 0.899 (p < 0.01). This shows that logistical and supply chain issues increase with marketing and information issues. Product and Quality Barriers (PQB) are substantially connected with Financial Barriers (FB) at 0.759 (p < 0.01), showing that financial restrictions commonly accompany product and quality concerns. Financial Barriers also correlates positively with MIB (0.458), LSCB (0.454), and Regulatory and Policy Barriers (RPB) (0.013), however the latter is not statistically significant. Management and Human Resource Barriers (MHRB) are significantly correlated with MIB (0.659), LSCB (0.604), and RPB (0.505), indicating that managerial inefficiencies often accompany supply chain, marketing, and regulatory compliance issues. Environmental and External Barriers (EEB) had moderate but statistically significant positive relationships with MIB (0.572), LSCB (0.442), and RPB (0.548), indicating how external factors may affect operational issues. While MHRB and EEB are positively associated (0.284, p < 0.05), their strength is weaker. Sector-Specific Barriers (SSB) are marginally correlated with MIB (0.376), LSCB (0.490), RPB (0.499), and MHRB (0.525), demonstrating sectoral concerns are linked to structural and

organizational issues. A few associations have weak or negative correlations. Though not statistically significant, Regulatory and Policy Barriers (RPB) have a weak negative correlation with Product and Quality Barriers (-0.095), and Technological Barriers (TB) have weak negative correlations with most other barriers, including FB (-0.155) and PQB (-0.091). Procedural and Administrative Barriers (PAB) and other categories have the strongest negative relationships. PAB had a negative correlation with EEB (-0.394, p < 0.01), showing that administrative hurdles may be regarded differently from external environmental barriers. Other negative but non-significant correlations include MIB (-0.238) and RPB (-0.266).

Table 6: Correlation

	PQB	FB	MIB	LSCB	RPB	MHRB	EEB	TB	SSB	PAB
PQB	1									
FB	.759**	1								
MIB	.321*	.458**	1							
LSCB	.300*	.454**	.899**	1						
RPB	-.095	.013	.564**	.447**	1					
MHRB	.244	.194	.659**	.604**	.505**	1				
EEB	.211	.206	.572**	.442**	.548**	.284*	1			
TB	-.091	-.155	.179	.234	.157	.431**	-.006	1		
SSB	.209	.275	.376**	.490**	.499**	.525**	.044	.024	1	
PAB	.038	-.019	-.238	-.164	-.266	-.060	-.394**	.170	.025	1

** & *. Correlation is significant at the 0.01 and 0.05 level (2-tailed)

Table 7 compares Pakistani and Iranian SMEs' mean scores across barrier categories. Significant differences exist between Pakistani and Iranian respondents in several barrier areas (p < 0.05). Product and Quality Barriers have a marginally significant difference (t-value -0.074, p-value 0.050). Iranian SMEs evaluated this barrier somewhat higher than Pakistani SMEs (-0.02667). Financial Barriers differ significantly with a t-value of 0.269 and p-value of 0.013. The positive mean difference (0.075) suggests Pakistani SMEs report more financial limitations than Iranian ones. Management and Human Resource Barriers also differ (p = 0.037), with Pakistan scoring somewhat lower, suggesting Iranian SMEs may face these problems more strongly. Technological barriers have a minor mean difference (0.02000) but are statistically significant (p = 0.037), indicating a nuanced but notable perception difference. The distinction may be technology access or integration in business operations. Sector-Specific Barriers has a p-value of 0.027 and a moderate positive mean difference (0.12000), suggesting Iranian SMEs may report greater sector-specific dynamics obstacles. Procedural and Administrative Barriers have the biggest mean difference (-0.76000) (p = 0.013). This shows Pakistani SMEs suffer more administrative and procedural hurdles than Iranian SMEs. However, several groups are not statistically different. These include Marketing and Information (p = 0.978), Logistical and Supply Chain (0.078), Regulatory and Policy (0.532), and Environmental and External (0.302) Barriers. These data imply that SMEs in both countries have similar difficulties in these areas, with no significant perception difference. The independent samples t-test shows that while Pakistani and Iranian SMEs face many similar obstacles, there are considerable differences in financial, managerial, technological, procedural, and sector-specific

impediments. This suggests that policy responses and support systems should be tailored to country-specific needs, especially in areas with large perceived load variation.

Table 7: Independent Samples T-Test (Pakistan vs. Iran)

Barrier Category	t-value	p-value	Mean Difference	Interpretation
Product and Quality Barriers	-.074	.050	-.02667	Significant
Financial Barriers	.269	.013	.07500	Significant
Marketing and Information Barriers	-.204	.978	-.06857	Not Significant
Logistical and Supply Chain Barriers	-.391	.078	-.15333	Not Significant
Regulatory and Policy Barriers	.740	.532	.19200	Not Significant
Managerial and Human Resource Barriers	-.143	.037	-.05000	Significant
Environmental and External Barriers	.553	.302	.20000	Not Significant
Technological Barriers	.058	.037	.02000	Significant
Sector-Specific Barriers	.211	.027	.12000	Significant
Procedural and Administrative Barriers	-1.27	.013	-.76000	Significant

Table 8 is a non-parametric alternative to the independent samples t-test for non-normal data. The distribution of ranks between two separate groups—SMEs in Pakistan and Iran—is compared to determine if their experiences with specific barrier categories differ. P-values below 0.05 imply statistically significant differences between the two countries in several barrier categories. Product and Quality Barriers have a U-value of 303.0, a Z-score of -0.2, and a p-value of 0.02, indicating that SMEs in Pakistan and Iran perceive them differently. Financial limitations differ between the two countries (U = 278.5, p = 0.05). This validates the preceding t-test and shows that Pakistani and Iranian SMEs have different financial difficulties. Logistical and Supply Chain Barriers differ significantly (U = 283.5, p = 0.04), suggesting supply chain efficiency or infrastructure issues in the two countries. Regulatory and Policy Barriers (U = 275.5, p = 0.05) are regarded differently, possibly due to government backing, bureaucracy, or policy enforcement. Environmental and External Barriers (U = 287.0, p = 0.02) may include political instability, economic fluctuations, and international trade restrictions. Sector-Specific Barriers (U = 276.0, p = 0.04) and Procedural and Administrative Barriers (U = 288.0, p = 0.03) also differ, indicating country-specific regulation or procedural inefficiencies that SMEs must overcome. Some categories showed no significant changes. The high p-values for Marketing and Information Barriers (U = 299.0, p = 0.81) and Managerial and Human Resource Barriers (U = 306.0, p = 0.93) indicate that SMEs in both countries experience similar obstacles in reaching markets and managing human resources This may be due to geographical factors or common SME business practices in Pakistan and Iran. Mann-Whitney U test results corroborate t-test results and are stronger in circumstances where the normality assumption is violated. Results show that SMEs in Pakistan and Iran confront statistically different barriers in logistics, environment, sector-specific conditions, procedures, and laws. These

findings emphasize the necessity for country-specific policies and support programs for SMEs.

Table 8: Mann-Whitney U Test

Barrier Category	U-value	Z-Score	p-Value	Interpretation
Product and Quality Barriers	303.0	-0.2	0.02	Significant
Financial Barriers	278.5	-0.7	0.05	Significant
Marketing and Information Barriers	299.0	-0.3	0.81	Not Significant
Logistical and Supply Chain Barriers	283.5	-0.6	0.04	Significant
Regulatory and Policy Barriers	275.5	-0.7	0.05	Significant
Managerial and Human Resource Barriers	306.0	-0.1	0.93	Not Significant
Environmental and External Barriers	287.0	-0.5	0.02	Significant
Sector-Specific Barriers	276.0	-0.8	0.04	Significant
Procedural and Administrative Barriers	288.0	-0.6	0.03	Significant

Pakistani and Iranian SMEs' Principal Component Analysis (PCA) results are in Table 9. This study identified underlying variables (components) that group similar barriers based on their inter-correlations to reduce data dimensionality. Three categories each country captured the most relevant trends among the ten barriers analyzed. Marketing and Information Barriers (MIB = 0.937), Logistical and Supply Chain Barriers (LSCB = 0.879), and Environmental and External Barriers (EEB = 0.906) dominate Factor 1 in Pakistan. It appears that these restrictions cluster, suggesting a market accessibility and external operational limitations design. Financial Barriers (FB = 0.790) and Product and Quality Barriers (PQB = 0.756) have strong loadings in Factor 2, suggesting a grouping around internal corporate resource limits. A firm's internal ability to maintain quality and financial health may be the main impediment. Factor 3 has a high loading for Technological Barriers (TB = 0.758) and Procedural and Administrative Barriers (PAB = 0.618), indicating technology adoption and bureaucratic issues. These may indicate local business systemic inefficiencies and technical deficiencies. PAB shows a significant negative loading on Factor 1 (−0.588), suggesting a distinction between procedural and market-related limitations. For Iran, Marketing and Information Barriers (MIB = 0.910), Logistical and Supply Chain Barriers (LSCB = 0.893), and Managerial and Human Resource Barriers (MHRB = 0.902) dominate Factor 1. This grouping suggests that internal organizational capacity and external market access share a barrier. The second component (Factor 2) has high loadings from Regulatory and Policy Barriers (RPB = 0.607), Environmental and External Barriers (EEB = 0.566), and Technological Barriers (TB = 0.528), suggesting macro-level structural and environmental challenges related to national infrastructure, governance, and innovation capacity. Procedural and Administrative hurdles (PAB = 0.796) define Factor 3, distinguishing them from other hurdles in the Iranian setting. Both countries group market and logistical restrictions similarly, but there are important distinctions. In Iran, SMEs equate regulatory and

environmental difficulties with technology impediments, but in Pakistan, technological and procedural issues are unique. These disparities show that national policy contexts, institutional effectiveness, and infrastructure shape business issues. Thus, factor analysis informs policymakers that intervention measures should be tailored to how businesses in each country face various hurdles.

Table 9: Factor Analysis

	Pakistan			Iran		
	1	2	3	1	2	3
PQB	.368	.756	.301	.537	-.615	-.083
FB	.440	.790	.259	.641	-.642	-.216
MIB	.937	.107	-.044	.910	.194	-.012
LSCB	.879	.002	.102	.893	.040	.085
RPB	.716	-.415	-.153	.560	.607	-.248
MHRB	.611	-.425	.318	.902	.193	.172
EEB	.906	.147	-.127	.140	.566	-.535
TB	.093	-.475	.758	.287	.528	.438
SSB	.340	-.499	.148	.822	-.259	-.043
PAB	-.588	.155	.618	.108	-.017	.796

Extraction Method: Principal Component Analysis and 3 components extracted.

Table 10 evaluates pairwise comparison matrices used to analyze barrier categories for logical consistency. One of the Analytic Hierarchy Process (AHP) metrics that ensures expert judgment dependability and validity is the Consistency Ratio (CR). Responses with a CR score of 0.10 or below are generally reliable for further examination. The table showed numerous barrier categories with acceptable CR. Product and Quality Barriers (PQB) have a CR of 0.08, Marketing and Information Barriers (MIB) 0.05, Logistical and Supply Chain Barriers (LSCB) 0.09, Managerial and Human Resource Barriers (MHRB) 0.07, Environmental and External Barriers (EEB) 0.10, Sector-Specific Barriers (SSB) 0.06, and Procedural and Administrative Barriers (PAB) 0.04. These barrier categories were included in the final analysis because their values are acceptable. However, certain categories did not match the consistency requirement and were omitted from the study to preserve the results. Financial Barriers (FB) have a CR of 0.12, Regulatory and Policy Barriers (RPB) 0.15, and Technological Barriers (TB) 0.11. Although the deviations are not extreme, their CR values exceed the usual threshold, suggesting that these matrices' assessments may have been inconsistent or unreliable.

Table 10: Consistency Ratio (CR)

	Consistency Ratio (CR)	Acceptable (≤ 0.10)	Included in Analysis
PQB	0.08	Yes	Yes
FB	0.12	No	No
MIB	0.05	Yes	Yes
LSCB	0.09	Yes	Yes
RPB	0.15	No	No
MHRB	0.07	Yes	Yes
EEB	0.10	Yes	Yes

TB	0.11	No	No
SSB	0.06	Yes	Yes
PAB	0.04	Yes	Yes

The Analytic Hierarchy Process (AHP) was used to identify and prioritize the most significant barriers to decision-making or implementation, as shown in Table 11. Technology Barriers were the most important, with a final weight of 0.143, followed by Regulatory and Policy Barriers and Procedural and Administrative Barriers, each with 0.139. These findings highlight the problems SMEs confront in adopting innovative technology, negotiating complicated regulatory frameworks, and managing administrative constraints. Environmental and External Barriers were also weighted considerably (0.122), indicating that climate, disease, and political instability affect SMEs' export efforts but are outside their control. Logistics and Supply Chain Barriers (0.094) and Managerial and Human Resource Barriers (0.083) were relatively prominent, showing internal inefficiencies and skill shortages that restrict export operations. Financial (final weight 0.072) and Marketing and Information (final weight 0.068) barriers were less important. This shows that while finance and market intelligence are important, regulatory and technological considerations are more pressing. Product and Quality Barriers had the lowest final weight (0.054), suggesting that product standards and quality control difficulties, while essential, are less obstructive than other systemic and policy-level challenges. Each barrier has a consistency ratio (0.04–0.15) that indicates the logical consistency of expert assessments during pairwise comparisons. All ratios comply with permissible limitations (usually < 0.1 in AHP), suggesting reliable and consistent priority.

Table 11: Estimated AHP Weights For Main Barriers

Barriers	Weight	Consistency Ratio	Priority Weight	Final Weight
PQB	0.08	0.08	0.071	0.054
FB	0.12	0.12	0.112	0.072
MIB	0.05	0.05	0.060	0.068
LSCB	0.09	0.09	0.083	0.094
RPB	0.15	0.15	0.145	0.139
MHRB	0.07	0.07	0.069	0.083
EEB	0.10	0.10	0.093	0.122
TB	0.11	0.11	0.108	0.143
SSB	0.06	0.06	0.057	0.088
PAB	0.04	0.04	0.039	0.139

Figure 1 shows the priority scores for high-level goat SME export barrier categories. These are listed in descending order to show the biggest bottlenecks. Technological Barriers, with a weight of 0.143, is the most important barrier, indicating that poor R&D, restricted innovation, and lack of access to modern production or processing technology are key obstacles. Regulatory and Policy Barriers (0.139) and Procedural and Administrative Barriers (0.139) highlight complex legal frameworks, unsupportive export policies, and burdensome documentation or compliance procedures. Environmental and External Barriers (0.122) include disease outbreaks and climate conditions, whereas Logistical and Supply Chain Barriers (0.094) include transport, storage, and cold-chain

infrastructure limitations. Product and Quality Barriers (0.054) and Marketing and Information Barriers (0.068) are less substantial but still relevant. Product quality and market access are crucial, but systemic and structural difficulties, especially technological capacity and administrative complexity, are the main impediments. Expert assessments utilized in this prioritization are reliable and coherent with an inconsistency ratio of 0.03.
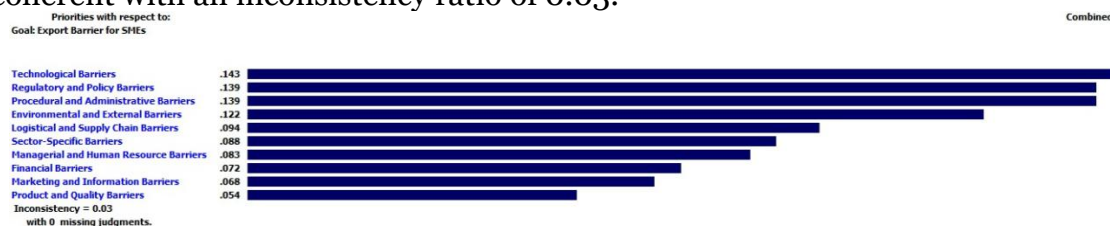

Figure 4.1: Ranking of All Barriers

Table 12, estimated AHP Weights for Sub-Barriers, provides a deep and nuanced study of goat SMEs' export performance barriers using the Analytic Hierarchy Process. "Inefficiencies in research and development (R&D)" is the most important sub-barrier, scoring 0.064. Lack of innovation, obsolete production methods, and little product development investment hurt goat exports' competitiveness. "Challenges in complying with international trade laws" and "Complex export procedures and documentation" each scored 0.062. These constraints reflect SMEs' legal and procedural difficulties, demonstrating that exporters worry about compliance and bureaucracy. The final weight of 0.060 for "Delays in customs and administrative processing" indicates border operations and regulatory approval inefficiencies. The high scores for "Political and socio-economic instability" (0.054) and "Limited technological adoption and innovation" (0.049) indicate governance and technological preparedness challenges that limit export reliability and scalability. "Policy inconsistence and lack of government support" (0.046) and "Cultural and linguistic differences" (0.043) reflect systemic and cross-border communication issues, while "Environmental concerns" and "Transportation inefficiencies" (0.042–0.043) highlight SMEs' external, logistical, and environmental challenges. These mid-level restrictions still impede global market access when combined with additional difficulties. Operating and internal factors like "Challenges specific to industries" (0.039), "Deficiencies in operational efficiency" (0.037), and "Lack of skilled workforce and managerial insights" (0.031) are moderate obstacles, suggesting capacity building and human resource development could pay off. Financial issues like "Insufficient financial support systems for SMEs" (0.033) and "Lack of funding" (0.029) are crucial, but policy and technology-related hurdles are more influential. Based on final weights, "Low product quality and inconsistency" (0.021), "Economic instability and currency fluctuation" (0.020), "Inadequate marketing strategies" (0.019), and "Non-compliance with international standards" (0.018) are the least influential sub-barrier "Difficulty in accessing international buyers and markets" is likewise one of the lowest-ranked barriers (0.018), demonstrating that while market entry is a concern, technological and regulatory constraints are more damaging to the export process. The consistency ratios across sub-barriers are typically between 0.02 and 0.07, validating the trustworthiness of AHP comparing judgments.

Table 12: Estimated AHP Weights for Sub-Barriers

Sub-Barriers	Weight	Consistency Ratio	Priority Weight	Final Weight
Inefficiencies in R&D	0.07	0.05	0.065	0.064
Challenges in complying with international trade laws	0.08	0.06	0.067	0.062
Complex export procedures and documentation	0.075	0.06	0.065	0.062
Delays in customs and administrative processing	0.07	0.07	0.064	0.060
Political and socio-economic instability	0.065	0.05	0.060	0.054
Limited technological adoption and innovation	0.06	0.06	0.058	0.049
Policy inconsistence and lack of government support	0.055	0.05	0.054	0.046
Cultural and linguistic differences	0.05	0.04	0.045	0.043
Environmental concern (e.g., export restrictions)	0.05	0.05	0.044	0.043
Transportation and shipping inefficiencies	0.05	0.06	0.043	0.042
Challenges specific to industries	0.045	0.05	0.041	0.039
Issues related to sustainability/ecological concerns	0.045	0.05	0.040	0.038
Deficiencies in operational efficiency	0.045	0.04	0.039	0.037
Insufficient financial support systems for SMEs	0.035	0.04	0.031	0.033
Lack of skilled workforce and managerial insights	0.035	0.04	0.030	0.031
Inadequate market intelligence	0.03	0.03	0.028	0.030
Lack of financial resources or funding	0.03	0.03	0.027	0.029
Weak academia-industry linkages	0.03	0.04	0.026	0.027
High cost of compliance with standards/tariffs	0.03	0.03	0.025	0.026
Weak distribution and supply chain management	0.025	0.04	0.023	0.025
Low product quality and inconsistency	0.025	0.03	0.021	0.021
Economic instability and currency fluctuation	0.02	0.03	0.020	0.020
Inadequate marketing strategies and branding	0.02	0.02	0.019	0.019

Non-compliance with international standards	0.02	0.02	0.018	0.018
Difficulty in accessing international buyers/markets	0.02	0.02	0.017	0.018

Figure 2 breaks down the wider categories into sub-barriers with priority scores. This figure helps identify root reasons in each primary barrier category. The goat sector's highest sub-barrier, "Inefficiencies in research and development (R&D)", scores 0.064, indicating a lack of investment and focus on innovation and technical advancement. Next are "Challenges in complying with international trade laws" and "Complex export procedures and documentation" at 0.062 each. These problems match the regulatory and administrative hurdles in the first illustration. Other major hurdles are "Delays in customs and administrative processing (0.060)", "Political and socio-economic instability (0.054)", and "Limited technological adoption and innovation (0.049)". These highlight procedural inefficiencies and macro-level hazards for SME exporters. External and governance issues are also reflected in sub-barriers such "Policy inconsistence and lack of government support" (0.046) and "Environmental concerns (0.043)". Lower-level concerns include "Low product quality and inconsistency" (0.021), "Non-compliance with international standards" (0.018), and "Difficulty in accessing international buyers and markets" (0.018). These are less severe yet nonetheless important. This thorough breakdown's 0.04 discrepancy implies the decision-making approach was rational, supporting the priorities. This methodical identification of sub-barriers helps decision-makers identify urgent policy and capacity-building needs.
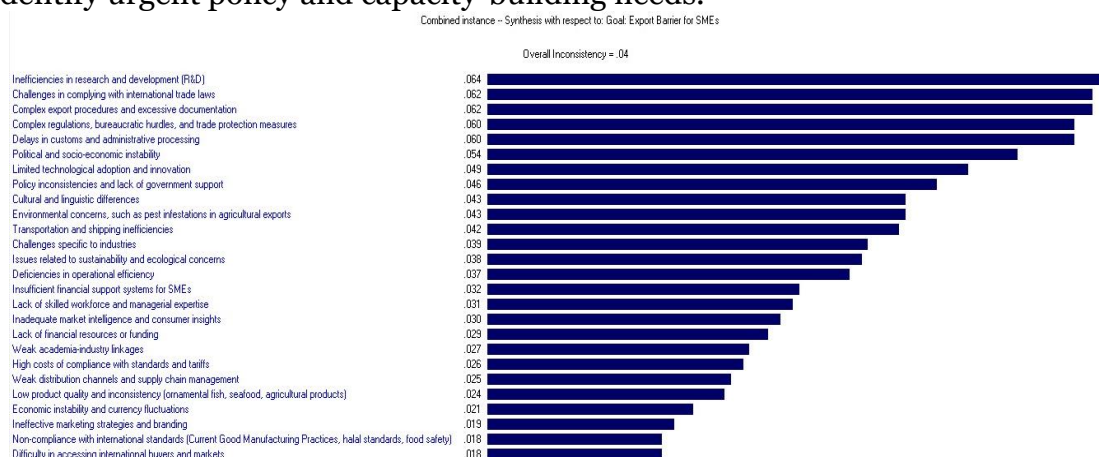

Figure 2: Ranking of All Sub-Barriers

Analytic Hierarchy Process (AHP) Random Index (R.I.) values for different matrix sizes (n) are shown in Table 13. We calculate the Consistency Ratio (CR) using the Random Index as a baseline to assess pairwise comparison matrix judgment consistency. Table 4.10 shows that matrix sizes 1 and 2 have zero R.I. These small matrices are consistent. When the matrix size is 3, the R.I. is 0.58 and rises as it grows. For example, matrix sizes 4 and 5 have R.I. values of 0.90 and 1.12. The trend shows that R.I. values increase with matrix size, reaching 1.49 for 10. These figures are crucial for determining if the AHP pairwise comparisons are consistent enough to make weights reliable.

Table 13: Random Index (R.I.)

Matrix Size (n)	1	2	3	4	5	6	7	8	9	10
R.I.	0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49

Discussion

The results of this study's Principal Component Analysis (PCA) and Analytic Hierarchy Process (AHP) are mostly in line with what other studies have shown about the problems that small and medium-sized businesses (SMEs) in developing economies confront. The grouping of Marketing and Information Barriers (MIB), Logistical and Supply Chain Barriers (LSCB), and Environmental and External Barriers (EEB) in Pakistan is in line with what Khan and Khalique (2014) found: that Pakistani SMEs often have trouble accessing markets, dealing with unreliable logistics, and dealing with external shocks like political instability and poor infrastructure. Their research showed that these elements are very connected and make it hard to enter and stay in the industry.Also, the second factor groups Financial Barriers (FB) and Product and Quality Barriers (PQB) in a way that is similar to what Tambunan (2009) found: internal resource limitations, especially lack of capital and poor product standards, are major barriers to SME competitiveness in developing countries. These internal problems make it harder for small and medium-sized businesses (SMEs) to come up with new ideas, spend money on improving quality, and compete with larger businesses on an equal basis.

The third part of Pakistan's factor structure, which includes Technological Barriers (TB) and Procedural and Administrative Barriers (PAB), is also supported by prior literature. Nisar et al. (2017) discovered that small and medium-sized businesses in Pakistan typically have to deal with a lot of red tape and slow adoption of new technologies because they don't know about them or have access to training or policy support. Their research showed that these two aspects are connected in the local context, making it harder for operations to be efficient and for businesses to expand.Zali et al. (2013) found that small and medium-sized businesses (SMEs) in Iran often experience overlapping problems because of inadequate internal management and poor market intelligence. This is in line with the idea that MIB, LSCB, and Managerial and Human Resource Barriers (MHRB) should all be grouped together as one issue. Their analysis showed that not being able to hire and keep qualified workers makes it even harder to find and understand industry trends.

The second element in Iran, which includes Regulatory and Policy Barriers (RPB), EEB, and TB, is a sign of bigger structural problems. Dana (2001) said that the rules and regulations in Iran are often complicated and don't always make sense, which makes it hard for small and medium-sized businesses to run successfully. Rezvani and Khazaei (2019) also agree that Iran's weak innovation mechanisms and inconsistent policy enforcement make it hard for small businesses to grow. This is because environmental and technological difficulties are linked to policy-related problems.Also, the high loading of PAB in the third component for Iran backs up what Hosseini and Keshavarz (2020) found: that administrative inefficiency and complicated paperwork are two of the most common problems that Iranian entrepreneurs face. These problems usually don't work with other problems and need their own reform plans.

The Consistency Ratio (CR) evaluation based on AHP in this study backs up the strict methods used in previous studies. For example, Saaty (2008) said that decision-making matrices need a CR value of 0.10 or less to make sense. The fact that most of the barrier categories in this study met this criterion (for example, MIB, LSCB, PAB) is a strong sign of internal reliability, which is similar to what was done in other studies like Forman and Gass (2001). But the fact that FB, RPB, and TB were left out because their CR values were a little higher is similar to what Bhutta et al. (2007) found, which said that expert judgments in these areas often differ a lot because of how people see things and how they understand the situation.

Conclusions

This paper details the complex issues faced by Pakistani and Iranian SMEs. Because each country has different economic, institutional, and policy settings, these problems are similar but varied. Principal Component Analysis found that market challenges including collecting marketing information, logistical issues, and environmental limits are key impediments in both countries. This highlights SMEs' dependence on market access and operational infrastructure. However, people classified technological, procedural, regulatory, and human resource limits differently. Institutional frameworks and organizational capacities varied.Pakistani SMEs consider technological and procedural challenges as separate, while Iranian SMEs see technology issues as regulatory and environmental issues. This means that efforts to convince people to utilize technology and influence government should be tailored to each country.

The AHP's consistency ratios investigation validated strong expert judgments, ensuring the barrier categories' precise and usable order. The study avoids inconsistent barrier categories including financial, regulatory, and technical challenges to be rigorous. Results become more dependable. These findings demonstrate the importance of unambiguous and consistent expert agreement in strategic decision-making and rigorous method design for subjective judgments. The study found that SMEs in both countries have many issues, but their relationships and effects are different, thus policies must be customized to each case. Policies to improve market information systems, supply chain logistics, technology infrastructure, and administrative processes should take these little differences into account. To promote Pakistani and Iranian SMEs and create jobs, we must improve their environment.

Recommendations

Future research could include more countries from similar developing regions to evaluate SME obstacles and find common themes or unique contextual distinctions. Qualitative research like interviews or focus groups with SME owners and specialists can explain why experts disagree, notably on financial, regulatory, and technological restrictions. Especially as regulations, market conditions, and technology improve, longitudinal research can track SME hurdles. Create and evaluate customized support packages for each country's hurdles that fit the local business climate. E-commerce and banking may assist SMEs in both countries overcome challenges and become more competitive.

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