

Information-Sharing Practices in Islamabad and Rawalpindi Garment Firms: A Descriptive–Comparative Study

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ABSTRACT: This study examines and compares information-sharing practices among garment manufacturing firms in Islamabad and Rawalpindi, highlighting their role in strengthening supply chain coordination and competitiveness. Using a descriptive–comparative, cross-sectional design, data were collected from 205 supply chain managers through a structured questionnaire. The survey assessed partner-accessible digital databases, forecast and production plan sharing, responsiveness to requirement changes, and perceived technological and organizational barriers. The results reveal significant differences between the two clusters. Firms in Islamabad reported greater use of digital tools, stronger engagement in collaborative forecasting, and faster communication of requirement changes. In contrast, Rawalpindi firms demonstrated slower adoption of digital systems and reported more pronounced challenges related to structural limitations, technology use, and organizational resistance. These gaps suggest that Islamabad firms are more advanced in leveraging information sharing for supply chain responsiveness and innovation, while Rawalpindi firms lag behind. Overall, the findings reinforce the importance of information sharing as a critical enabler of supply chain performance. The study recommends targeted interventions—such as investment in digital capacity, improved communication mechanisms, and supportive policy measures—to enhance collaboration and integration within Pakistan’s garment sector.

KEYWORDS: Information Sharing, Supply Chain Management, Digital Adoption, Collaboration, Garment Industry, Pakistan

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Introduction

In contemporary supply chains, the smooth flow of information is as important as the physical flow of goods. The timely exchange of accurate and relevant data reduces uncertainty, strengthens coordination, and enables firms to respond effectively to customer demands and market fluctuations (Huo et al., 2020). For industries such as garments, where production schedules are tight and consumer preferences change rapidly, information sharing in the form of forecasts, production plans, and change notifications is a vital element of supply chain competitiveness (Hanaysha & Alzoubi, 2022).

Pakistan’s garment industry plays a central role in the national economy, with clusters of small and medium enterprises concentrated in major cities, including Islamabad and Rawalpindi. Despite their

proximity, the two clusters exhibit noticeable differences in technological adoption and managerial practices. Firms in Islamabad have shown greater integration of digital systems, while those in Rawalpindi often rely on more traditional coordination approaches, making information sharing less consistent (Jianguo & Solangi, 2023; Tran et al., 2024). These contrasts raise important questions about the extent and quality of information sharing in each cluster.

Although international literature consistently links information sharing to improved supply chain performance through trust, collaboration, and learning (Ahmed, 2022; Wu et al., 2014), evidence from developing economies at the cluster level remains limited. Most studies highlight national trends but pay less attention to intra-country variations. Recent scholarship suggests that local infrastructure, governance structures, and technological readiness strongly influence how firms adopt and benefit from information sharing (Bari, 2019; Zhou & Ma, 2024; Jebbor et al., 2024). Against this backdrop, the present study investigates and compares the information-sharing practices of garment manufacturing firms in Islamabad and Rawalpindi. By analyzing adoption levels, communication efficiency, and barriers to collaboration, this research contributes to a more nuanced understanding of cluster-level differences and provides practical insights for managers and policymakers aiming to strengthen supply chain competitiveness in Pakistan.

Research Gap

Although information sharing has been widely studied in the context of global supply chains, there remains limited evidence on how such practices vary within countries, particularly across industrial clusters in emerging economies. In Pakistan's apparel sector, little is known about the extent to which garment firms in geographically close yet institutionally distinct cities differ in their adoption and quality of information-sharing mechanisms. The contrast between Islamabad and Rawalpindi has not been systematically examined in prior research. This study seeks to fill that gap by documenting the nature of information-sharing practices within each cluster and comparing them across the two cities through descriptive analysis and statistical testing.

Research Objectives

1. To evaluate the extent and quality of information-sharing practices adopted by garment firms in Islamabad.
2. To examine the extent and quality of information-sharing practices within garment firms operating in Rawalpindi.
3. To conduct a comparative analysis of the two clusters in order to identify similarities, differences, and potential gaps in their information-sharing approaches.

Research Questions

1. What is the nature and quality of information-sharing practices implemented by garment firms in Islamabad?
2. How do garment firms in Rawalpindi engage in and manage information-sharing activities?
3. In what ways do information-sharing practices differ between the two clusters of firms located in Islamabad and Rawalpindi?

Review of Related Literature

Information sharing (IS) within supply chains typically involves the exchange of critical data such as demand forecasts, inventory levels, production schedules, and notifications of requirement changes. Prior empirical research suggests that effective information exchange is closely associated with integration capabilities, organizational learning, and trust among partners (Huo et al., 2020; Ahmed, 2022). Increasingly, these practices are being facilitated by digital platforms, advanced analytics, and real-time communication tools, which enable firms to strengthen coordination and improve decision-making processes (Hanaysha & Alzoubi, 2022).

In the context of developing economies, particularly in the apparel industry, the extent to which information-sharing routines are institutionalized is often shaped by infrastructural conditions and governance frameworks. Weak digital infrastructure, limited managerial expertise, and fragmented policy environments can act as barriers to the adoption of structured information-sharing mechanisms (Bari, 2019; Tran et al., 2024). At the same time, advances in predictive technologies such as machine learning are providing new ways to anticipate disruptions and strengthen collaborative exchanges. For example, Jebbor et al. (2024) demonstrated how predictive analytics can be used to forecast supply chain disruptions in the textile sector, underscoring the growing role of technology in shaping modern IS practices.

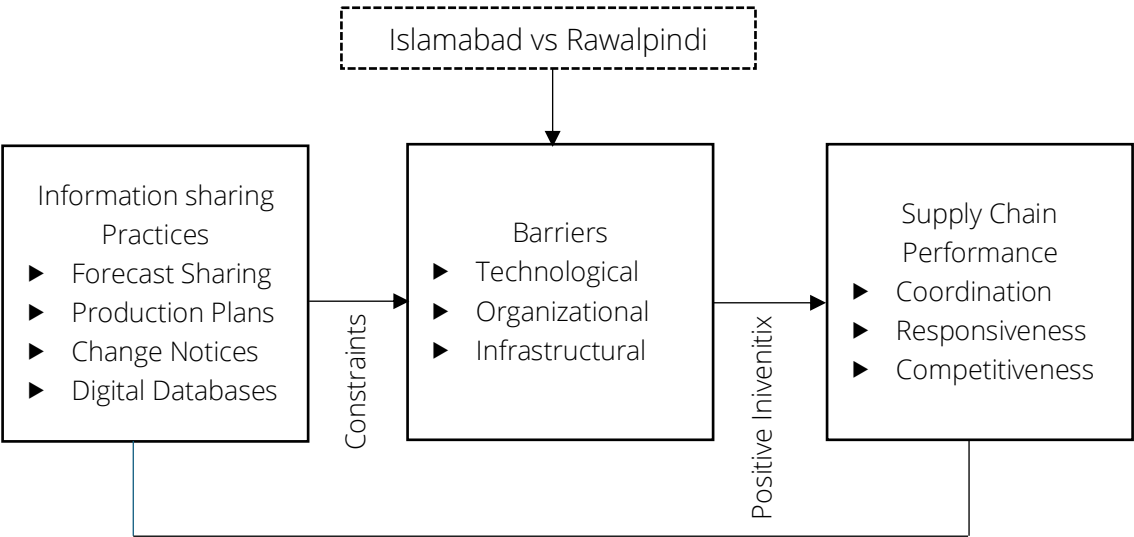
While previous studies have often highlighted the theoretical importance of information sharing for improving supply chain performance, there is still little comparative evidence that focuses on specific contexts. In particular, few studies examine how practices differ within a single country across industrial clusters. This research addresses that gap by investigating garment manufacturing firms in Islamabad and Rawalpindi. By documenting and comparing the approaches adopted in these two locations, the study contributes to a clearer understanding of how local conditions shape the extent and effectiveness of information exchange in Pakistan's garment sector.

Conceptual Framework

The study is built on a framework that connects information-sharing practices to supply chain outcomes. Four key aspects have been discussed: (1) the presence of digital databases that partners can access; (2) the exchange of production plans and demand forecasts; (3) the promptness and lucidity of communications regarding changes in product requirements; and (4) the effectiveness of chain-wide coordination mechanisms. These aspects are impacted by obstacles that can prevent seamless adoption, such as organizational silos, structural inefficiencies, and inadequate technology capability.

The design is predicated on the idea that increased adoption of information-sharing methods helps organizations become more competitive, better coordinated, and more responsive to changes in the market. However, the advantages of such activities may be diminished by the existence of obstacles. The methodology illustrates how gaps in local infrastructure, technology utilization, and organizational culture impact information sharing success and, ultimately, supply chain performance in the apparel industry by contrasting Islamabad with Rawalpindi.

Figure 1



Methodology

Research Design

A cross-sectional, descriptive-comparative survey design was used to conduct this study. This design's purpose was to record and compare the information-sharing procedures used by clothing companies in Rawalpindi and Islamabad. It was considered the most suitable choice because it allowed the researcher to observe existing patterns and highlight differences across the two clusters without altering or controlling any variables.

Population

The study focused on garment manufacturing firms operating in the cities of Islamabad and Rawalpindi as its target population. In total, 46 firms were identified, including 25 based in Islamabad and 21 in Rawalpindi. The primary respondents were managers and supply chain professionals directly involved in procurement, scheduling, production, inventory management, supplier collaboration, and information exchange, as they were best positioned to provide insights into organizational information-sharing routines.

Sampling and Sample Size

Stratified random sampling was used, with firms grouped by city to ensure balanced representation. Following the sampling guidelines of Krejcie and Morgan (1970) for finite populations, a target of 240 respondents was established—approximately 120 from each city—drawn from an accessible pool of between 400 and 600 supply chain personnel across the 46 firms. Participants were randomly selected from firm-provided staff lists to reduce bias and ensure diversity across strategic, tactical, and operational roles.

Unit of Analysis

The unit of analysis was the individual supply chain professional. Each respondent was treated as a direct witness to the information-sharing practices and constraints within their respective firms, thereby providing firsthand insights into operational realities.

Data Collection

Data was collected through a self-administered questionnaire designed on a five-point Likert scale. The instrument was aligned with the three research questions and organized into two sections. Section A gathered demographic and professional details such as role, experience, firm size, and city. Section B measured specific dimensions of information sharing, including the presence of partner-accessible digital databases, the extent of demand forecast and production plan sharing, and the timeliness of communicating requirement changes. In addition, items related to organizational barriers and technological limitations were included, with negatively worded statements reverse-coded during data preparation.

Data Analysis

The analysis combined descriptive and inferential statistics. Descriptive measures, including frequencies and percentages, were used to summarize patterns within each city. For comparative purposes, Pearson's chi-square (χ^2) tests of independence were conducted to examine associations between city and responses across the main constructs. A significance level of $\alpha = 0.05$ was applied to determine whether observed differences were statistically meaningful.

Data Analysis and Interpretation

Demographic Variables

Table 1

Role/Level of Respondent

City	N	Strategic	Tactical	Operational
Islamabad	100	20 20.0%	38 38.0%	42 42.0%
Rawalpindi	105	18 17.1%	40 38.1%	47 44.8%
Total	205	38 18.5%	78 38.0%	89 43.4%

The data indicate that operational-level managers formed the largest group of respondents in both cities, comprising 42 percent in Islamabad and 44.8 percent in Rawalpindi. Tactical managers followed with 38 percent in each cluster, while strategic-level managers represented the smallest category (20 percent in Islamabad and 17.1 percent in Rawalpindi). This distribution suggests that the sample reflects the views of professionals most directly engaged with daily supply chain operations, providing valuable insights into the practical realities of information-sharing practices.

Table 2

Years of Experience

City	N	<3 yrs	3–7 yrs	> 7 yrs
Islamabad	100	22 22.0%	48 48.0%	30 30.0%
Rawalpindi	105	28 26.7%	50 (47.6%)	27 (25.7%)
Total	205	50 24.4%	98 (47.8%)	57 (27.8%)

Mid-career professionals with three to seven years of experience made up the bulk of responders, accounting for 48 percent in Islamabad and 47.6 percent in Rawalpindi. About one-third of the sample consisted of experienced professionals with over seven years of experience, while the smallest percentage of respondents were early-career respondents with less than three years (22 percent in Islamabad and 26.7 percent in Rawalpindi). Although the sample includes a variety of viewpoints, these findings demonstrate that it is especially typical of mid-level professionals actively engaged in supply chain management.

Table 3*Firm Size*

City	N	Small	Medium	Large
Islamabad	100	28 28.0%	46 46.0%	26 26.0%
Rawalpindi	105	36 34.3%	50 47.6%	19 18.1%
Total	205	64 31.2%	96 46.8%	45 22.0%

The majority of respondents in both clusters were from medium-sized businesses, which comprised nearly half of the sample (46% in Islamabad and 47.6% in Rawalpindi). Comparing the other categories, Rawalpindi reported a higher percentage of small businesses (34.3%) than Islamabad (28%). In contrast, Islamabad has a higher percentage of large enterprises (26%) compared to Rawalpindi (18.1%). These results imply that while small and medium-sized businesses predominate in Rawalpindi's clothing industry, Islamabad's has a slightly greater enterprise presence.

Table 4*City Distribution*

City	N	% of total
Islamabad	100	48.8%
Rawalpindi	105	51.2%
Total	205	100%

With 48.8% of respondents coming from Islamabad and 51.2 percent from Rawalpindi, the sample was evenly distributed across the two clusters. Comparisons between the two groups are guaranteed to be statistically significant and representative of the population being studied because to this balanced representation.

Table 5*Maintenance of Digital Databases Accessible to Supply Chain Partners*

City	N	(Agree)	(Disagree)	Neutral	$\chi^2(1)$	p-value
Islamabad	100	70 70.0%	30 30.0%	0 0.0%	10.98	0.0009
Rawalpindi	105	50 47.6%	55 52.4%	0 0.0%		
Total	205	120 58.5%	85 41.5%	0 0.0%		

The findings show clear differences in the adoption of partner-accessible digital databases. In Islamabad, 70 percent of respondents confirmed the presence of such systems, compared to only 47.6 percent in Rawalpindi. Conversely, a majority of Rawalpindi firms (52.4 percent) reported not maintaining such databases. The chi-square test confirmed that this difference is statistically significant. These results suggest that garment firms in Islamabad have embraced digital solutions more extensively, supporting greater coordination and transparency, whereas Rawalpindi firms remain relatively behind in technological adoption.

Table 6

Sharing of Demand Forecasts and Production Plans with Suppliers

City	N	(Agree)	(Disagree)	Neutral	$\chi^2(1)$	p-value
Islamabad	100	75 75.0%	25 25.0%	0 0.0%	10.98	0.0009
Rawalpindi	105	60 57.1%	45 42.9%	0 0.0%		
Total	205	135 65.9%	70 34.1%	0 0.0%		

A strong majority of firms in Islamabad (75 percent) reported sharing demand forecasts and production schedules with suppliers, while the figure was considerably lower in Rawalpindi (57.1 percent). Nearly 43 percent of Rawalpindi respondents stated that they do not engage in such practices. The chi-square test confirmed a statistically significant difference. These findings indicate that Islamabad firms are more proactive in collaborative planning, enabling better supply chain alignment, while Rawalpindi firms remain comparatively cautious, limiting opportunities for coordination and responsiveness.

Table 7

Prompt Communication of Product Requirement Changes

City	N	(Agree)	(Disagree)	Neutral	$\chi^2(1)$	p-value
Islamabad	100	70 70.0%	30 30.0%	0 0.0%	10.61	0.0048
Rawalpindi	105	55 52.4%	50 47.6%	0 0.0%		
Total	205	125 61.0%	80 39.0%	0 0.0%		

Results show that 70 percent of respondents in Islamabad agreed their firms communicate requirement changes quickly to partners, compared to 52.4 percent in Rawalpindi. Almost half of Rawalpindi respondents disagreed with this statement, signaling slower communication practices. The chi-square test confirmed statistical significance. These results suggest that Islamabad firms are more agile and responsive in updating partners, which enhances supply chain collaboration, while Rawalpindi firms face challenges that may hinder timely coordination.

Table 8*Impact of Information-Sharing Barriers on New Opportunities*

City	N	(Agree)	(Disagree)	Neutral	$\chi^2(1)$	p-value
Islamabad	100	65 65.0%	35 35.0%	0 0.0%	8.67	0.0032
Rawalpindi	105	45 42.9%	60 57.1%	0 0.0%		
Total	205	110 53.7%	95 46.3%	0 0.0%		

The findings reveal that 65 percent of Islamabad respondents agreed that barriers to information sharing limit their firms' ability to pursue new opportunities, compared with only 42.9 percent in Rawalpindi. Interestingly, a majority of Rawalpindi respondents (57.1 percent) disagreed, suggesting that they perceive such barriers differently. The chi-square test confirmed a statistically significant difference in perceptions between the two clusters. Overall, the results imply that while both cities acknowledge challenges, Rawalpindi firms perceive fewer barriers to exploring new opportunities, although this may reflect an already limited reliance on structured information-sharing systems.

Table 9*Impact of Technological Limitations on Data Sharing with Partners*

City	N	(Agree)	(Disagree)	Neutral	$\chi^2(1)$	p-value
Islamabad	100	68 68.0%	32 32.0%	0 0.0%	7.72	0.0055
Rawalpindi	105	50 47.6%	55 52.4%	0 0.0%		
Total	205	118 57.6%	87 42.4%	0 0.0%		

Technological barriers to data sharing emerged as a significant concern in both clusters, though with notable differences. In Islamabad, 68 percent of respondents reported that technological limitations hinder effective information exchange, while the proportion was lower in Rawalpindi at 47.6 percent. More than half of Rawalpindi respondents disagreed, suggesting comparatively weaker recognition of technology as a barrier. The chi-square test indicated a statistically significant difference, showing that Islamabad firms are more aware of technology's role in shaping information-sharing effectiveness. This highlights the need for strategic technological investments and capacity building to improve supply chain integration across both clusters.

Findings and Conclusions

Digital Databases Accessibility

The analysis shows that a majority of respondents in Islamabad (70%) reported that their firms maintain digital databases accessible to supply chain partners. In Rawalpindi, however, fewer than half (47.6%) agreed with this statement, while more than half (52.4%) disagreed. In comparison, only 30% of Islamabad respondents expressed disagreement. These results indicate that firms in Islamabad are ahead in adopting partner-accessible digital systems, whereas Rawalpindi firms display limited commitment to digital integration.

Sharing of Demand Forecasts and Production Plans

The results highlight that 75% of managers in Islamabad agreed their firms share demand forecasts and production schedules with suppliers, compared to 57.1% in Rawalpindi. In contrast, 42.9% of Rawalpindi respondents disagreed with this practice, whereas only 25% of Islamabad managers did so. These findings suggest that Islamabad firms more actively engage in forecast sharing, while Rawalpindi firms show a lower level of proactive information exchange.

Prompt Communication of Product Requirement Changes

Evidence indicates that 70% of managers in Islamabad agreed that product requirement changes are quickly communicated to partners. This figure was notably lower in Rawalpindi at 52.4%. In contrast, nearly half of the respondents in Rawalpindi (47.6%) disagreed with the statement, whereas the proportion was lower in Islamabad (30%). These findings indicate that firms in Islamabad are generally more effective at keeping their partners informed about requirement changes, while firms in Rawalpindi appear slower in communicating such updates.

Barriers to Information Sharing and New Opportunities

The results show that 65% of managers in Islamabad believed that barriers to information sharing limit their firms' ability to pursue new opportunities, compared with 42.9% in Rawalpindi. In contrast, a larger share of Rawalpindi respondents (57.1%) disagreed with the statement, while the figure was lower in Islamabad at 35%. This suggests that managers in Islamabad are more aware of the risks posed by information-sharing barriers, whereas those in Rawalpindi appear less likely to recognize their potential impact.

Technological Limitations and Data Sharing

The analysis shows that 68% of managers in Islamabad agreed that technological constraints make it difficult to share data effectively with partners, whereas only 47.6% of managers in Rawalpindi expressed the same concern. At the same time, more than half of Rawalpindi respondents (52.4%) disagreed, compared to 32% in Islamabad. These findings imply that Islamabad managers are more aware of the technological barriers affecting collaboration, while Rawalpindi firms appear less attuned to the role of technology in constraining information exchange.

Overall Conclusion

The comparative analysis demonstrates clear differences in information-sharing practices between garment manufacturing firms in Islamabad and Rawalpindi. Across all examined dimensions — digital database use, forecast and production plan sharing, responsiveness in communication, and perceptions of barriers and technological limitations — Islamabad firms consistently displayed stronger engagement and more proactive approaches.

Through improved coordination, increased responsiveness, and more cooperative supplier connections, these strategies give Islamabad businesses a competitive edge. Businesses in Rawalpindi, on the other hand, adopted information-sharing procedures more slowly and cautiously. This reflects strategic, technological, and organizational flaws that impair information flow. Among these, internal and technological constraints

seem to be particularly important since they restrict innovation and lower the possibility of more robust supply chain integration.

All things considered, the results confirm that effective information sharing is crucial to the efficiency of the supply chain. Establishing stronger working relationships, improving communication channels, and investing in digital technology will help businesses remain competitive in quickly changing industries. This necessitates particular steps by Rawalpindi companies, including as strengthening relations with their supply chain partners, modernizing information systems, and boosting digital proficiency. By addressing these gaps, they can preserve long-term competitiveness, grow their market reach, and boost productivity.

Recommendations

Based on the findings and conclusions of the study, a number of proactive measures are suggested to strengthen information-sharing techniques and boost supply chain performance among clothing manufacturers in Rawalpindi and Islamabad. These suggestions address organizational, technological, and policy-related concerns and offer helpful guidance for managers, lawmakers, and industry stakeholders.

Strengthen Digital Infrastructure and Technological Capacity

Digital technology adoption is particularly sluggish among Rawalpindi businesses. To close this gap, firms should invest in real-time data access capabilities like as ERP applications, cloud computing, and supplier portals. These systems enhance supply chain visibility and speed up decision-making. Industry organizations and governmental bodies may speed up adoption by providing subsidies, tax incentives, or targeted grants for digital transformation.

Promote a Culture of Collaboration and Information Exchange

The inadequate sharing of production plans and forecasts indicates a lack of transparency and confidence. Businesses should encourage greater transparency through formal communication protocols, frequent supplier meetings, and performance objectives that reward collaboration. Cooperative planning exercises and written agreements with key partners can reduce interruptions and increase alignment.

Improve Communication Mechanisms and Responsiveness

More efficient methods are required in light of the data showing slower transmission in Rawalpindi. Automated alerts, shared dashboards, and digital notification systems can all help ensure that partners are aware of any changes in requirements. Employees' flexibility and responsiveness will also be enhanced by training them in communication and change management.

Address Organizational Barriers and Build Trust

Organizational silos usually obstruct the flow of information. To circumvent this, companies should promote interdepartmental cooperation, establish clear policies for information sharing, and use confidentiality agreements to safeguard confidential data. Larger enterprises may collaborate to solve common issues and exchange best practices in forums set up by trade associations.

Develop Capacity-Building and Training Programs

Technological constraints are often linked to a lack of competence. Training programs in analytics, digital technology, and collaborative planning should be prioritized. Working together with academic institutions and professional groups can help create a workforce that is equipped to support modern supply chain practices.

Foster Policy Support and Industry Collaboration

Government rules have a big impact on how things are carried out. Policies that encourage digitization, modernize SMEs, and promote collaborative supply chain networks ought to be created. Public-private partnerships can also help create common standards for information sharing and shared digital platforms to guarantee interoperability among companies.

Encourage Continuous Monitoring and Evaluation

Last but not least, companies should establish protocols for regularly evaluating their information sharing. Audits, benchmarking, and feedback loops can be utilized to track developments and identify trouble spots. Monitoring market trends can help businesses remain adaptable and competitive in a rapidly changing environment.

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