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Make Do or Renew? How Market Turbulence Reshapes the Sources of Competitive Advantage in Pakistan's Textile Industry

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Abstract

The exporters of textiles from Pakistan have to compete on value as they have to deal with record energy costs, new tariff barriers, and fluctuating demand from buyers. This study is about what resource-deployment practices (innovation, knowledge management and entrepreneurial bricolage) generate a competitive advantage for these firms. It also poses the question of how two factors affect those effects: absorptive capacity (internal) and market turbulence (external). The model is an integration of the resource-based view, dynamic capabilities perspective and contingency theory. A total of 113 bed-linen and upholstery manufacturers' owners and senior managers responded to the survey. Systematic random sampling was used to select the firms from a population of 362 members of the association. Partial least squares structural equation modelling

(PLS-SEM) and 5000 bootstrap subsamples were used to test the hypotheses. Entrepreneurial bricolage had the most significant impact on competitive advantage (β = 0.338, p = .001), with innovation being the second most significant impact (β = 0.172, p = .038). There was no significant direct effect of the knowledge management. Absorptive capacity did not moderate any of the three relationships. Market turbulence took a dual impact on the market. It increased the innovation–advantage relationship (β = 0.212, p = .047) and significantly reduced the bricolage–advantage relationship (β = −0.434, p = .006). The model accounted for 65.1% of the variance in competitive advantage. The contribution of the interaction terms was 6.7 percentage points (f^2 = 0.19). The study illustrates how bricolage and innovation are not synonymous strategies for gaining an edge. Bricolage is better suited to stable markets and innovation is better suited to markets that churn. This boundary condition will help clarify resource arguments such as "making do" with resources on hand. It also provides a guideline to textile exporters as to when to be resourceful and when to invest in renewal.

Keywords: Entrepreneurial bricolage, innovation, knowledge management, absorptive capacity, market turbulence, competitive advantage, textile industry, Pakistan, PLS-SEM

1. Introduction

Pakistan's top export earner continues to be textiles and the reliance on them continues to increase. In fiscal year 2024–25, the textile exports totaled US$17.887 billion, marking a 7.39% increase from the previous year, according to Associated Press of Pakistan [APP] (2025). In 2025–26 they edged up only 0.26% to US$17.932 billion (APP, 2026). During the corresponding period total merchandise exports declined by 5.93% to US$30.139 billion (Business Recorder, 2026). Thus, nearly 60% of the national exports were textiles. The overall export performance now relies on a sector which is just growing.

The sector is under structural pressure – not cyclical. In February 2024, the All Pakistan Textile Mills Association raised concerns that over half of the textile and apparel industry could close down due to the electricity prices (The Express Tribune, 2024). By January 2025, 187 mills had ceased activities, mostly due to the electricity bill (Profit, 2025). Access to the biggest export

destination was also made less secure. In August 2025, the United States imposed a 19% reciprocal tariff on imports from Pakistan, and Pakistani exporters estimated their production costs to be 10-20% higher than that of their regional competitors (Dawn, 2025). However, by October 2025, both Bangladesh and Vietnam were imposed with a 20% tariff and India with a 50% tariff. In 2024, Pakistan exported 76.8% of its goods to the United States, with the majority being textiles (Pakistan Business Council, 2025). In the industry, companies continue to experience challenges with legacy processes, innovation expenses, and restricted lean operations (Zahra et al., 2025).

In such an environment, a company's cost-based advantage becomes tenuous and firm-level capabilities become more significant than ever. There are three managerial practices that are often said to help a team create an advantage under these circumstances. The innovation rejuvenates products, processes, marketing and management (Mayorga et al., 2026). Knowledge Management involves the capture, sharing and application of what the firm knows (Cristache et al., 2025). Entrepreneurial bricolage is the recombining of resources that exist in order to address a new problem and/or capture a new opportunity (Mateus & Sarkar, 2024). Both have a compelling theoretical argument for a competitive advantage. But the recent evidence leaves three questions unanswered.

The evidence of bricolage – advantage is primarily available from small businesses and service industries like tourism and hospitality (Abukari et al., 2024; Kustiningsih et al., 2024). Less is known about existing, export-oriented, manufacturers which compete in global value chains. A recent review by Aaouid et al. (2024) characterizes the bricolage field as fragmented and advocates for further research on its outcomes and boundary conditions, while another recent one by Mateus & Sarkar (2024) finds that the research on bricolage is less developed than that on other types of innovation.

Secondly, the extent of these practices is disputed. Others have suggested that turbulence boosts the pay-offs of bricolage (Asad & Asif, 2026). Some view turbulence as primarily freeing up the possibilities for bricolage and not necessarily increasing the effects of bricolage (Lee & Park, 2024). The findings regarding the moderating effect of market turbulence on capability–advantage

relationship are also inconclusive (Al Dhaheri, Ahmad, Abu Bakar, & Papastathopoulos, 2024; Alghamdi & Agag, 2024; Mustafa et al., 2026).

Thirdly, there is uncertainty about the role of knowledge. The impact of Knowledge Management on performance is often indirect, via innovation (Cristache et al., 2025). Absorptive capacity typically is conceptualized as a mediation process instead of a factor that enhances other practices (Sang et al., 2024; Tahir & Rahman, 2024).

This study aims to answer these questions in the case of the home-textile manufacturing industry of Pakistan. It combines the resource based view, the dynamic capabilities perspective and contingency theory. It is working on two goals:

1. To estimate the direct effects of innovation, knowledge management and entrepreneurial bricolage on competitive advantage.
2. To test whether absorptive capacity (an internal contingency) and market turbulence (an external contingency) moderate these effects

The study makes three contributions. It offers manufacturing sector evidence that bricolage is more of an advantage than innovation or knowledge management in a resource-constrained export industry. It sees market turbulence as a boundary condition which exerts opposing forces on these two practices. Lastly, it demonstrates how absorptive capacity can be both a resource and not a multiplier of other practices. This validates a commonly held assumption in the knowledge based literature.

The article is structured as follows. The theoretical background is provided in Section 2. In Section 3, literature is synthesized and hypotheses are developed. The method and results are given in Sections 4 and 5. The results are reported in Section 6 and implications, limitations and directions for future research are reported in Section 7.

2. Theoretical Foundation

The model is based upon one underlying logic: that the competitive advantage is determined by the way the resources are used and that the return on the use of the resources is determined by context. There are three complementary lenses that provide the components of this argument.

2.1 Resource-based view: advantage from deployment, not possession

The resource-based view (RBV) argues that firms are able to outperform their competitors if they have resources that are valuable, rare, hard to imitate and hard to substitute. Recent applications emphasize that it is not so much about having such resources as about how to link and utilize them in firm-specific ways (Abukari et al., 2024; Wang et al., 2024). It is relevant for textile producers in a developing economy. Much of their tangible assets like spinning and weaving machinery and cotton and labour are freely available to others and cannot, therefore, alone afford any advantage.

This logic is best suited to bricolage. The firm can also reconfigure common, everyday materials into something new, something that rivals can't easily replicate, as it has a history to draw from and is improvised (Mateus & Sarkar, 2024). Bricolage also helps explain how the resource-poor firms are able to gain the advantages usually attributed to the resource-rich firms in the classic RBV framework (Abukari et al., 2024).

2.2 Dynamic capabilities: renewing the resource base

A major criticism of the RBV is that it does not provide a dynamic explanation – it shows how resources can give rise to advantage, but not how they can be renewed as conditions evolve. It is in this context that the dynamic capabilities perspective is filling the gap. It is the higher order function of detecting and seizing opportunities, threats, and changing the resource base through investment to remain in tune with the environment (Schlosser, 2026).

In this sense, two of the constructs in the study are dynamic capabilities. Innovation capability is frequently viewed as a higher-order capability, which is the foundation for continued competitive

success for manufacturers in emerging economies (Mayorga et al., 2026). Absorptive capacity is the firm's capacity to absorb, understand and apply external knowledge. Especially, it is the knowledge aspect of sensing and seizing (Akgün et al., 2025; Sang et al., 2024).

2.3 Contingency theory: fit between practice and context

The contingency theory does not assume that a practice is effective across the board. Fit between firm actions and conditions determines performance. Previous studies on entrepreneurship have combined the RBV and contingency theory for a better understanding of the specific resource behaviour that differ in different contexts (Asad & Asif, 2026; Wang et al., 2024).

This study has one outside and one inside contingency. Market turbulence is the velocity of customers changing and the velocity of their changing preference. It is the external factor most applicable to export manufacturers whose clients are constantly changing their orders, compliance requirements and order quantities. Absorptive capacity is the internal condition that determines the likelihood of the firm to turn outside knowledge into action.

2.4 An integrated view

The total of the three lenses provides the model with a clear structure. The RBV provides an answer as to why the three practices should lead to advantage (the direct paths). Dynamic capabilities perspective helps to understand why some practices renew advantage better than others. Contingency theory is used to explain the fact that their payoff should vary with absorptive capacity and market turbulence (the moderating paths). Table 1 matches the lenses to the constructs and hypotheses that they support.

Table 1. Three Lenses, One Logic: How the Theories Map onto the Model

Theoretical lens	Core claim	Constructs it explains	Hypotheses
Resource-based view	Advantage comes from firm-specific deployment of resources	Innovation, knowledge management, entrepreneurial bricolage → competitive advantage	H1–H3
Dynamic capabilities	Advantage is sustained by sensing, seizing and transforming the resource base	Innovation and absorptive capacity as renewal capabilities	H1, H4–H6
Contingency theory	Payoff depends on the fit between practice and context	Absorptive capacity (internal) and market turbulence (external) as moderators	H4–H9

3. Literature Synthesis and Hypotheses

3.1 Competitive advantage

Competitive advantage is the ability of a firm to provide more value to customers than other firms, and the capability to do so over time. It translates to better price, better quality, more reliable delivery, more innovation in the products and time to the market. These are the dimensions that determine if international buyers place repeat orders or not for textile exporters. Most recent literature considers advantage as a result of the combination and renewal of capabilities, and not a

result of a single resource (Alghamdi & Agag, 2024; Mayorga et al., 2026). This is the framing which serves as a guide for the following synthesis.

3.2 Innovation and competitive advantage

The tendency of a firm to use new products, processes, marketing strategies and management techniques is its drive for innovation. The capability of innovation has been defined as a meta-capability and has recently emerged as a focus of study in a systematic review of emerging-economy industrial firms. It facilitates the assimilation of technology transfers and the transformation into an advantage (Mayorga et al., 2026; Rehman et al., 2026). The evidence from firm level studies in Pakistan is similar. In the medium enterprises of Punjab, innovation and absorptive capacity are found to be combined to enhance performance and competitiveness (Tahir & Rahman, 2024).

For textile companies the logic is straight forward. Product innovation drives companies from commodity yarns and grey cloth to value added home textiles. Energy-cost penalty is offset by process innovation, which reduces unit costs and defect rates. By applying marketing and managerial innovation, companies can satisfy the compliance, traceability and sustainability needs of buyers. Having the capability to innovate is important and scarce since the industry is known for the use of outdated practices (Zahra et al., 2025). Hence:

H1. Innovation has a significant positive relationship with competitive advantage.

3.3 Knowledge management and competitive advantage

The term Knowledge Management refers to the process of obtaining, storing, sharing and utilizing organisational knowledge. The knowledge-based extension of the RBV suggests that the most difficult thing to imitate is knowledge, particularly tacit knowledge. However, recent research has shown that, often, knowledge management can't generate advantage all by itself. Cristache et al. (2025) discovered innovation gains from knowledge creation, knowledge integration and sharing but not from knowledge implementation. The process of knowledge management and organisational performance was fully mediated by innovation.

This pattern suggests that knowledge management is a required input that needs to be processed to become products, processes and decisions. Yet companies that systematically manage knowledge should become aware of buyers' needs more quickly and avoid making unnecessary and expensive mistakes. This should give them a competitive edge over those who don't. We thus propose, in line with the RBV:

H2. Knowledge management has a significant positive relationship with competitive advantage.

3.4 Entrepreneurial bricolage and competitive advantage

Entrepreneurial bricolage is the idea of "making do" using combinations of available resources for new problems and opportunities. Companies that do it will not be stifled by resource scarcity, using what they've got and rearranging it in ways it wasn't intended to be used. According to a systematic review of 126 studies, the major themes of the field are resource constraints and innovation (Mateus & Sarkar, 2024). Based on a bibliometric analysis of 209 publications on management, bricolage is a significant approach for companies to overcome limitations (Gerçek, 2024).

Since 2024, there has been an strengthening of the empirical relationship with advantage. Bricolage led to competitive advantage and sustainability performance amongst 200 Ghanaian SME manufacturers (Abukari et al., 2024). The bricolage in tourism SMEs contributed to the improvement of performance through the development of innovative products, processes, and marketing (Kustiningsih et al., 2024). Improved performance in 640 Croatian micro and small enterprises, both directly and indirectly, by entrepreneurial resilience (Grčić Fabić et al., 2026). In the culinary SMEs sector in Indonesia, it not only directly enhanced their sustainable performance but also via innovation capability (Suardhika & Kepramareni, 2026).

Pakistani textile manufacturers are a natural setting for bricolage. It is costly to obtain credit; power supply is irregular; many machines are aged. Companies that recycle, adjust the talents of their employees to different product lines, and reuse by-products can save money and react swiftly to customers' orders. It's not easy to replicate this kind of situation on rivals.

Hence:

H3. Entrepreneurial bricolage has a significant positive relationship with competitive advantage.

3.5 The moderating role of absorptive capacity

Absorptive capacity is the capacity to recognize valuable external knowledge, absorb it and use it commercially. A dynamic capabilities perspective, it is about how much value a firm can get from the other activities. Based on 1861 Chinese SMEs, Sang, D. et al. (2024) found that absorptive capacity facilitates the transfer of customer and supplier knowledge into product and process innovation. Technological learning based on absorptive capacity brings the impact of turbulence with it in the innovation process in the manufacturing sector in Turkey (Akgün et al., 2025). Absorptive capacity also plays a role in the translation of entrepreneurial behaviours into performance in hostile environments (Urban & Kanguwe, 2024).

Similar reasoning indicates that absorptive capacity should be enhanced by each focal practice. Innovation is needed by high absorptive firms that is more aligned with the buyer trends (H4). They should implement knowledge more quickly (H5). They should also put in outside concepts for their combination of available materials (H6). Hence:

H4. Absorptive capacity moderates the relationship between innovation and competitive advantage.

H5. Absorptive capacity moderates the relationship between knowledge management and competitive advantage.

H6. Absorptive capacity moderates the relationship between entrepreneurial bricolage and competitive advantage.

3.6 The moderating role of market turbulence

Market turbulence is the rate of change of preferences and customer composition. According to contingency theory, practices are of value when they match the rate of change. Innovation: the

anticipated trend is positive. It is new products and processes that bring fit when buyer needs change. The results of a longitudinal study indicated that market turbulence strengthened the impact of marketing agility on competitive advantage (Alghamdi & Agag, 2024). Market turbulence also dampens the impact of technological change on product and process innovation in manufacturing (Akgün et al., 2025). Turbulence also drives SMEs to develop the ability to innovate via dynamic capabilities (Al Dhaheri, Ahmad, & Papastathopoulos, 2024).

The theory in the context of knowledge management and bricolage is in two directions. On one side, turbulence puts a premium on knowledge and fast improvisation. Based on evidence from entrepreneurial firms in Pakistan, evidence indicates a positive relationship between technological turbulence and the bricolage–performance relationship (Asad & Asif, 2026). The turbulence also compels companies to adopt bricolage and the ambidextrous action it allows (Lee & Park, 2024). At the other end, knowledge that is stored can become irrelevant due to fast change. It can also make "good enough" solutions with bricolage a "bad bet" for buyers who require new solutions. Market turbulence is found to have no moderating effect on the study of tourism SMEs, at least in the studies conducted so far.

But, because of these arguments, all three moderation hypotheses are presented without a direction.

But, reasoning as in the above, we should expect a positive (strengthening) effect for innovation:

H7. Market turbulence moderates the relationship between innovation and competitive advantage.

H8. Market turbulence moderates the relationship between knowledge management and competitive advantage.

H9. Market turbulence moderates the relationship between entrepreneurial bricolage and competitive advantage.

3.7 Conceptual framework

A summary of the model is given in Figure 1. Three practices are directly related to competitive advantage (H1-H3). Each of those paths is mediated by absorptive capacity (H4–H6) and market turbulence (H7–H9).

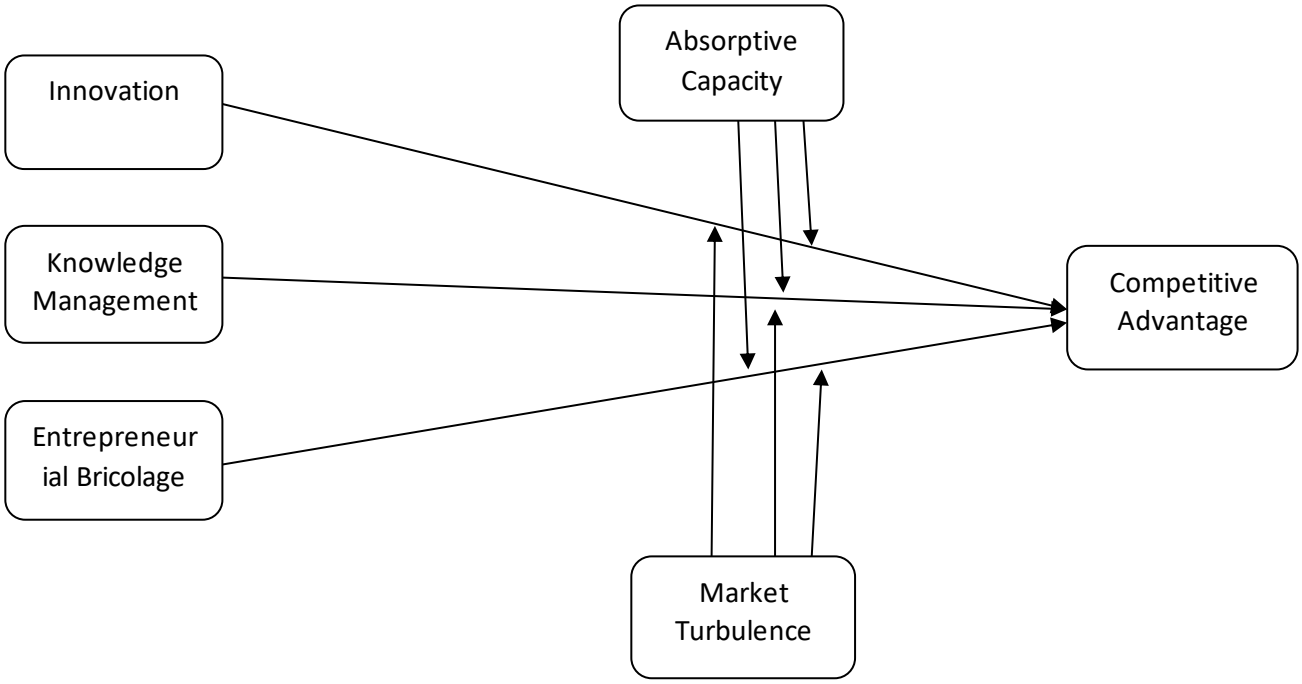


Figure 1

4. Methodology

4.1 Research design, population and sample

The research was a quantitative, correlational, cross-sectional study to test theory deductively. The unit of analysis was the firm. The population was the 362 member companies of All Pakistan Bed sheets and upholstery manufacturers association. The home-textile business is export driven and shares the same energy, financing and buyer pressures as the home-textile industry.

Based on the population, a required sample of 186 firms was determined using Krejcie and Morgan's (1970) table. The selection of firms was done by Systematic Random sampling (SRS) from the firms' list of the association, using a random start in SPSS. Owners or senior managers were key informants due to their overall perspective on their firm's strategy, practices and market position.

Data were obtained via on-site visits, e-mail and courier. One hundred forty questionnaires (75.3% response rate) were returned out of 186 questionnaires distributed. Of the 113 usable questionnaires returned, 60.8% were returned.

4.2 Measures

All constructs were measured using multi-item scales adapted from existing instruments and all were rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). There were 56 items on the constructs and 5 items on demographic data. A cover note was used to describe the purpose of the study, and confidentiality was assured. Table 2 provides the details about each scale, the source of the scale and the items retained after purification. Items with outer loadings of less than 0.50 were discarded.

Table 2. Measuring What Matters: Constructs, Sources and Retained Items

Construct (role)	Dimensions	Items (retained / original)	Adapted from
Innovation (IV)	Product, process, marketing, managerial	12 / 12	Wang and Ahmed (2004); Weerawardena et al. (2006)
Knowledge management (IV)	Unidimensional	6 / 8	Rašula et al. (2012)

Construct (role)	Dimensions	Items (retained / original)	Adapted from
Entrepreneurial bricolage (IV)	Unidimensional	7 / 8	Senyard et al. (2009)
Absorptive capacity (moderator)	Acquisition, assimilation, transformation, exploitation	10 / 14	Flatten et al. (2011)
Market turbulence (moderator)	Unidimensional	3 / 3	Jaworski and Kohli (1993)
Competitive advantage (DV)	Price, quality, delivery, innovation, time to market	8 / 16	Zhang (2001)

4.3 Analytical approach

Partial least squares structural equation modelling (PLS-SEM) was used to test the hypotheses using the software Smart PLS (version 3). PLS-SEM was used because of three characteristics of the study. First, the model is complicated, as six latent constructs and six interaction terms are estimated simultaneously. Second, the sample size is relatively small (n = 113) and PLS-SEM is able to estimate complex models efficiently at these sizes. Third, the purpose is causal-predictive, which involves explaining variations in competitive advantage and testing a theory (Hair et al., 2024; Legate et al., 2024).

The analysis was carried out following the usual two-step procedure. Indicator reliability, internal consistency, convergent validity and discriminant validity of the measurement model was evaluated. The entire structural model was then tested for path coefficients, significance of those coefficients and explained variance. Bootstrapping was performed with 5000 subsamples to obtain the significance. One-tailed tests were used, as was hypothesized.

All six interaction terms (each predictor × each moderator), along with the direct paths from both moderators to competitive advantage, were loaded simultaneously to perform moderation analysis (Hair et al., 2024). A main-effects model without interaction terms was also estimated in the study. The comparison of both models explains the added value of the moderators in the explanatory power of the model.

Common method bias may be a concern as all the variables were obtained from a single key informant (Podsakoff et al., 2024). Procedural remedies were anonymity and confidentiality guarantees, which decreases social-desirability pressure. The questionnaire also made use of validated scales in which the items were clearly worded. This is taken up again in Section 7.3.

5. Results

5.1 Respondent profile

The majority of the respondent companies were large and established manufacturing companies (Table 3). 53.6% had been in operation for more than 20 years, 44.2% had more than 100 employees and 58.4% had invested more than PKR 40 million. Most (84.1%) were manufacturers, and 54.0% of companies reported that their business had expanded in the last five years.

Table 3. Demographic Profile of the 113 Respondent Firms

Characteristic	Category	Firms (n)	Share (%)
Years in operation	1–5	11	9.7
	6–10	14	12.4
	11–15	12	10.6
	16–20	14	12.4
	More than 20	62	54.9

Characteristic	Category	Firms (n)	Share (%)
Employees	1–20	25	22.1
	21–40	11	9.7
	41–70	15	13.3
	71–100	12	10.6
	More than 100	50	44.2
Main activity	Manufacturing	95	84.1
	Trading	13	11.5
	Services	5	4.4
Status over past five years	Growing	61	54.0
	Stable	40	35.4
	Declining	12	10.6
Invested capital (PKR million)	2–10	22	19.5
	11–20	7	6.2
	21–30	9	8.0
	31–40	9	8.0
	More than 40	66	58.4

5.2 Measurement model

Table 4 presents the measurement model indicating that all six constructs have acceptable reliability and convergent validity. The composite reliabilities were between 0.800 and 0.923, which is greater than 0.70. Five constructs had a Cronbach's alpha that was greater than 0.80.

Market turbulence (three items) had an alpha of 0.625 and a composite reliability of 0.800, which is acceptable. The average variance extracted (AVE) value of each construct was above 0.50.

Some loadings that were retained ranged from 0.55 to 0.70. These items were retained as their deletion did not increase composite reliability or AVE beyond thresholds already attained. They also maintain the content coverage of multidimensional constructs, as suggested in recent guidance for PLS-SEM (Hair et al., 2024).

The Fornell–Larcker criterion and cross loadings (Table 5) were used to check for discriminant validity. For 14 pairs of 15 construct pairs, the square root of AVE for each construct was greater than their correlation scores with other constructs. The only exception is knowledge management and absorptive capacity. Their correlation (0.744) is somewhat higher than their square roots of AVEs (0.731 and 0.728). One knowledge management item (KM1) loaded slightly higher on absorptive capacity (0.753) as compared to its own item (0.732).

Table 4. Drawing the Boundaries: Fornell–Larcker Discriminant Validity

Construct	AC	CA	EB	IN	KM	MT
Absorptive capacity (AC)	**0.728**					
Competitive advantage (CA)	0.701	**0.732**				
Entrepreneurial bricolage (EB)	0.683	0.685	**0.786**			
Innovation (IN)	0.694	0.605	0.607	**0.709**		
Knowledge management (KM)	0.744	0.599	0.665	0.513	**0.731**	
Market turbulence (MT)	0.457	0.408	0.400	0.413	0.326	**0.756**

Note. Bold diagonal values are square roots of AVE; off-diagonal values are construct correlations.

This overlap can be explained in theory. Both constructs relate to how firms acquire and utilize knowledge. It is reported here openly as a factor which bears upon how the knowledge

management results should be read (see Section 6.2). All other items loaded highly on their construct.

5.3 Structural model

Four out of nine hypotheses (Table 6) are supported by the structural model. Only entrepreneurial bricolage showed a significant direct impact of the competitive advantage (β = 0.338, t = 3.197, p = .001), which confirmed H3. Innovation also had a significant positive effect (β = 0.172, t = 1.773, p = .038), supporting H1. H2 was not supported as there was no significant impact of knowledge management (β = 0.059, p = .319). The direct effects of the two moderators were also non-significant at the 5% significance level (absorptive capacity t = 1.558; market turbulence t = 1.547).

All of the absorptive capacity interactions were not significant and thus, H4-H6 were not supported. The bricolage × absorptive capacity term was positive with only marginal significance (β = 0.229, p = .097).

There were two important interactions of opposite sign resulting from the market turbulence. It confirmed the innovation–advantage relationship (β = .212, t = 1.678, p = .047), lending support to H7. It weakened the bricolage–advantage relationship (β = −0.434, t = 2.493, p = .006), supporting H9. However, it did not moderate the knowledge management relationship (β = 0.060, p = .342), and thus H8 was not supported.

Table 5. Hypothesis Testing: Which Paths Drive Competitive Advantage?

Hypothesis	Path	β	SE	T	P	Decision
H1	Innovation → CA	0.172	0.097	1.773	.038	Supported
H2	Knowledge management → CA	0.059	0.126	0.471	.319	Not supported
H3	Entrepreneurial bricolage → CA	0.338	0.106	3.197	.001	Supported

Hypothesis	Path	β	SE	T	P	Decision
H4	Innovation × AC → CA	−0.068	0.143	0.474	.318	Not supported
H5	Knowledge management × AC → CA	−0.163	0.130	1.254	.105	Not supported
H6	Entrepreneurial bricolage × AC → CA	0.229	0.176	1.298	.097	Not supported
H7	Innovation × MT → CA	0.212	0.126	1.678	.047	Supported
H8	Knowledge management × MT → CA	0.060	0.148	0.407	.342	Not supported
H9	Entrepreneurial bricolage × MT → CA	−0.434	0.174	2.493	.006	Supported (negative)

Note. CA = competitive advantage; AC = absorptive capacity; MT = market turbulence. Standardized coefficients; one-tailed p-values from 5,000 bootstrap subsamples.

5.4 Explanatory power and the form of the interactions

The full model accounts for 65.1% of the variance in competitive advantage which is considered to be a moderate-to-substantial level (Hair et al., 2024). The model with only the main-effects accounts for 58.4%. The moderators thus account for 6.7 percentage points of explained variance (a medium effect size, Table 7).

Table 6. What the Moderators Add: Explained Variance in Competitive Advantage

Model	R^2	ΔR^2	f^2 of interaction set	Interpretation
Main effects only	0.584	—	—	Moderate
Main effects + six interactions	0.651	0.067	0.19	Medium added effect

Note. $f^2 = (R^2 \text{ full} - R^2 \text{ main}) / (1 - R^2 \text{ full})$; benchmarks 0.02 small, 0.15 medium, 0.35 large.

With standardized variables, simple slopes can be approximated at low (−1 SD), average and high (+1 SD) market turbulence. They illustrate the two interactions counteracting each other (see Figure 2). Bricolage effect on advantage at low turbulence is approximately 0.77, which is well above that of innovation, which is approximately −0.04. The order is reversed at high turbulence: the impact of innovation increases to around 0.38, while the impact of bricolage decreases to around -0.10. The two lines cross a little above average turbulence

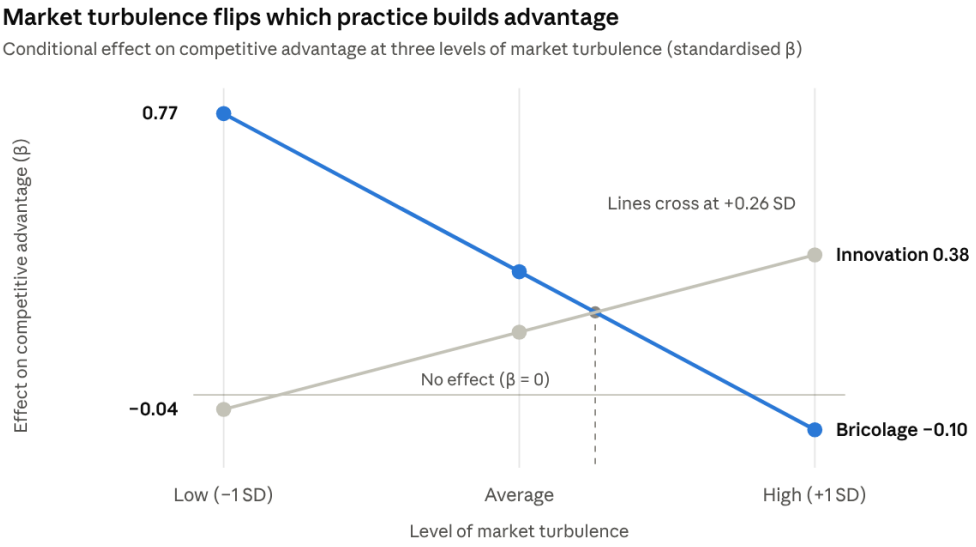


Figure 2

6. Discussion

The findings indicate that the three practices are not necessarily the same ways to advantage and the value of each lies in the market environment. Each of these findings is interpreted in the light of the recent literature.

6.1 Bricolage and innovation as different sources of advantage

All around, bricolage was the most powerful direct contributor to competitive advantage, and the effect was approximately twice that of innovation. This is consistent with the recent findings of manufacturing and service SMEs in other emerging economies (Abukari et al., 2024; Kustiningsih et al., 2024). This evidence is then scaled up to mature, larger exporters. Over half of the sampled firms were over 20 years old. Bricolage is not thus just a survival strategy of young businesses. It is a sustainable capability that RBV predicts that established manufacturers will utilise to transform common, available resources to become a firm-specific advantage.

The substantial but less pronounced role of innovation is consistent with the conceptualization of innovation capability as a metacapability in manufacturing in emerging economies (Mayorga et al., 2026). This is due to the small size as innovation cost and old fashioned thinking are the barriers faced by the textile industries of Pakistan which restrict the implementation of innovation to the market (Zahra et al., 2025). On average, innovation is constrained by the resources that it relies on.

6.2 Why knowledge management failed to be profitable per se.

There was no direct significant effect of Knowledge Management on competitive advantage. This is the result of two explanations, substantive and methodological.

Substantively, the result is aligned with some recent findings that claimed knowledge management is effective only via other capabilities. In his own study, Cristache et al. (2025) discovered that knowledge management has a full mediating effect on the relationship between knowledge

management and organisational performance and that there is no direct link between knowledge implementation and innovation. In Pakistani textile companies, knowledge might be captured and disseminated, but not necessarily in a systematic way to create new products, processes or decisions that the customers appreciate.

Knowledge Management had a high overlap with Absorptive capacity ($r = 0.744$) methodologically. The sizeable path was absorptive capacity ($\beta = 0.310$), while the path of knowledge management was almost none ($\beta = 0.064$) in the main-effects model. The resemblance of this pattern with absorptive capacity, which is likely to be its externally oriented component, led to the granting of the variance to absorptive capacity. The only thing that survived Knowledge Management was its internal storage and sharing processes, which are less directly linked to marketplace results. The lack of significance of the knowledge management path should also not be interpreted as meaning that knowledge is not important. It is not to be read as evidence of knowledge, but of knowledge with absorption and innovation.

6.3 Absorptive capacity: a resource, not a multiplier

Contrary to H4–H6, absorptive capacity, did not amplify the effect of any practice. Such a finding is in line with the placing of absorptive capacity in recent studies. Usually, it is modeled as a mediating pathway, as external knowledge is translated into innovations and performance (Sang et al., 2024; Tahir & Rahman, 2024). Rarely portray it as a relationship that impacts other relationships.

The absorption capacity in today's data had a high correlation with competitive advantage ($r = 0.701$). It also had a large path in the main-effects model. Both facts indicate that it provides advantage directly and not by increasing the impact of other practices. There is a hint of a possible exception in the marginally significant, positive bricolage × absorptive capacity term ($p = .097$). Firms that absorb external knowledge can reconfigure their endowment of resources in a more productive way, as suggested by configurationally evidence, which shows that bricolage and absorptive capacity interact with each other under hostile conditions (Urban & Kanguwe, 2024).

The study was conducted using 113 firms, and this may not have been enough to detect such an effect; further studies should be conducted with a larger sample.

6.4 Market turbulence reverses the payoffs

The key result of the study is that the pay-off of the practices evolves with the market turbulence. The positive interaction between innovation and turbulence implies the contingency theory. In the environment of rapidly changing buyer preferences and customer mix, new products and processes reestablish fit with the market and the contribution of innovation to advantage become larger. This aligns with the results of Alghamdi & Agag (2024) demonstrating the relationship between agility and agility advantage in the context of market turbulence by means of longitudinal research. Furthermore, it aligns with manufacturing evidence indicating that the environmental change is translated into product and process innovations by the market turbulence (Akgün et al., 2025).

It is the negative bricolage × turbulence interaction that is the more peculiar finding. In low turbulence, bricolage is hands down the best way to gain advantage. At high turbulence, its effect disappears. We suggest that bricolage creates an advantage by improving combination of resources, and bricolage creates “good enough” solutions in a short time and at a low cost. Useful if buyer needs are constant and firms are bidding on price, flexibility and reliability. Requirements change, such as new compliance, traceability and sustainability product requirements in export markets, and recombining the same resources can result in the firm being locked into products that no longer meet the requirements of its buyers. Indeed, there have been recent reviews of the field that specifically request such evidence on the boundary conditions of bricolage (Aaouid et al., 2024; Mateus & Sarkar, 2024).

This interpretation also reconciles apparently conflicting evidence. Technological turbulence increased the connection between bricolage and performance in entrepreneurial firms in Pakistan (Asad and Asif, 2026). With rapidly evolving technology, it's useful to be able to improvise and work with new tools. Market turbulence is different because it alters the customer's desires, not the way the products are manufactured. In the same vein, Lee and Park (2024) discovered that

turbulence pushes companies into bricolage. This is in line with our finding that one way of coping with turbulence is bricolage, and that this is not always the most lucrative way. The kind of turbulence thus is important, and market and technological turbulence should be studied separately in the future.

Last, the knowledge management path was not moderated by market turbulence. This aligns with findings that turbulence does not necessarily alter capability–competitiveness relationships (Al Dhaheri, Ahmad, Abu Bakar, & Papastathopoulos, 2024). It also comes from the weak direct impact of knowledge management: a path that carries a weak impact has little strengthening or weakening impact.

7. Implications & Limitations

7.1 Theoretical implications

The study has four theoretical contributions.

1. Defines a boundary condition for bricolage. The general resource-based accounts see the "making do" as a positive phenomenon for resource-poor companies. We find that its ability to provide an advantage is highly market turbulence dependent and can disappear when markets get turbulent. It extends the RBV explanation of bricolage in a contingency argument. It addresses the requests for research on the boundary conditions of bricolage (Aaouid et al., 2024; Mateus & Sarkar, 2024).

2. It reveals the interchangeability of bricolage and innovation between environment. Bricolage and innovation are often perceived as complementary practices, whereby bricolage serves as a precursor for innovation (Kustiningsih et al., 2024; Suardhika & Kepramareni, 2026). Our results indicate that there is an advantage-disadvantage trade-off depending on the environment. Bricolage makes the best of current resources and is successful in mature markets. In turbulent environments, innovation will change the resource base and will win. This connects the concept

of bricolage with the distinction between seizing and transforming in dynamic capabilities theory (Schlosser, 2026).

3. Qualifies the concept of absorptive capacity. Absorptive capacity was used as a direct resource and not as a moderator. This helps scientific study of it as a mechanism (Sang et al., 2024; Tahir & Rahman, 2024), and warns against the assumption of it to amplify other practices.

4. It helps to differentiate market turbulence from technological turbulence. We compared the two types of turbulence with Asad and Asif (2026) and found that the two types may act as counterbalancing forces for bricolage. It's important to recognize that there might be significant differences if environmental turbulence is treated as a monolith.

7.2 Managerial and policy implications

The findings indicate that the owners and managers of textile companies should consider a practice portfolio in accordance with the market situation.

Lean towards bricolage in stable product lines and long-term buyer relationships. Re-use machine, re-use multi-skilled workers and re-use materials and by-products. Here, the path to gain is through resourcefulness, and little extra investment is needed, which is good in this era of energy and money prices (Profit, 2025).

If specification, standards or sourcing patterns change with buyers shift to innovativeness. The changing tariff regimes and a growing emphasis on compliance and sustainability are indicators of the market's volatility (Dawn, 2025; Pakistan Business Council, 2025). In such an environment, quick fixes are deceptive and investing in new products, processes and marketing strategies is beneficial.

Put knowledge into practice. Without feeding into innovation and absorptive routines, knowledge management systems can't create advantage. Firms need to tie knowledge capture and sharing explicitly to product, process and buyer-response decisions.

Develop absorptive capacity as a value in itself. There seems to be a direct link between scanning and action on buyer, supplier and technology trends and advantage.

The results suggest to policy makers and industrial associations the need for support that varies according to market conditions. When export markets are choppy, innovation-oriented support – technology upgrading and product development and certification – is what counts. Capability programmes that share resourceful practices are still effective as low-cost activities in more stable segments.

7.3 The limitations and future research

Five limitations are noted, each of which suggests future research to which the results should be directed.

1. Cross-sectional, single-informant design. Causal inferences are constrained and common method variance cannot be excluded (Podsakoff et al., 2024). Future research should take a time-lagged or longitudinal design and involve multiple informants for each firm and objective measures of advantage like export growth or price premiums.

Sample size and statistical power. The study was carried out with 113 firms, so that small interaction effects are not easily detected. This is a possible explanation of the marginal bricolage × absorptive capacity term.

3. Construct overlap. Knowledge management and absorptive capacity were not completely separated based on Fornell–Larcker criterion. Future studies should be conducted to test for heterotrait–monotrait ratio as a measure for discriminant validity, and to test for collinearity directly (Hair et al., 2024). It should also take into account the use of KM as a precursor of absorptive capacity and innovation, and not as a parallel predictor.

Single subsector and country. Home-textile manufacturers in Pakistan are included in the sample. Comparative and multi-group studies, e.g. by size of the firm or export intensity, are needed to generalize to spinning, or apparel, or other countries' textile industries.

5. Single dimension of turbulence. Market turbulence was the only measure of turbulence and the 3-item scale exhibited modest internal consistency. Future studies should be carried out on separate measurements of market, technological, and competitive turbulence, with longer scales. It might also try to use configurational approaches to determine which practice and condition combinations lead to advantage.

8. Conclusion

There is an increase in costs and difficulty in access to the market and uncertainty of demand in the textile exports of Pakistan. One question of this study was: what practices do they need to have to gain a competitive advantage and under what circumstances? The most salient single source of advantage was entrepreneurial bricolage, innovation had a strong influence, while knowledge management had an indirect influence. The first two got the order the wrong way around, as the markets became turbulent. Bricolage is the predominant mode in stable markets and innovation is the predominant mode in turbulent markets. The message for managers is to adjust the practice to the market; do it when the market is predictable, renew when it is not.

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