



Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation

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ABSTRACT

This research empirically investigates the relationship between organizational culture, knowledge sharing, organizational innovation, and competitive advantage. Data were collected from 294 industrial managers, and PLS-SEM was used to validate data and examine the hypothesized relationships. Results revealed that organizational culture, knowledge sharing, and organizational innovation positively affect competitive advantage. More specifically, organizational culture fosters knowledge-sharing and innovation activities among the workforce and links them with high-level business processes that could be conducive to acquiring advanced manufacturing capabilities. The present study highlighted that organizational culture is indispensable for business operational success, and knowledge-sharing and organizational innovation appear to be key drivers for gaining competitive advantage.

1. Introduction

In the digital economy era, business firms face internal and external challenges to sustain their continued existence in the global marketplace [1,2], particularly the textile industry. In external challenges, companies encounter increasing growth, technological transforms, and national and worldwide competition risks. Internally, they come across more pressure to produce new/improved products and services. Therefore, firms must focus on every aspect to improve their business efficiency, such as; speed, quality, price, innovativeness, and customer responsiveness, to achieve competitive advantage (CA) and stay ahead of their competitors [3]. CA is a condition that enables firms to operate productively or more efficiently than their competitors. However, the marketplace is continuously changing in which these advantages are obtained for the short-term due to shortening product life cycles, technological advancement, and globalization. Especially in the global marketplace where manufacturing and services are increasingly intertwined, strategic competency underlying the preeminence ought to differentiate the business from its competitors; otherwise, no meaningful CA exists. It has become a crucial outcome variable in the current study that raises the question, “what are the influencing factors to expand CA in the competitive business setting”?

Business competitiveness cannot be considered without

organizational culture (OC) since almost all business developments have come through high-performance culture. Hogan and Coote emphasized the importance of OC, as it significantly influences employee attitudes and largely contributes to organizational performance [4]. Schein defines *organizational culture* as “employees’ shared values, beliefs or perceptions of the organization and its environment” [5]. In earlier studies, four cultural typologies are based on “creative, quality, supportive and productive culture” [6], while Denison and Mishra four cultures such as “adaptability, mission involvement, and consistency” [7]. Adaptability and mission are externally oriented, while involvement and consistency are internally oriented. Later on, Cameron and Quinn [8] meliorated Quinn and Rohrbaugh study and build up a competing value framework (CVF) model with four culture typologies which are adhocracy, hierarchy, market, and clan culture [9]. These cultural typologies are based on flexibility and stability, usually contended for advancing firm performance. Thus, OC has insightful implications for promoting or obstructing both knowledge-sharing [10] and innovative activities that affect business performance [4].

Particularly, knowledge resources and innovation are assumed to be indispensable for attaining paintable CA for long-term success in the competitive business setting [11,12]. Knowledge sharing (KS) is conceiving important for business firms to achieve desirable outcomes since it can help to produce new knowledge sources through

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collaboration and creation that significantly produce problem-solving skills, increases awareness of the sharer's decision making processes because knowledge-based assets are vital to the success of CA [13]. However, only having knowledge resources does not yield power to improve the overall firm performance; knowledge retention and sharing are necessary to manage knowledge properly to overcome many difficulties and turns into intellectual assets and productivity. For instance, knowledge-based communication builds mutual trust and respect, produces a knowledge-driven culture and innovativeness [14].

Innovation is the connotation of "newness," "success," and "change" [15]. Demircioglu appraised the importance of organizational innovation (OI) in organizations for both process and outcomes [16]. In particular, Camisón and Villar-López argue that OI is an essential source of CA and innovative organizations are somewhat flexible in adopting new methods and capabilities to make new opportunities and use existing business advancement opportunities [17]. So, organizational progression through KS and OI shows a productive way to achieve competitiveness and business excellence. Before that, a study affirmed that OC is an antecedent of KS and OI to nourish a company's performance [18]. In addition, it is emphasized that one of the decisive factors for knowledge management and organizational innovation is OC [19]. Empirical evidence suggested that OC largely contributes to KS and OI [20], also KS and OI are potent means to benefits CA [21,22].

Moreover, OC has the nature to optimize the competing values and manage the business environmental issues such as employees' management and continued development, particularly in the Pakistan textile sector. A recent study [23] on banking perceptible revealed that Pakistan has a "collectivist culture, which cherishes harmony, cohesion, and societal oneness". Importantly, cultural revolutionize in third-world countries like Pakistan is not easy, and due to lack of knowledge, most people do not know the importance of culture in organizational growth. However, comparatively less consideration has been paid to analyze the mechanisms through an OC set up CA [24], which sufficiently does not document which cultural-specific layers affect competitive advantage. Notably, the significance of culture as a vital instrument to manage knowledge sharing and innovation are somewhat scarce. Besides, extant literature is limited to providing empirical evidence for the integrated phenomenon and coexistence of knowledge sharing and organizational innovation to support competitive advantage. Thus, advancing the literature needs a better understanding and more precise explanation of the links between OC, KS, and OI as a predecessor to the conception of CA, particularly in the textile industry of Pakistan. A comprehensive study was carried out to address this essential gap.

The purpose of this study was threefold. First, this study examines the mediating effect of knowledge-sharing in organizational culture and competitive advantage relationships. Knowledge resources viewed as valuable firm-level assets ultimately leverage employees on access to valuable information that bestows knowledgeable and meaningful capabilities drive CA. Secondly; this study analyzes the mediating role of organizational innovation in organizational culture and competitive advantage relationship. Hogan and Coote stated that OC is essential to foster innovation and organizational effectiveness [4]. Hence, in the light of resource-based view theory [25–27], this study posited that OC, KS, and OI are valuable firm resources. Barney argues that "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc., controlled by a firm that enable the firm to conceive and implement strategies that improve its efficiency and effectiveness" [25,28]. Finally, this study empirically explores how organizational culture integrates knowledge sharing and organizational innovation to reinforce competitive advantage. This unique conceptual model adds value to the body of knowledge and provides insights for industrial managers to understand better and manage cultural base knowledge sharing and innovation to expand competitive advantage.

2. Literature review

2.1. Organizational culture

Organizational culture is considered as an organizational capital [24] and a core competency that develops compatibility between an organization's and employee's values, associated with "organizational performance" [29]. Cameron and Quinn define OC as "the values, beliefs and hidden assumptions that organizational members have in common" [8]. Process of beliefs, habits, values, and behaviour that shape individuals' behaviour within an organization is known as organizational culture. Likewise, every association has something unique about how it operates, like culture, technology, human resources, etc. This characteristic uniqueness differentiates it from other organizations. Ahmed and Shafiq posit that "the only thing of real importance that leaders do is create and manage culture" [30]. OC is an essential input to effective firm performance because corporate culture ascertains values, beliefs, and work systems that can guide and provide a suitable environment for competitive sustainability. OC is enabling new learning to streamline work, and it may lead employees' to comprehend the fundamental worth of the organization and develop a shared understanding about organizational processes and objectives, to be more involved in it. Cameron and Quinn delineated four organizational cultures: adhocracy, clan, hierarchy, and market [8].

Adhocracy Culture produces a dynamic and creative working environment. It fosters flexibility, adaptability, and creativity where innovation and risk-taking are regular practices. The companies' primary concern is acquiring new resources to produce more unique goods/services and enhance their competencies by adapting novel ways. *Clan Culture* creates a warm, supportive, and pressureless working environment. It facilitates firms to focus on developing people and team spirit to work with each other as a family. The leaders are focused on flexibility, and continuing benefits are achieved with an emphasis on employee development. Immense importance is given to teamwork, participation, and harmony. *Hierarchy culture* is characterized by work standards, organized methods, formal rules, and policies to control internal operations. Management seeks efficiency and makes an effort to be excellent coordinators to keep the stability, efficiency, and performance as long-term goals. *Market Culture* produces a workplace with competitive driving efficiency, focus on external transactions with suppliers and customers, aiming to obtain CA. Leaders' emphasis on productivity and hard to win and unify the organization. So, business repute and success become the major concerns for measurable results.

2.2. Knowledge sharing

Knowledge sharing has emerged through the knowledge management concept, defined by Malik and Kanwal as "an exchange of experiences, facts, knowledge, and skills all through the organization" [31]. KS to improve business capabilities is vital in the contemporary economy, promoting creativity and accelerating innovation for organizations [32]. Considerably, knowledge resources carried out new business possibilities and conducive employees to transmit information to solve the critical problems by developing new ways to improve work processes [33]. This highlights that it is not essential only to accumulate knowledge but also to share gathered knowledge is essential. KS as a decisive factor maximizes organizational ability in managing knowledge resources and helps individuals achieve business goals more efficiently [34]. Wang and Neo noted that KS is an essential organizational resource to obtain CA [35]. Therefore, business revolutions and workplace diversity need knowledge-sharing activities to create opportunities to improve the self-efficacy levels of staff, improve learning, and deliver the knowledge to different concerned personnel. The four contributing factors to KS are "environment and infrastructure, management support, culture, and technology" [36]. Moreover, KS is integrating and implementing the multi-stage process can be attained with the help of people

and technology, support communication in two different ways such as “explicit and tacit knowledge” to other staff by swap and socialization, seize complement new and valuable knowledge/skills that contribute to organizational performance.

2.3. Organizational innovation

Innovation has been conceptualized in a variety of ways. The OECD defines *innovation* as “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations” [37]. Innovation is a potential indicator of creativeness that contributes to organizational development and key to success in the marketplace. Organizational innovation refers to implementing and adopting new strategies and organizational practices for transformation inside the organization or external relations [38]. OI is precisely related to business performance, market share, and growth [39]. A recent study [40] revealed that strong competencies are drive-by innovation, and management has a leading role in improving firm internal/external processes by adopting innovation. Many authors [15,20] point out that OI a potential factor necessary for sustain firm growth and overall profitability.

Additionally, OI helps excel the business performance by producing workplace knowledgeability, satisfaction, and flexibility, supportive for organizational change in terms of advancement. Because OI potentially creates value, influence management to enable innovative practices that increase firm efficiency and competitiveness. Chatzoglou and Chatzoudes stated that innovation is responsible for the product, process, and technological improvements, beneficial in implementing new and better marketing approaches for future research of organization’s performance [41]. Thus, for long-term success, innovation plays a pivotal role in achieving competitive advantage. Only innovative organizations produce better performance and sustain stability in the marketplace against environmental changes [42].

2.4. Competitive advantage

Competitive advantage is the key to success in strategic management because it is a strategy designed to achieve corporate value [43]. CA defines as “a company that has a competitive advantage over its rivals when its profitability is greater than the average profitability of all companies in its industry” [44]. The foundation of CA is based on something unique that a firm has, and the key to success in the marketplace is the ability to create and sustain CA [45]. However, competition is found in all businesses, so that manufacturing firms must face and manage by endlessly quality of products/services to have a CA. Therefore, creativity and innovation are essential characteristics in a competitive business setting, which helps to make a product perfect. Keeping this view, management support is pivotal to developing a supportive and learning working environment that cultivates knowledge sharing and innovative activities. OC as a source of CA [24], and knowledge and innovation can be the modern-firms drivers for a set of CA [46]. Similarly, the confluence of OC, KS, and OI are assumed significant for the firm structure or strategy that drives business excellence [17,18]. Thus, firm competitiveness ought to rely on capabilities and resources to attain differentiation in advancement, risk tolerance, and tendencies towards taking risks in front of rivals and be incredibly effective in seizing business opportunities and obtaining the prime market share to be able to stay in the world of business [1].

2.5. Resource-based theory (RBT)

The “Resource-Based Theory” (RBT), also referred to as the “resource-based view” (RBV) of the firm [25–27], explains how the resource was owned, deployed, and exercised by a firm. Such capabilities and resources, in abnormal profit, they often related to CA. Camisón

and Villar-López argue that RBV is “a capability that refers to the deployment and reconfiguration of resources to improve productivity and achieve strategic goals” [17]. These resources and core competencies with unique characteristics will expand CA and drive business excellence. A firm’s distinctiveness of strategic capability is based on rareness, value, and inimitability, which helps an organization to reconfigure and properly arrange valuable resources to foster knowledge and innovation. Knowledge-related research has been linked to RBT and its extension of the “Knowledge-Based view” [47]. Knowledge-based assets have been viewed as a firm’s mainstay bodies that create, integrate, and share knowledge to produce superior values. Indeed, RBT tied firm intangible assets, e.g., learning and knowledge) to generate more significant profit than purchase resources. The potential to make values is not based on financial or physical resources to set the knowledge-based assets. For example, OC as a core competency is vital to sustaining CA [24]. More specifically, if companies understand its cultural effectiveness, they can precisely consider the benefits of culture to manage knowledge properly as a competitive move, expand business excellence. Importantly, KBV tied with OI is crucial for firms because the essence of OC regarding innovation fabricates a structure for management that improves the organizational competency to innovate as absorptive capacity. It defines as “the ability of an organization to recognize the value of new information and knowledge, assimilate, and apply them, and this ability is critical in determining an innovative result” [48]. The RBT can entirely elucidate understanding OC, KS, and OI; synchronizing well with firm strategic assets and core competencies provide sustained CA of an organization. Because, this theory points out that if OC as an intangible asset is carried out viably in various levels of the organization leads to specific resources and capabilities that drive superior performance through knowledge and innovation [17,24,49,50]. The proposed framework supported by RBV assist in establishing integrated phenomena of knowledge-sharing and organizational innovation through organizational culture to reinforce CA.

3. Development of hypotheses

OC as a valuable resource, setting inside the organizational context offers a standard arrangement of learning in which individuals can gain, create, and share knowledge during their functional tasks. In the knowledge management setting, firms allude to themselves as associations that persistently learn and take advantage of the knowledge [51]. Potential knowledge and capacity to turn this knowledge for value addition in business are essential [52]. Accordingly, much consideration has been set on the most proficient methods to create and upgrade organizational knowledge as a valuable resource. In this sense, culture has an imperative role in promoting knowledge-sharing activities that augment personnel productivity and improved problem-solving skills [53]. In addition, OC has a leading role in persuading employees’ knowledge-sharing attitudes [10] and keeps employees motivated at the workplace that increase productivity [54,55]. This brings forth a knowledgeable workforce that is crucial for business development [56]. Several scholars affirmed that OC positively correlated with KS [18,57]. Mainly, Knowledge is coming to view as proprietary of CA [58], and sharing Knowledge is significant in the process of knowledge creation and transforming it into productive outcomes [59]. The study of 100 top-ranking firms unanimously revealed that culture has a vital role in increasing firm performance (FP) and leads a business to achieve CA [60]. Researchers usually agree that OC is recognized as a core competency [61,62], drive firm competitiveness. Moreover, Schwartz and Davis identify that “for better or worse, a corporative culture has a greater impact on an organizational ability to carry out goals and objectives, especially when an organization is shifting its strategic direction” [63]. OC enables industrial firms to operate productively or more efficiently than their competitors. Likewise, a knowledgeable workforce potentially integrates the organizational values [23] and becomes an efficient tool for developing and maintaining products/services,

procedures that lead to CA [64]. Considering OC strategic role in increasing KS that can improve the company's performance to drive CA is essential. A recent study emphasized the importance of KS to promote an innovative culture and sustain CA [65]. Similarly, earlier studies affirmed that OC is a prime predecessor of KS [18], and KS success positively predicts CA [21]. Base on the above discussion from existing literature, therefore study proposes the following hypothesis:

H1. Organizational culture reinforces competitive advantage by positively affecting knowledge sharing in the organization.

Culture is a platform that impacts people and processes [23], which provides a better understanding of the overall system and new ideas and procedures [66,67]. Certainly, OC stimulates employees working attitude and capacitates them for inter-functional cooperation, communication, competency and professionalism, risk-taking, and maximize customer interaction, all of which are crucial for firm productivity and CA [30]. Further, OC has a leading role in promoting creativity and innovation, provides a sequential path to advance firm capabilities that drive business performance [68]. Martins and Terblanche stressed the importance of organizational innovation [69] and argued that innovation is critical for the development of a business and facilitates firms to operate differently to far ahead from their rivals. However, in the contemporary economy, technologies are rapidly changing every industry. Therefore, organizational innovation is strategically important to improve overall organizational systems [55]. Innovation is essential for the advancement of products and services [70]; however, the greatest challenge for an organization is to attain CA through "acts of innovation" [71]. Even though the product's life-cycle is shortening, increasing competitive situations become a crucial factor influencing industrial firms to increase business efficiency with innovation. So, to get performance consistently above average, the company must have a CA and innovation as decisive factor augment business value in response to environmental changes and set up CA. Thus, for long-run success, industrial firms are required to upgrade their knowledge about technological advancement and configured business accordingly to optimize performance [72,73]. Like this, using high-tech tools and advanced mechanisms can speed up business operation that leads to CA; so, many of them turn to become allies to get desired results in the competitive marketplace [74]. Likewise, leaders always try to discover innovative ways to introduce new products/services and improve the gradually competitive world. A direct relation between OC and OI is proven by the prior studies of [70,75]. Similarly, many studies affirm that OC and OI a strategical tool important for attaining CA [38,76,77]. Considering the discussion above; this study proposes the following hypothesis:

H2. Organizational culture reinforces competitive advantage by positively affecting organizational innovation in the organization.

Competitive advantage is a condition that enables industrial firms to operate productively or more efficiently than their competitors. The wide variety of culture-based studies concluded that OC as a social force considerably concords the human capital with an organization roadmap [62], to form a solid business culture that significantly affects other levels [78]. Therefore, it can be contended that maintain a strong culture; management decisions must be linked to the necessary assumptions, beliefs, and values that reflect in its business practices and collective wisdom. Like this, the corporations concentrating on internal culture have greater profitability than those with less focus on culture. In addition, organizational capabilities can be attaining through potential knowledge and innovation [79], enhance organizational competitiveness. Therefore, this study posits that management is task-focused and should frequently apply new knowledge and innovation to their immediate tasks. Knowledge assets and preference to innovative a business can mobilize CA [18,55]. It could ameliorate and develop core managerial values (how to treat workers, suppliers, customers, and others) to create new/improved business capabilities in the competitive environment [61]. Business financial and physical resources enhance the

company's ability to channel unique invisible resources (e.g., innovation culture, competitive strategies, and managerial performance), mobilized KS, and innovativeness [57,80]. Besides, organizational support gives a competitive position, achieves a degree of excellence in its performance by supportive culture and competencies of human skills that enable the adaptation of procedural and scientific techniques to achieve CA and sustainable company growth that can depend on knowledge and innovation capabilities [38,65]. More specifically, knowledge and innovative capabilities are the key antecedents of CA driven through OC. In addition, a study explains that both innovation and competitiveness need knowledge [46]. The mechanism of KS and OI can be accelerating when the effectiveness of OC is addressed adequately to achieve CA [18, 81]. Further, OC as an influencing factor impact KS and OI [45,82]. OC enables business firms to look at new sources of knowledge and innovation to expand CA [45]. Accordingly, the "Resource-Based Theory (RBT)" suggested that the resources of a firm (e.g., finance, human capital, knowledge assets, and innovative capabilities, etc.) are the significant sources of CA [25–27]. In addition, organizational structure can improve with the help of innovation to develop a new business model as a competitive action. So, managers should endeavor to promote KS, creativity, and innovation among the employees to augments business efficiency that is central to develop CA. Hence, this study posits that OC, KS, and OI, are key drivers in gaining CA and proposes the following hypothesis:

H3. The effect of organizational culture on competitive advantage is stronger when it simultaneously affects knowledge sharing and organizational innovation.

4. Research mythology

4.1. Participants and settings

This research was conducted in the context of the textile industry of Punjab, Pakistan. The textile industry has an immense contribution to the total export industry of Pakistan, representing approximately 57% of the country's total exports in FY 2017–18 [83]. Pakistan is the 8th largest exporter of textile products in Asia and the third-largest consumer of cotton. It is the single largest sector, which contributes 60% to Pakistan's total exports. It comprises 46% of the total manufacturing sector and employs 40% of the total labor force. According to the Punjab Board of Investment and Trade (PBIT) and the All Pakistan Textile Mills Association (APTMA), around 300 textile firms are running the business in Punjab [84,85], and on average, ten managers are providing services in one textile unit. So, the target population for the present study is industrial managers (e.g., Directors, General Manager, Admin Officer, Account Manager, IT Manager, Marketing Head, HR Manager, Quality Control Officer, etc.) who are providing services in different departments of these textile firms.

For sample size calculation, the most commonly used method in the behavioral studies is Krejcie and Morgan [86] technique, so, using Krejcie and Morgan's table, a sample size of 341 industrial managers was considered for this study. Moreover, Roscoe argues that "sample sizes larger than 30 and less than 500 are appropriate for most research" [87,88]. If the population is known, the probability sampling technique defines the equal chance of selecting a sample [53]. A simple random sampling technique was used to gather primary data through a structured questionnaire in 2020. All 341 questionnaires were distributed, and multiple visits were offered at their workplace to get a maximum response rate. The period of data collection was four months. Three hundred six questionnaires were returned out of 341, in which 269 respondents filled the instrument in hard form while 37 respondents filled the online questionnaire (e.g., Google form). In these 306 questionnaires, 12 were not filled suitably, which was excluded from later scrutiny, and 294 fully completed questionnaires were considered for the final analysis. Hence, the response rate was 86%.

4.2. Measures

The survey was carried out with a multi-item method, and a 5-point Likert scale was used to measure all items, where “1” for “strongly disagree” and “5” for “strongly agree.” All items that were utilized to operationalize the constructs that were adopted from earlier studies had already been validated see (Appendix-A). Organizational culture has four dimensions; hierarchy, market, clan, and adhocracy measured using eight items developed by the Cameron and Quinn, and Denki Ringo research groups [8,89]. Knowledge-sharing was examined by four items [90,91], and organizational innovation was also investigated by using four items [68,91]. Competitive advantage was measured by five items [1,92].

4.3. Data analyses procedures

The proposed research has higher-order constructs or “Hierarchical component models” (HCMs) are usually identified in the context of PLS-SEM, examine by using SmartPLS 3.28. HCMs are based on a two-stage approach: One is lower-order components (LOCs), and the second is higher-order components (HOCs) [93–96]. HOCs capture “more abstract higher-order entity” while LOCs capture “sub-dimensions of the higher-order entity”. In HOC’s measurement model, “researchers usually assign all the indicators from the LOCs to the HOC in the form of a repeated indicators approach” [94]. The PLS algorithm provides internal consistency, scale reliability, convergent validity, and discriminant validity in the measurement model. Bootstrapping was used to evaluate the structural model, assessing the relevancy and significance of hypothesized relationships.

Table 1
Evaluation of measurement model.

Second order construct	First order construct	Indicators	λ^a	A^b	CR ^c	AVE ^d
Competitive Advantage		CA1	0.86	0.88	0.91	0.67
		CA2	0.82			
		CA3	0.83			
		CA4	0.84			
		CA5	0.75			
Knowledge Sharing		KS1	0.74	0.81	0.88	0.64
		KS2	0.80			
		KS3	0.83			
		KS4	0.83			
Organizational Culture	HC	HC1	0.88	0.74	0.88	0.79
		HC2	0.90			
	MC	MC1	0.91	0.80	0.91	0.83
		MC2	0.92			
	CC	CC1	0.90	0.77	0.90	0.81
		CC2	0.91			
	AC	AC1	0.88	0.70	0.87	0.77
		AC2	0.88			
Organizational Innovation		OI1	0.82	0.85	0.90	0.69
		OI2	0.82			
		OI3	0.82			
		OI4	0.86			

Note.
^a Factor loadings.
^b Cronbach’s alpha.
^c CR = Composite reliability.
^d AVE = Average variance extracted.

5. Results

5.1. Evaluation of measurement model

Table 1 provides the results of the factor loadings of individual items, Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE). Internal items consistency assessed using Cronbach’s alpha, and composite reliability and values above 0.70, revealed higher internal consistency reliability. In the second step, we checked the convergent validity (CV). CV “extent to which a measure correlates positively with alternative measures of the same construct” [97]. The criterion to check convergent validity is AVE. The value of AVE is 0.50, or higher indicates that “on average the construct explains more than half of the variance of its indicators” [94]. In our model, the value of AVE is above 0.5 that confirmed the convergent validity. Another step to evaluate the convergent validity is the outer loadings of the items. For this, the value of 0.708 or higher is satisfied and shows that indicators are reliable. In our case, loading values are above 0.708, which is acceptable.

After analyzing the CV, discriminant validity (DV) was evaluated through Fornell and Larcker’s Criterion [98]. In the correlation matrix, the square root of every construct of AVE is checking the comparability through its bivariate correlations with all divergent constructs. Discriminant validity subsists when the square root of AVE for each element exceeds the values of its bivariate correlations [99]. Here, the square roots of every constructed AVEs are higher than opposite constructs in their respective rows and columns and demonstrated that discriminant validity is established. For example, in the Table 1 the construct “adhocracy culture” AVEs value is 0.77, and its square root is 0.88, indicated in Table 2.

The above techniques for setting up discriminant validity have been viewed as not enough to observe discriminant validity, and another new criterion, name as Heterotrait-Monotrait Ratio (HTMT), is used to confirm the discriminant validity. Using a more conservative approach, the HTMT ratio between the two constructs up to 0.85 is desirable. However, a value ranging from 0.85 to 0.90 is also acceptable [100]. Table 3 shows that all values of HTMT. So discriminant validity has been confirmed in our model based on HTMT 0.85 criteria.

5.2. Evaluation of the structural model

Once reliability and validity of the data were established in evaluating the measurement model, the next stage is testing the structural model. For this, we run the bootstrapping with 2000 samples to estimate the higher-order constructs model. Bootstrapping provides the values of path coefficients, t-values, and p-values, where the importance and significance of the construct’s path relationships can be determined (see Figs. 1 and 2).

Our higher-order constructs model’s mediation analysis was carried out using the newest mediation procedures [94]. In SmartPLS, mediation can be found out by a two-steps procedure [94–101]. In the first step, examine the importance of the direct effect of the independent variable on the dependent variable. The second step required testing the indirect effect of the independent variable on the dependent variable in the presence of a mediator. The significant indirect effect provides

Table 2
Fornell and Larcker’s criterion.

	AC	CA	CC	HC	KS	MC	OI
AC	0.88						
CA	0.44	0.82					
CC	0.62	0.29	0.90				
HC	0.58	0.43	0.62	0.89			
KS	0.37	0.62	0.22	0.37	0.80		
MC	0.63	0.46	0.61	0.66	0.43	0.91	
OI	0.46	0.75	0.28	0.44	0.68	0.41	0.83

Table 3
Heterotrait-monotrait ratio (HTMT).

	AC	CA	CC	HC	KS	MC	OC	OI
AC								
CA	0.56							
CC	0.84	0.35						
HC	0.80	0.53	0.82					
KS	0.49	0.74	0.28	0.47				
MC	0.84	0.56	0.79	0.85	0.53			
OI	0.60	0.84	0.33	0.55	0.83	0.49	0.53	

support for the mediation hypothesis. Go after the measures mentioned above; summarized results of hypotheses testing are exhibits in Table 4. OC included higher-order components and direct effect of OC on CA is positive and significant ($\beta = 0.484$; t -value = 8.316^{***}). In addition, all four dimensions of OC: adhocracy, clan, hierarchy, and market have

positive and meaningful effect on CA, in which market culture has a stronger positive effect on CA ($\beta = 0.266$; t -value = 3.747^{***}), whereas hierarchy culture has a lower positive effect on CA ($\beta = 0.0.211$; t -value = 2.925^{**}). Moreover, direct effect of OC on KS ($\beta = 0.418$, t -value = 6.703^{***}); OC on OI ($\beta = 0.476$, t -value = 8.459^{***}), KS on CA ($\beta = 0.187$, t -value = 2.575^{**}), and OI on CA ($\beta = 0.552$; t -value = 6.883^{***}), are significant. The indirect effect of mediation model-1 is positive and significant ($\beta = 0.212$, t -value = 6.177^{***}), hence supporting Hypotheses H1. The mediation model-2 is positive and significant ($\beta = 0.318$, t -value = 7.353^{***}), validating H2. Accordingly, the significant indirect effect of KS (M1) and OI (M2) both are partially mediate the proposed relationship. Finally, the simultaneously affect of KS and OI as a mediators also remains positive and significant ($\beta = 0.341$, t -value = 8.242^{***}), delineate that KS and OI partially mediates the impact of OC on CA, Hypothesis-3 supported.

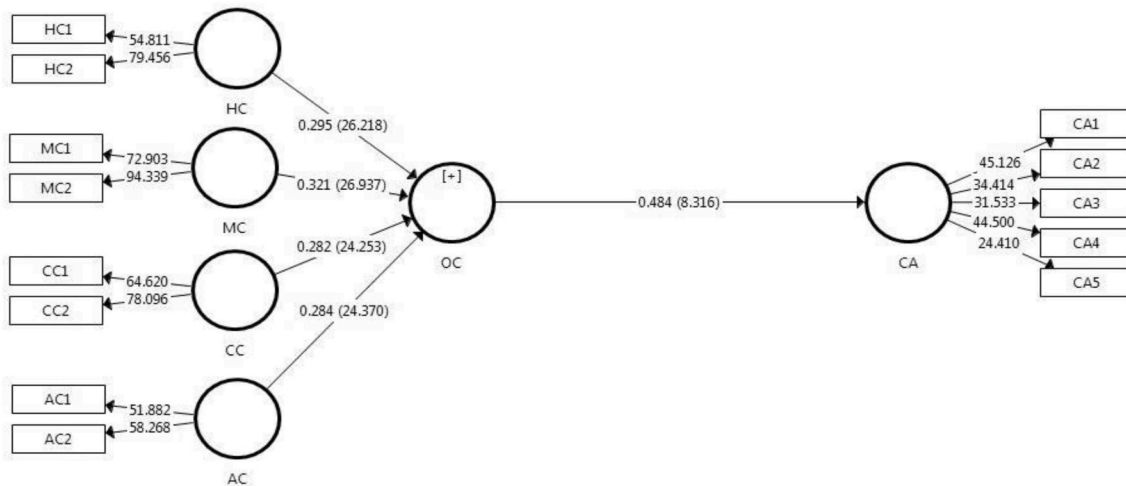


Fig. 1. Bootstrapping results for model A

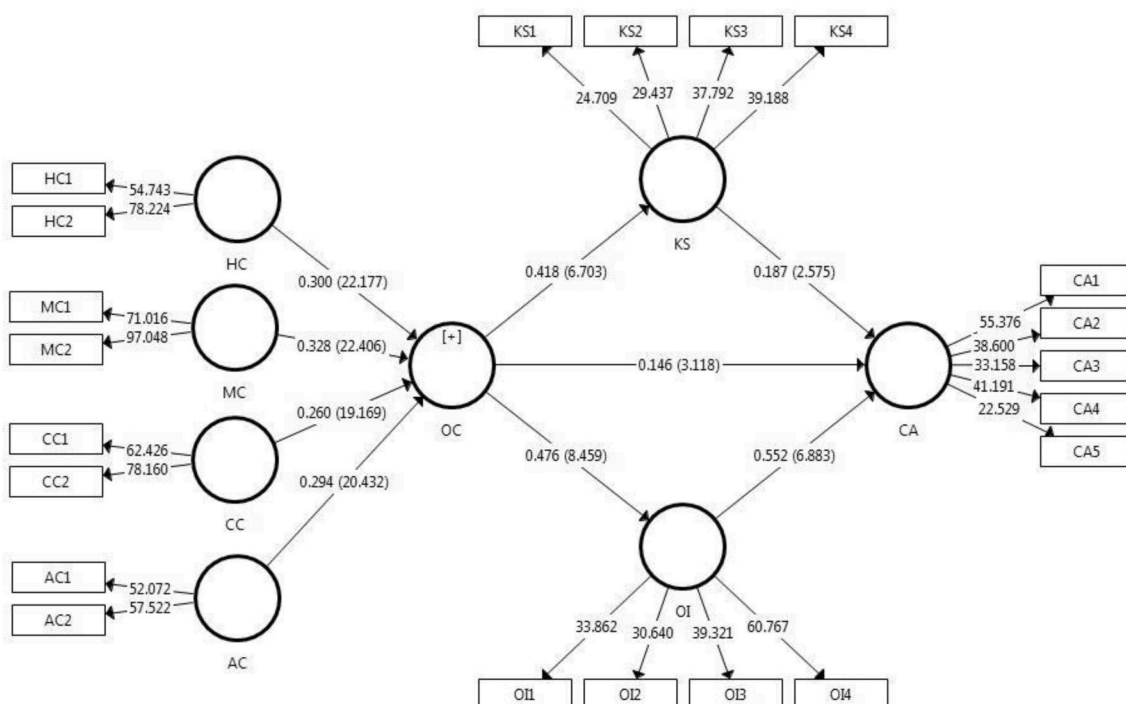


Fig. 2. Bootstrapping results for model B.

Table 4
Results of hypotheses testing.

Models	Relations	Parameter Estimator	T-value	P-value
Direct Effect	OC	0.484	8.316	0.000
	→CA			
	AC	0.246	3.506	0.000
	→CA			
	CC	0.215	2.973	0.001
	→CA			
	HC	0.211	2.925	0.003
	→CA			
	MC	0.266	3.747	0.000
	→CA			
	OC	0.418	6.703	0.000
	→KS			
	OC	0.476	8.459	0.000
	→OI			
Indirect Effects	KS	0.187	2.575	0.010
	→CA			
	OI	0.552	6.883	0.000
	→CA			
	OC	0.212	6.177	0.000
	→KS			
	→CA			
	OC	0.318	7.353	0.000
	→OI			
	→CA			
OC	0.341	8.242	0.000	
→KS				
→OI				
→CA				

* P-Value <0.05. ** P-Value <0.01. *** P-Value <0.001.

6. Discussion and conclusion

The present study provides clear and comprehensive aspects of gaining a competitive advantage in the textile industry and delineated that OC, KS, and OI as a valuable-resources [18,59,and81]] organized people and processes of a business for the manufacturing and services advancement [2,70]. Data from 294 industrial managers validated our research model. Knowledge and innovative capabilities can flourish in a supportive platform, beneficial for industrial firms to compete for global competition by producing new/improved products and procedures that emerge; also, it has pervasive effects on the radical rebuilding of entire industries. The finding of earlier published studies demonstrates that knowledge/resources and innovativeness enhance business performance and lead to CA [75,76]. Accordingly, we provide a diagnostic tool for industrial firms to upgrade managerial capabilities, manufacturing operations, and aiding better FP. So, culture with its unique properties influence business firms to challenge earlier presumptions about their products/services portfolio and ensuring competitiveness. The present study contributes to the validation of theory by examining OC, KS, and OI as key drivers in gaining CA. This is in harmony with the “resource-based view” theory [25,28], as knowledge and innovation are essential strategic resources in creating new business values and capabilities for an organization. Thus, for long-run success in the competitive environment, managers should focus on expediting the organizational capabilities driven by “knowledge and innovation” to sustain CA.

7. Theoretical implications

Findings from this research are applied to the theory and practice of business research in several ways. First, this study adds value to the body of knowledge in the industrial sector by exploring organizational

culture’s constructive role in advancing business capabilities. Earlier studies merely consider certain aspects such as performance reward, collective responsibility, integration of functions, and interdisciplinary working groups [24,102,103]. So far, most literature has been theoretically analyzing the proposed relationship without directly testing the effect of OC has on CA. Therefore, we extend emerging literature and statistically substantiate the straight link of distinct cultural values in predicting CA. Many studies suggested that KS and innovation alone do not lead to augmented CA [55,82]. They further stress that cultural values support KS and OI drive CA [104]. OC as an internal enabler promotes knowledge and innovative practices and transforming them into productive outcomes. Besides, KS and OI provide a broad foundation for cultural values and a better understanding of organizations’ behaviors. The prior study supports our findings that OC has a meaningful impact on knowledge management [105], while another study revealed that culture is crucial for innovation performance [106].

Finally, this study statistically found the dual-mediation effects of KS and OI on CA in the context of OC as a predictor of KS and OI. By introducing the dual mediators, there is strong support for a partially mediated-model (PMM) in the effect of OC on CA. Mainly, integrated phenomenon and coexistence of KS and OI are underrepresented in the textile sector, so it is uniquely the first attempt to check these drivers in the proposed relationship. Thus, for the radical restructuring of a business model, OC is increasingly essential to endorse KS and innovation [69], to produce unique outcomes [107]. The findings of this study substantiate earlier findings that knowledge and innovation are referred to as essential strategic resources that industrial firms need to build up to be effective in the long-term competitive move [55]. So, this study provides a unique business model to facilitate manufacturing firms in an increasingly competitive world. As an essential addition, we advance and validate the literature by applying resource-based theory to build up a framework of knowledge sharing and organizational innovation mobilized by human resource capabilities [17,20,65,and106]]. Furthermore, the enormous contribution of this study was that we provided a broader view of the multidimensionality of culture, comprising of CA, KS, OI, and CA that has been statistically evaluated and established.

8. Managerial implications

The implication insights aim to facilitate industrial executives and practitioners. First, our study statistically proves that all four cultural dimensions have a positive and meaningful effect on CA, so it emphasizes the managers’ to concentrate on any cultural value to take the benefits of a unique cultural setting. Although, cultural changes in third-world countries like Pakistan are not easy because most people, due to lack of knowledge, do not know the importance of culture for organizational growth and, therefore, leaders are advised to design OC that represents the organizational manifesto and invigorate mutual understanding between executives and employees. It would capacitate the managers to produce value-creating and revenue-creating opportunities (e.g., quality products, technology-based services, better customer analytics, and mass customization) in business-to-business settings [104, 108]. However, emphasizing all four cultural typologies could produce the best outcomes in terms of potential managerial values significantly predicting CA. Besides, developing and sustaining a culture takes dedication and persistence. The outcomes suggest that consideration to OC may be a valuable focus to stimulate human resources to build up firm performance in a dynamic environment [109]. Second, the existent of an influential culture that is s auxiliary characterized by flexibility and openness for internal communication, risk-taking, responsibility, teamwork and professionalism, and many others will appreciably contribute to KS activities and innovation as an approach to expand CA [19,55]. This will lead to acquiring specific business advantages that can be possible with knowledge and effective utilization of this knowledge to enhance workplace efficiency and innovativeness, which would help

individuals comprehend the organizational processes and produce the best possible ways to advance business. Besides, leaders must devote time to construct cultural values to cultivate novel organizational capabilities that absorb knowledge from specialized people and enhances innovativeness and office productivity, drive not only from leaders but also from co-workers to deal better with operational challenges in the competitive environment. More specifically, leaders should sanction their managers to upgrade their managerial capabilities, manufacturing operations, usage of high-tech instruments, and mechanisms and transfer this expertise to lower-line management to enhance workplace efficiency that drives CA. Prior studies support our notion that KS and OI, and innovation are essential elements of human development and the leading source of CA in all fields of business [22,65]. Finally, our study developed a unique business model to advance the industrial firms in the management of intensive competitive situations with developed human resources that improve their internal landscape, acquire new approaches to engage and retain clients in B2B competition. Additionally, study results provided proof on the perception of change in the textile industry on existing competitive situations by adopting good culture for knowledge sharing and organizational innovation that improve CA. Notably, Pakistan deals with the deficiency in a local production of cotton and electricity shortage for over a decade [38], that also becoming challenging to maintain global trade requirements.

Therefore, textile industry policymakers role in the present situation is decisive for assessing the specified policies to minimize these challenges and developing future strategies and influential culture, ensuring manage knowledge properly and innovative steps efficiently toward sustainable development of the textile industry in Pakistan. Industrial practitioners must support their workforce to enable KS and innovative thinking and cultivate such a cultural environment to augment performance. This study has opened a new avenue for improving business culture, particularly the textile sector in Asia and beyond. In addition, we expect that study’s findings and model could be widespread in other industries of the Pakistani economy.

9. Limitations and future direction

Firstly, this study was restricted to the textile industry of Punjab, Pakistan. Future studies in other high-tech industries, such as (IT, Pharmaceuticals, and Automobiles) or services industries (Banks or Hotels) relate to the broader types of OC, knowledge, and innovation process to establish firm performance may carry out. Secondly, this study was cross-sectional, while future research may consider the longitudinal approach on cultural characteristics in adopting knowledge and innovative strategies to determine CA.

Appendix-A

Construct	Items	Indicators
Competitive Advantage	The quality of the company’s products or services is better than that of the competitor’s products or services.	CA1
	We make great efforts in building a firm brand name.	CA2
	Manufacturing costs are lower than that of our competitors.	CA3
	The company has better managerial capability than the competitors.	CA4
	The company’s profitability is better than the competitors.	CA5
Knowledge Sharing	Our employees exchange knowledge with their co-workers.	KS1
	In their work, our employees rely on experience, skills, and knowledge.	KS2
	In the relationship, we frequently adjust our shared understanding of end-user needs, preferences, and behaviors.	KS3
	Our companies exchange information related to changes in the technology of the focal products.	KS4
Organizational Culture	We have informal norms and rules which are to be followed by everyone.	HC1
	Instructions and regulations are needed to govern every process of work.	HC2
	Customers’ interests are never ignored in the decision-making of an organization.	MC1
	We constantly improve our methods of work to gain advantages over rivals.	MC2
	The agreement is easily achieved even concerning complex problems in the organization.	CC1
	In a group, everyone must put maximum effort to achieve a common goal.	CC2
	Information is available for everyone. One can get any needed information.	AC1
	New ideas must be applied immediately; otherwise, they become old and obsolete.	AC1
	Our Company tries out new ideas.	OI1
Organizational Innovation	Our Company is creative in its methods of operation.	OI2
	Innovation is readily accepted in management.	OI3
	Our Company encourages and supports innovative activities.	OI4

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