

Mediating effect of the organizational culture on the relationship between leadership and operational performance in food processing SMEs



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ABSTRACT

The purpose of this study is to examine the role of leadership on the operational performance of food processing SMEs in Punjab, Pakistan. This study also examines whether the organizational culture plays a mediating role in the relationship between leadership and operational performance. Previous studies explained that visionary leadership and dynamic organizational culture are the key factors for the organization's success that provide a competitive environment and had an impact on the organization's performance. The data were collected from 288 food processing SMEs through purposive with snowball sampling techniques. A structured questionnaire was employed for data collection from the Owners/Managers of the food processing SMEs. The Partial Least Square (PLS) approach was used to test the proposed hypothesis. The empirical investigations show that leadership is positively related to organizational culture and operational performance. The study also found a mediating role of organizational culture between leadership and operational performance by adopting the Hayes process of mediation. The findings of the study will help food manufacturers in improving the operational performance of their SMEs. Moreover, by practicing transformational leadership styles, and adopting the quality culture, SMEs can get a competitive advantage.

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1. Introduction

Leadership is considered a key driver to achieve organizational goals. Several authors highlighted the important role of top management and leadership such as [Ahire et al. \(1996\)](#), [Fotopoulos and Psomas \(2010\)](#), [Sila and Ebrahimpour \(2003\)](#), and [Talib and Rahman \(2010\)](#). The authors stated that visionary leadership makes strategies for process improvement, focuses on continuous improvement, and more focus on customer satisfaction. Additionally, [Dora et al. \(2016\)](#) stated that leadership and top management commitment have an impact on performance, especially in the SME context, where management is actively involved in daily operations.

According to [Ahmad \(2012\)](#), culture is the main source of difference in performance management practices among developed and developing countries. In addition, [Farashahi, et al. \(2005\)](#) mentioned that 95% of studies related to organizational theories were conducted in developed countries, while only 5% were conducted in developing countries. There is a theoretical linkage between leadership and the mediating effect of organizational culture. Therefore, this study tests the potential mediating role of organizational culture in the relationship between leadership and operational performance in food processing SMEs.

Numerous studies have examined the mediating role of organizational cultures, such as [Al-Ali et al. \(2017\)](#), [Gorondutse and Abdullah \(2016\)](#), and [Pradhan et al. \(2017\)](#). Similarly, some studies found in the relationship of organizational culture and performance, such as the study of [Hassan et al. \(2011\)](#) in the higher education sector, [Ahmad \(2012\)](#) focused on employees of the university, and the study of [Khan et al. \(2016\)](#) conducted in the education sector. There is a dearth of studies related

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to organizational culture in the SME sector, especially in Pakistan. Therefore, this study is focused to examine the mediating role of organizational culture in the relationship of leadership and operational performance in food processing SMEs of Punjab, Pakistan.

2. Literature review

Small and Medium-Sized Enterprises (SMEs) are considered as an engine for economic growth, 90% of the global business comes under the SME category. This sector provides self-employment to nearly 70% of the labor force (Gorondutse and Abdullah, 2016). Similarly, in Pakistan, 90% of the business comes under the SME category, as about 3.2 million establishments are operating in the country. Pakistan is rich in agriculture and produces ample quantities of wheat, rice, corn, sugar cane, and different kind of fruits and vegetables. The food and allied products industry of the country is growing rapidly and accounts for 27% of value-added production, 16% of the manpower from the total manufacturing industry is employed in this industry. The food industry is considered one of the largest industries in Pakistan (Afaqi and Seth, 2010).

2.1. Hypotheses development

2.1.1. Relationship between leadership and operational performance

Leadership acts as the foundation to achieve business results. The active role of a leader pivots towards the improvement of organizational performance. Leadership had both direct and indirect effects on business results (Fotopoulos and Psomas, 2010). Furthermore, Jabeen et al. (2015) found a significant relationship between leadership and firm performance. In addition, Hennessey (1998) said, to become an effective leader, it is mandatory to have the ability to understand and work within a culture.

Para-González et al. (2018) highlighted the importance of transformational leadership and stated that transformational leadership motivates their fellows to enhance their knowledge and encourage them to be innovative with problem-solving tools. Transformational leaders possess charisma, enhance communication, develop trust and share knowledge with colleagues and subordinates. In addition to that Menguc et al. (2007) stated, the relationship between leadership and organizational performance is more important in current situations, where companies must be innovative in order to achieve competitive advantages. Therefore, this study desires to further examine the relationship of leadership in the operational performance of food processing SMEs in Punjab, Pakistan. The questions about this important construct are mainly related to the vision, mission, plans, quality improvement, and the provision of

resources. Hence, based on the above literature, the following hypothesis is proposed.

H₁: Leadership is significantly related to operational performance in food processing SMEs.

2.1.2. Relationship between leadership and organizational culture

Leadership creates an environment in which essential organizational change is likely to occur (Hennessey, 1998). According to Brooks (1996), specific leadership behaviors are associated with distinct cultural traits; therefore, leaders must use their knowledge of organizational culture to effect change. Furthermore, Block (2003) stated that leadership and cultural connections have an impact on organizational performance. The author suggested that both factors require further investigation by researchers and practitioners, to prepare them for the twenty-first century market. Likewise, Burke and Litwin (1992) stated that leadership and organizational culture are explanatory constructs, and both have an impact on organizational performance. Moreover, Block (2003) said that leadership and culture are so central to understanding the organizations and making them effective. Thus, this study desired to further examine the relationship of leadership and organizational culture, in the food processing SMEs of Pakistan. The above literature and discussion lead to the following hypothesis.

H₂: Leadership is significantly related to organizational culture in food processing SMEs.

2.1.3. Relationship between organizational culture and operational performance

Culture is defined as the combination of norms, feelings, beliefs, behaviors, thinking, roles, attitudes, expectations, customs, and rules that distinguish one group of people from another (Tayeb, 1994). Organizational culture relates to shared philosophy, ideology, values, assumptions, hope, behavior, and norms that bounds the organization together (Aktas et al., 2011). In addition, cultural norms are different from country to country and region to region, the comparative study of Fey and Denison (2003), found different results of organizational culture in America and Russia. However, organizational culture is linked to performance and plays a key role in generating competitive advantage (Scholz, 1987). Moreover, leadership and organizational culture have an impact on performance (Lee et al., 2018).

A high level of organizational performance is generally linked to an effective culture with an appropriately merged and productive set of values, opinions, and attitudes. In addition, organizational culture is the essential construct in the field of management research, due to its capability to cause an impact on organizational outcomes. The organizational culture is mainly determined on the

basis of leadership/management’s commitment and participation in the organizational works (Gorondutse and Abdullah, 2016). The study of Pinho et al. (2014) found a significant relationship between organizational culture and performance. Furthermore, cultural traits such as involvement, consistency, adaptability, and mission are considered as an integral part of the process of organizations, organizational culture is measurable and relates to organizational outcomes (Denison and Mishra, 1995).

Numerous studies conducted on the relationship between leadership and performance, culture and performance, much of interest in the two areas is based on claims that both leadership and culture are linked to organizational performance (Ogbonna and Harris, 2000). Therefore, this study wants to examine the mediating role of organizational culture in the relationship between leadership and operational performance in food processing SMEs in Pakistan. Our study parameters related to organizational culture mainly focus on mutual respect among team members, sharing of information, willingness to accept change, dealing with customer’s quarries on time, participation and open discussion among staff, and teamwork. On the basis of the above discussions following hypotheses are proposed.

H3: Organizational culture significantly relates to operational performance in food processing SMEs.

H4: Organizational culture mediates the relationship between leadership and operational performance in food processing SMEs.

Operational performance is defined as the internal operations of the company in terms of cost and waste reduction, improving the quality of products, improving flexibility, improving delivery performance, productivity improvement, and having an impact on financial performance (Kafetzopoulos and Gotzamani, 2014; Salaheldin, 2009). It is believed that poor operational performance indirectly affects a firm’s financial performance, and also the company’s image. Therefore, this study selected operational performance as a measure of food processing SMEs. The questionnaire in this study contains the items related to product quality, quantity, process time, and process effectiveness.

This study is underpinned by resource-based view (RBV) theory, which provides a competitive and sustainable advantage. Over the years RBV has become a critical driver of export performance and positively influences the performance of the food processing industry SMEs.

Moreover, a sustainable advantage is dependent upon the value, rarity, and sustainability of the culture concerned (Barney 1991; Ogbonna and Harris, 2000). The conceptual model of the study is presented in Fig. 1.

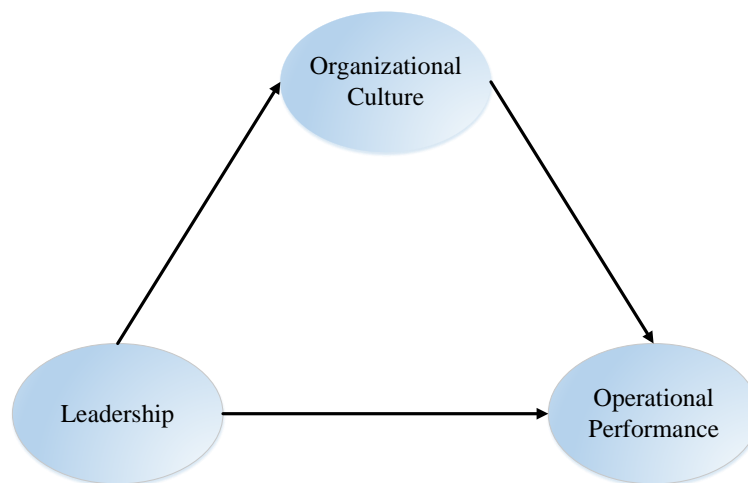


Fig. 1: Conceptual model

3. Methodology

The target population of this study was SMEs operation in Punjab, a province of Pakistan. The data

were collected through a structured questionnaire; the questions were mainly derived from previous empirical studies as mentioned in Table 1.

Table 1: Construct and their measurement scale

	Construct	Sources	Scale	Remarks
1	Leadership	Hietschold et al. (2014); Lakhali et al. (2006)	5-point Likert Scale	Adapted
2	Organizational Culture	Dubey et al. (2017)	5-Point Likert Scale	Adapted
3	Operational Performance	Zhang and Yang (2016); Kafetzopoulos and Gotzamani (2014)	5-Point Likert Scale	Adapted

A five-point Likert scale was used, ranging from strongly disagree (as 1), disagree (as 2), neutral (as 3), agree (as 4), and strongly agree (as 5). The unit of

analysis was SME, and the respondents were Owners/Managers of the SMEs. Purposive with snowball techniques were used to select the

respondents, as consistent with previous studies related to SMEs in Pakistan (Hyder and Lussier, 2016; Wahga et al., 2018). A total of 302 responses were collected from the food processing SMEs, among them, 14 incomplete responses were discarded from the data analysis and the final useful responses were 288.

3.1. Common method bias

Common method bias (CMB) is considered a threat to the validity of survey research therefore researchers need to consider this issue (Podsakoff et al., 2012). Harman’s single factor test was employed to examine the common method bias as suggested by Podsakoff et al. (2012). The result revealed that the CMB was not an issue in this study. Moreover, the non-response bias was also not an issue, as the data was collected by the researcher through face-to-face interaction with the target respondents.

3.2. Assessment of measurement model (outer model)

Partial least squares structural equation modelling (PLS-SEM) is considered the most suited data analysis tool to examine the relationship between constructs (Hair et al., 2017). The study aims to examine the impact of leadership in operational performance and organizational culture, and also examines the mediating role of

organizational culture in a relationship of leadership and operational performance, therefore, PLS was used to test the hypothesized relationships. Two main criteria are used for assessment in PLS analysis, 1) measurement model, and 2) structural model. Reliability and validity are the main criteria’s in assessing a measurement model, (Ramayah et al., 2011).

In the first stage, the measurement model was evaluated for the convergent validity, which was examined through the factor loadings, composite reliability (CR), and average variance extracted (AVE) (Hair et al., 2017). A value of 0.6 and above is recommended for factor loadings (Chin, 1998). The values of 0.7 and above for composite reliability, 0.5 and above for the AVE, are suggested for an adequate convergent validity (Hair et al., 2017). All latent variables involved in this study fulfilled desired criteria as shown in Table 2 and Fig. 2 that have been obtained from PLS-Algorithm.

Discriminant validity is assessed through the Fornell-Larcker criterion and Heterotrait-Monotrait Ratio (HTMT). In the Fornell-Larcker criterion, the square root of the AVE of each latent variable should be greater than its correlation with other latent variables as recommended by Fornell and Larcker (1981). The results in Table 2 revealed that the square root of AVE was greater than its correlation with other latent variables.

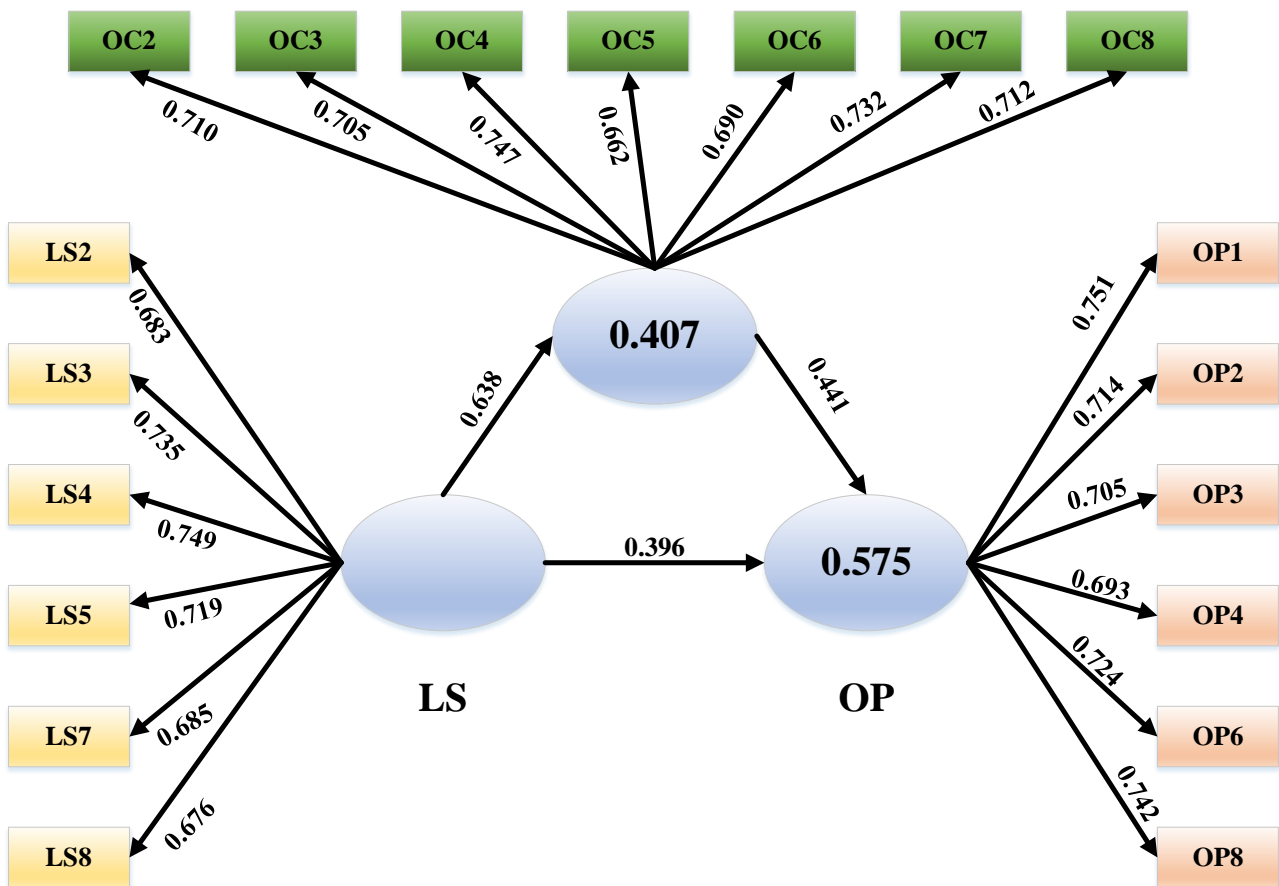


Fig. 2: Measurement model through PLS algorithm

Table 2: Fornell-Larcker criterion

Constructs	CR	AVE	OC	OP	OC
Leadership	0.858	0.502	0.708		
Organizational Culture	0.876	0.502	0.638	0.709	
Operational Performance	0.867	0.521	0.678	0.694	0.722

Note: CR=Composite Reliability, AVE= Average Variance Extracted, bolded items are the square root of AVE

The latest criterion to assess the discernment validity is called Heterotrait-Monotrait Ratio (HTMT), which was introduced by Henseler et al. (2015). This recent approach shows the estimation of the true correlation between two latent variables. A threshold value of 0.85 has been suggested for HTMT (Henseler et al., 2015), above 0.85 shows a lack of discriminant validity. Table 3 shows all values are below the threshold, thus HTMT criterion has been fulfilled for our measurement model.

Table 3: HTML criterion

Constructs	LS	OC	OP
Leadership			
Organizational Culture	0.776		
Operational Performance	0.832	0.839	

3.3. Assessment of structural model (inner model)

After the establishment of validity and reliability in the measurement model, the second step in PLS-SEM is to analyze the structural model. The most commonly used measure to evaluate the structural model is the coefficient of determination R2. The R2 value represents the combined effect of the exogenous latent variables on the endogenous variables. In this study, the value of R2 was 0.575, which suggests that the model variable can explain 57% of the variance of the dependent variable, which is substantial (Hair et al., 2017). Furthermore, to obtain the t-values, p-values, and to demonstrate the all-path coefficients (β), bootstrapping procedure with 5000 replications, and a two-tailed approach was employed, as recommended by Hair et al. (2017). The results of hypothesis testing are presented in Table 4 and Fig. 3.

Hypotheses 1 stated that leadership was significantly related to operational performance, the results found a significant relationship between leadership and operational performance (β=0.396; t=6.550; p<0.000). Thus, H1 is supported.

Hypotheses 2 stated that leadership was significantly related to organizational culture, the results show that leadership was significantly associated with organizational culture (β=0.638; t=12.016; p=0.000). Thus, the H2 hypothesis is accepted.

Hypotheses 3 stated that organizational culture was significantly related to operational performance, the results revealed that organizational culture was significantly associated with operational performance (β=0.441; t=7.359; p=0.000). Thus, the H3 hypothesis is also supported.

3.4. Mediation test

A mediation test is conducted to discover if a mediator construct can significantly carry the ability of an independent variable to a dependent variable (Ramayah et al., 2011). Following the guidelines of Preacher and Hayes (2008), for mediation analysis, we used bootstrapping with 5000 replications, with a two-tailed approach, to test the mediation effect of organizational culture in between leadership and operational performance in food processing SMEs of Punjab, Pakistan. The results in Table 5 shows that organizational culture mediated the relationship between leadership and operational performance (β=0.281; t=5.633; p=0.000), thus H4 is supported.

4. Discussion and conclusion

4.1. Demographics of respondents and SMEs

Amongst the 288 SMEs, 45 were working on the partnership, 173 were working on sole proprietorship, 7 were registered as public limited, and 63 were registered as private limited. Out of 288 SMEs, 137 were involved in food processing, 77 were involved in beverage processing, and 74 SMEs were manufacturing both food and beverage products. Amongst the 288 respondents, 102 were from the quality department, 27 from the engineering department, 83 from the production unit, and 76 were the Owners/Managers. Out of 288 respondents, 89 had 1-5 years experience, 80 had 6-10 years experience, 67 had 11-20 years and 52 had more than 20 years experience in SMEs. The results revealed that top management people were qualified and experienced.

Table 4: Hypothesis testing

Hyp:	Path	Path coefficient	Standard Error	T. Value	P. Values	Decision
H ₁	LS→OP	0.396	0.061	6.550	0.000	Supported
H ₂	LS→OC	0.638	0.053	12.016	0.000	Supported
H ₃	OC→OP	0.441	0.060	7.359	0.000	Supported

Table 5: Mediation test

Hyp:	Path	Path coefficient	Standard Error	T. Value	P. Values	Decision
H4	LS→OC→OP	0.281	0.050	5.633	0.000	Supported

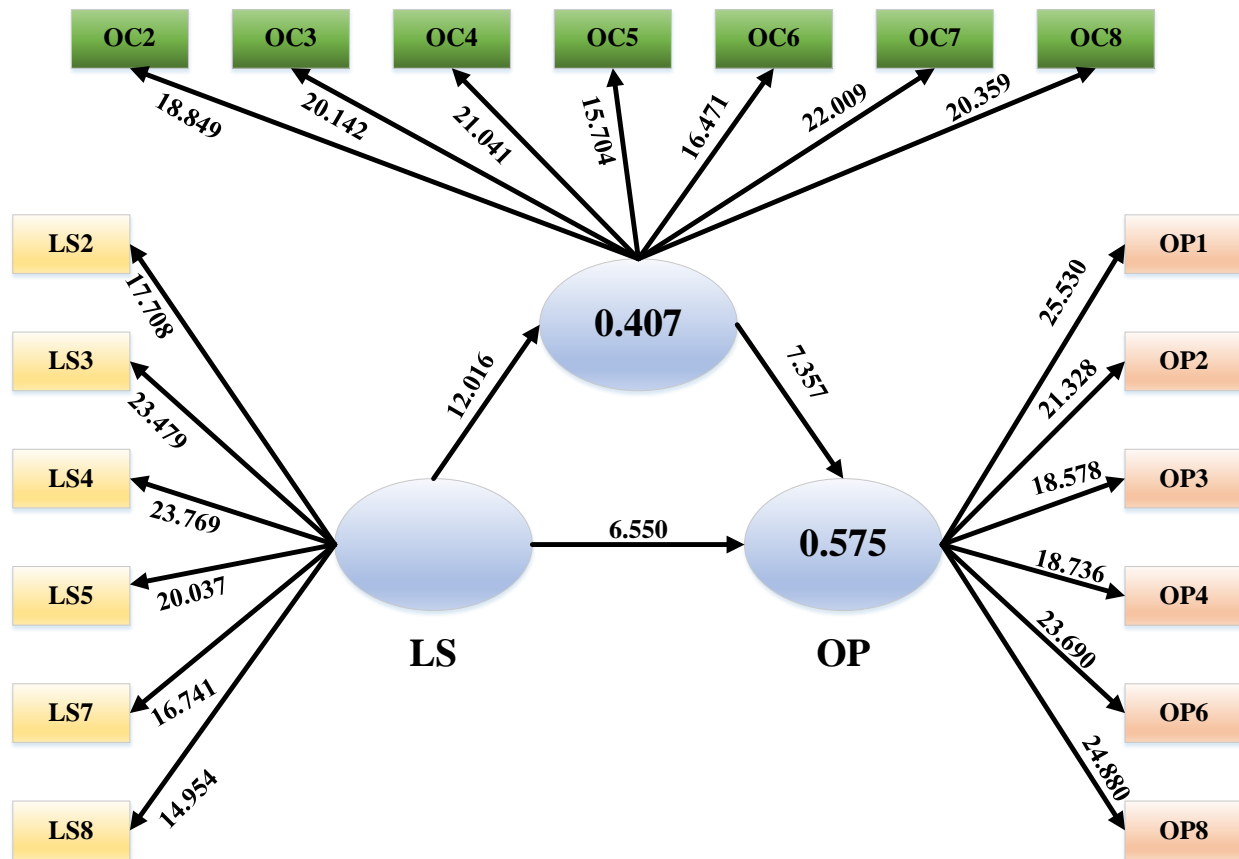


Fig. 3: Structural model

The results show a reasonably significant relationship between leadership and operational performance in food processing SMEs in Punjab, Pakistan. The results are consistent in previous literature (Ilkay and Aslan, 2012; Jabeen et al., 2015). Moreover, visionary leadership can improve organizational performance through teamwork, and by considering employees' suggestions for continuous improvements. Likewise, by arranging professional skill development training, active involvement of all the stakeholders, organizations can get a competitive advantage. According to Ogebeibu et al. (2018), the benevolence by top management leaders a work environment characterized as supportive, comfortable, trusting, and respectful. Therefore, a kind behavior by the top management gives confidence and a positive impact to the employees.

This study also tested the relationship between leadership and organizational performance and found a significant relationship. The study results are in line with previous studies (Block, 2003; Burke and Litwin, 1992). Organizational culture has a positive impact on organizational performance, and a high level of organizational performance is generally linked to an effective culture. Therefore, organizational performance is a sign of the capacity of a company to efficiently achieve independent goals. Furthermore, the study also examined the relationship of organizational culture and operational performance in food processing SMEs and found a significant relationship between organizational culture and operational performance.

Previous studies such as Rashid et al. (2003), Pinho et al. (2014), and Scholz (1987) also found a significant relationship between organizational culture and organizational performance.

The results show that organizational culture mediates the relationship between leadership and operational performance in food processing SMEs in Pakistan; the results are consistent with the study of Pradhan et al. (2017). Leadership and organizational culture were found as significant key drivers for the success of any organization. The global competition amongst organizations is increasing rapidly; hence to become competitive, the organizations need to improve their operational, financial, and environmental performance. The results revealed that, by practicing transformational leadership styles and adopting a quality culture, organizations can get a competitive advantage. Since both leadership and organizational culture are key factors and have a significant impact on organizational performance.

5. Limitations

Though this study has collected data from one province, the Punjab province, it's still relevant in identifying the mediating role of organizational culture on the relationship between leadership and operational performance in food processing SMEs.

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Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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