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## Performance of Public Universities in Pakistan: Mediating Role of Cultural Factors

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**Abstract:** The main objective of the current research is to assess the mediating role of organisational cultural between entrepreneurial orientation, structural factor and performance of public universities. The contribution of universities in the development of any country is an undeniable fact. The previous studies emphasised on such aspects, as structural factors that affect universities performance but the role of cultural factors have been ignored. The current study explores cultural factors as mediating variable between structural factors, entrepreneurial factors and performance of public universities. The current research applied a combination of qualitative and quantitative methods. We developed, through an in-depth desktop research, a questionnaire that was distributed by mailed/postal survey to the randomly selected 415 respondents working in Pakistani public universities. The collected data was analysed using structural equation modelling (SEM) with the help of SmartPLS 3.2.7, a widely used data analytical tool. Our study finds that cultural factors significantly mediate the relationship between structural factors, entrepreneurial factors and performance of public universities. The university management at different level is expected to enhance competencies of conducting high quality teaching, research and contribution to wider society through utilisation of scarce resources and creating a congenial cultural environment to maximize outcome from the available strength and opportunities and overcome the weakness and challenges. The findings and recommendations are expected to add value to the current body of literature in the higher education and particular value addition will be for the Pakistani universities.

**Keywords:** mediate, performance

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### INTRODUCTION

The role of education, especially higher education is significant in determining the future growth and prosperity of any country. The skilful intellectuals produced by universities and higher education institution act as a strategic asset of the country. This is the reason; higher education has been recognised as an important factor in the stability and prosperity of a nation (Bosetti & Walker, 2010). The quality of education provided by the higher education institutes depends on the quality of services provided to students and the quality of graduates produced by the university (Naidu & Derani, 2016).

Global university rankings; such as Times Higher Education (THE), Shanghai Jiao Tong University; 'have cemented the notion of a world university market arranged in a single "league table" for comparative purposes and have given a powerful impetus to intranational and international competitive pressures in the sector' (Marginson & van der Wende, 2007). In the past few years the ranking issued by THE, ranking of Pakistani universities is going down. THE ranking is based on criterion factors such as teaching, research, citation, international outlook and industrial linkages. In the year 2016-2017, there were 8 Pakistani universities among the top 1000 universities. In the year 2018, the number reduced to 4 and decrease further to 3 in the year 2019. This decreasing trend shows that the performance of universities is decreasing every year. In the current ranking, the contribution of public universities is very insignificant and invisible. These performance-related issues urge a need to investigate the factors that influence the performance of public universities in Pakistan. To investigate further, we need to give a brief at the ranking. Regarding the THE 2019 ranking, the website states "It is the only global university performance table to judge research-intensive universities across all of their core missions: teaching, research, knowledge transfer and international outlook. We use 13 carefully calibrated performance indicators to provide the most comprehensive and balanced comparisons, trusted by students, academics, university leaders, industry and governments". THE provides very comprehensive criteria for university ranking where all important aspects of university rating such as teaching, research publications, citations, international outlook and industry income are few main criterions. THE 2019 ranking criteria are listed in Table 1.

**Table 1. University Ranking Criteria of THE (The Higher Education)**

Overall indicator	Individual indicator	Percentage weighting
Teaching – the learning environment (30%)	Reputation survey	15%
	Staff-to-student ratio	4.5%
	Doctorate-to-bachelor’s ration	2.25%
	Doctorates-awarded-to-academic-staff ratio	6%
	Institutional income	2.25%
Research (volume, income and reputation) – 30%	Reputation survey: 18%	18%
	Research income: 6%	6%
	Research productivity: 6%	6%
Citations – research influence (30%)	Citation impact (normalised average citation per paper)	30%
International outlook (staff, students, research) – 7.5%	Proportion of international students	2.5%
	Proportion of international staff	2.5%
	International collaboration	2.5%
Industry income (knowledge transfer) –	university’s ability to help industry with innovations, inventions and consultancy	2.5%
Total		100%

Source: The table is prepared from the THE 2019 Ranking website

The table displays the teaching and research environment which we broadly term ‘culture’ for this research. The universities in Pakistan were failed to maintain a good teaching-learning environment, the lack of published research in reputable journal, less citation of research work produced by affiliated university staff, poor international outlook and lack of attention towards industrial projects to increase income of universities and to transfer knowledge to industries that can enhance overall production. It can be argued that although there is availability of infrastructure, students and opportunities for enhanced performance, Pakistani universities failed to perform up to the standard of THE. This notion raised the question what are the factors that can potentially influence the performance of higher education institutes or public universities.

Typically, performance has remained a major area of focus for businesses (e.g., Lee et al., 2019; Mihardjo et al., 2020; Mohd & Ibrahim, 2020; Bakytgul, Ahmed & Kim, 2019; Ahmed et al., 2017). Through literature review, we notice that various factors influence the performance of higher education institutes or universities (Khalid et al., 2019). For example, intellectual capital (Angraini, Hamid & Kassim, 2017); structural factors, environmental factors (Nayyar & Mahmood, 2014); cultural factor (Bodla, Ali & Ali, 2013; Nayyar & Mahmood, 2014); market orientation (Al-Swidi & Mahmood, 2013; Khalid, Ismail, Ismail & Malik, 2016) in the relevant context. The literature showed that entrepreneurial orientation also has been reported as a significant factor that influences organisational performance (Al-Swidi & Mahmood, 2013; Khalid et al., 2016). Where, review of literature refers entrepreneurial orientation as strategy-making procedures and smartness of an organization, which assist the organization in entrepreneurial activities (Lumpkin & Dess, 2001). Entrepreneurial orientation (EO) has been suggested as an essential attribute of high performing organisations (Covin & Slevin 1988; Lumpkin & Dess, 2001; Lee & Peterson, 2001).

In addition to that, structural factors have a significant factor that determines organisational performance (Aluko, 2003; D’Costa et al., 2013). As structural flexibility provides employees with a conducive work environment in the public sector and also encourages them to adopt and exhibit innovative behaviours, in contrast to traditional bureaucratic behaviours (Kim, 2010).

Moreover, in organisational performance apart from the structural performance and entrepreneurial orientation, cultural factors been identified as an important construct to define the performance of organisations. For instance, Bodla et al. (2013) reported significant influence of culture on organisational performance. Nayyar and Mahmood (2014) similarly documented positive impact of organisational culture on organizational performance of universities. The entrepreneurial culture is characterised by high levels of risk-taking, dynamism, and creativity. One apparent attribute of this culture is that it creates change, rather than just quickly reacting to changes in the environment (Rosique-Blasco et al., 2016). This is the reason this variable has been used by various researcher as independent variable and as an intervening variable (Al-Swidi & Mahmood, 2013). As Gallagher, Brown and Brown (2008) acknowledged that in order to achieve superior performance organisational culture is a key driver. Organisational culture is a critical factor that set the standard as a set of key values, understanding and develops a conducive working environment where employees contribute towards organisational performance (Appiah-Adu & Blankson, 1998; Goodman, Zammuto & Gifford, 2001). Moreover, the assumption about the type of organisational culture that can lead superior performance act as main sources of interest in organisational culture research (Rose et al., 2008). By keeping in mind the key role of organisational culture in organisational performance, the study identified that previous literature does not include organisational culture as explaining variable that can enhance the relationship between antecedents of

performance and performance of public universities. In order to fill the identified gap, the current research proposed that all the effect of entrepreneurial orientation and structural factor on the performance of public universities should be tested indirectly through organisational culture. Thus, the main objective of the current research is to assess the mediating role of organisational cultural between entrepreneurial orientation, structural factor and performance of public universities.

### **Relevant Literature**

This section provides a review of relevant literature on the relationship between entrepreneurial orientation, structural factors, cultural factors and performance of public universities. Moreover, this section provides relevant arguments in support of the mediating relationship of cultural factors between entrepreneurial orientation, structural factors and performance of public universities.

### **Entrepreneurial Orientation and Performance of Public Universities**

Entrepreneurial orientation actually refers to strategy-making procedures and smartness of an organization, which assist the organization in entrepreneurial activities (Lumpkin & Dess, 2001). Entrepreneurial orientation (EO) has been suggested as an essential attribute of high performing organisations (Covin & Slevin 1989; Lumpkin & Dess, 2001; Lee & Peterson, 2001). These studies suggest that EO dimensions have positive impacts on organisational performance. Wiklund and Shepherd (2005) applied a configuration approach to investigate the relationship between EO dimensions of innovativeness, risk-taking, and pro-activeness to measure organisational performance in the public sector. Results showed that EO positively influences organisation performance. Wiklund and Shepherd (2003) focused on the relationship between knowledge-based resources, EO and performance. They emphasized that EO can positively affect organisational performance if there are enough knowledge-based resources.

On the other hand, Kreiser et al. (2002) and Lumpkin and Dess (1996) claimed that dimensions of EO can vary independently of each other. Particularly, a strong positive relationship between EO and performance is found in dynamic and hostile environments (Brouthers, Nakos & Dimitratos, 2015; Covin & Slevin, 1989; Dess & Beard, 1984; Miller, 1988; Zahra, 1993). High EO is closely related to first-mover advantages and the tendency to take advantage of emerging opportunities, which ultimately has a positive influence on performance (Wiklund, 1999). Wang (2008) surveyed public sector institutions of UK in order to investigate the relationship between EO, learning orientation (LO) and organisation performance. The findings of this study suggest that EO is important for performance. Furthermore, Caruana, Ewing and Ramaseshan (2002) who studied the relationship between EO and Organisational performance in Australian public sector organisations also found a positive relationship between these two variables.

Some studies gave evidence that EO in the public sector can positively influence innovation and pro-activeness, which can further enhance the performance of an organisation (Naldi, Nordqvist, Sjöberg & Wiklund, 2007). Bartlett and Dibben (2002) studied public entrepreneurship in the public sector and proved that innovation in the organisation can improve its performance as innovation has a strong positive association with Entrepreneurial Orientation. Nevertheless, most of the literature tends to leads to highlight the positive effects of EO on organisational performance, so this study is inclined to support these empirical findings and proposed the following hypothesis:

Hypothesis 1: Entrepreneurial Orientation has a significant positive relationship with performance of public universities.

### **Structural Factors and Performance of Public Universities**

Structural factors are regarded as an important determinants of organisational performance. The performance of an entrepreneurial venture is affected internally by factors that are individual factors and externally by environmental factors which are available in surroundings. Nayyer (2012) observed that managerial, cultural and environmental factors predict the performance, while the full impact of corporate entrepreneurship as a moderating variable was found on the link between managerial factor and performance outcome. Organisation's structure delivers a framework to organisation, which can be followed to succeed in a specific strategy. Researchers explained the organisational structure in an organic way rather than mechanistic way (Antonicic & Hisrich, 2001). Different researchers investigated and proposed that innovativeness in a sector and its well-organised structure can enhance the performance (Zaheer & Bell, 2005). OECD countries are also transforming their structure to enhance the efficiency of the public sector (Curristine, Lonti & Joumard, 2007). Structural factors are composed of different substructures. These structures include organisational, institutional, regulatory and legal structure. These structural factors can be applied to any country (Wanna et al., 2010) and can improve the performance of public sectors as they rectify the issues relating to accountability and responsibility in a workplace (Hawke, 2012). D'Costa et al. (2013) reported a significant influence of structural factor and performance, which has been used in current research as an evidence to support the proposed hypothesis. Aluko (2003) also incorporate organisational structure and documented a positive relationship between organisational

structure and organisational performance. Based on the above arguments, this current study proposed a direct hypothesis from the independent variable to dependent variable. The proposed hypothesis for this current study is as follows:

**Hypothesis 2:** Structural factors will have a significant positive relationship with performance of public universities.

### **Cultural Factors and Performance of Public Universities**

Martins and Terblanche (2003) documented culture in an internal organisational environment, which backs up the entrepreneurial activities in the organisation (Zare & Shakeri, 2011). In addition to that cultural factors serve as an opportunity for new ideas and bring innovation in the organisation. These new ideas and innovation results in enhance efficiency of the organisation (Miron, Erez & Naveh, 2004). The unique features of organisational culture for instance, value creation, unique assets (human and machine) act as a source of competitive advantage for the organisation. This uniqueness differentiates the organisations from others and leads towards higher organisational performance (Noguera, Alvarez, & Urbano, 2013; Hayton, 2005). In addition to that Gibb (1988) mentioned that organisational culture can be serve as threat or opportunity for the organisation. The first real challenge for the large organisations is to identify appropriate needs for entrepreneurial behavioural. A conducive work environment where employees and organisations can jointly work for superior organisational performance. Within the context of organisations, specific needs can vary from one organisations to another depending on the nature of the organisations.

Similarly, Murphy, Cooke and Lopez (2013) explained that external environmental conditions can influence the internal operations and performance of organisations. The only way to manage is the strong organisational culture, where intensely held culture by members of organisation can begin to substitute for external environment from members' perspective. This strong cultural holding allow organisations to manage external factors in effective way.

In the review of literature, it has been noticed that superior performance (Shaikh et al., 2019), is results of an organisational culture (Umrani, Kura & Ahmed, 2018) where new ideas are supported, they are open and have efficient information sharing system. In addition, individual from entrepreneurial mind-set universities and colleges shaped organisational culture in such a way which is different from traditional HEIs (Kenny & Reedy, 2006). In perspective of Sørensen (2002) these factors contributes in making culture as deeply rooted element of organisations and pose strong impact on organisation. When environmental change strains organisational operations, culture have ability to create a unique way of adaptation with environment that help organisation to sustain the performance. In this way culture reflect the stability of the firm and adaptively with change with environmental changes.

Studies revealed that sustainable organisational culture has a positive impact on employee performance which can further lead to betterment in organizational performance (Dasanayake & Mahakalanda, 2008; Lok, Westwood & Crawford, 2005). Empirical evidence had also suggested that culture and performance are unrelated (Kim, Pindur & Reynolds, 1995). Wherein, some evidence can also be tracked outlining a significant positive relationship between cultural factors with organizational performance (Burt, 2000; Aluko, 2003). Based on the cited literature, it can argue that cultural factors significantly influence the performance of public universities. Following the discussion on various relationships in the previous studies, this current study formulated the following hypothesis.

**Hypothesis 3:** Cultural factors will have a significant positive relationship with the performance of public universities.

Review of literature shows that organisational culture has significant effects on performance Abdul Rashid, Sambasivan & Johari, 2003; Mannion, Davies & Marshall, 2005). Moorman (1995, p. 320) stated that that culture affects the organisation in two ways in terms of outcomes and the means to achieve these outcomes which include organisational structure and processes. Moreover, organisational structure is a cognitive map which guides an organisation about the mechanism, norms and values that members need to follow and internalise as part of their work life (Jones, 1983). Issa and Haddad (2008) suggested that proper organisational culture bring motivation among employees, proving them the incentive and enhance mutual interest. The organisational cultural aspects shape the way in which employees think, make decisions, how they perceive, feel and act (Lok & Crawford, 2004).

Rose, Kumar, Abdullah and Ling (2008) indicated that a high degree of organisation performance is where; there exists a culture of a well-integrated and effective set of values, beliefs, and behaviours. Culture influences the creativity and innovation relationship and effects the generation of creative ideas and conversion of these ideas into innovative products (Rosenbusch et al., 2011). The culture of countries across the border and define the level of development of any country. For example, as per Hofstede-Insights, Pakistan is a country with a high score of uncertainty avoidance index (70) which indicates that Pakistani's are risk avoidant (Hofstede, 2001). This risk avoidance represents the rigid codes of belief and intolerant towards risky and innovative ideas in Pakistan. On the other aspects of organisational culture, there is a restriction on the implementation of new

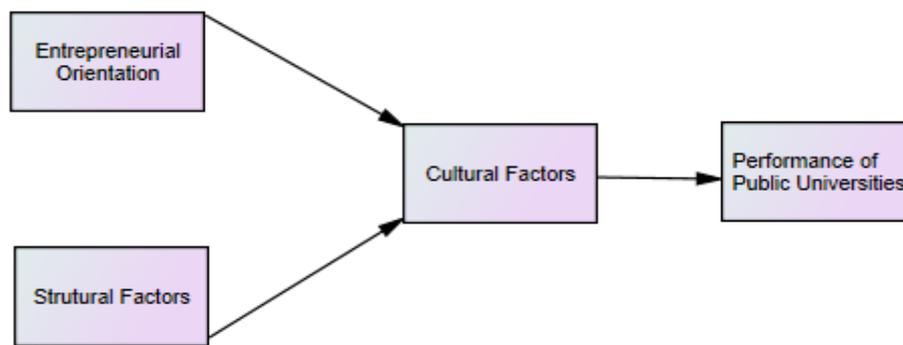
ideas. Organisational culture act as transmitter or filter that allow the structural and other changes in the organisations. Even the structural factors and entrepreneurial orientation is among the universities, it is believed these factors can influence organisational performance through cultural factors.

Despite the significant relationship that has been presented between organisational factors and organisational performance with a different perspective and in a different field. There is a missing link that has been identified from the past literature which is mediating role of cultural factors. This study addressed the fragmented concepts and frame in a university performance context and proposed mediating role of cultural factors between entrepreneurial orientation, structural factors and organisational performance of public universities. The following hypotheses have been formulated based on review of the literature and above discussion.

**Hypothesis 4a:** Cultural factors will mediate the relationship between entrepreneurial orientation and performance of public universities.

**Hypothesis 4b:** Cultural factors will mediate the relationship between structural factors and performance of public universities.

The framework of the current research is given below



**Fig.1:Research Framework**

### **Data and Methodology**

The current research aims to examine the mediating role of cultural factors between structural factors, entrepreneurial orientation and performance of public universities. The data of the current research was collected from 415 head of department from 94 public universities in Pakistan using random sampling. A total of 570 questionnaire were sent to the respondent using mailed survey method. The mail survey was complemented with continuous follow up through telephone calls and reminders, 415 questionnaires were received indication a response rate of 72.8%. The collected data was coded in SPSS and descriptive statistics were obtained. The preliminary data analysis was performed to assess and identify any missing values, outliers detection and assumptions of multivariate data analysis (normality, multicollinearity and singularity, linearity, homoscedasticity). The early results show that the data holds the assumptions of multivariate data analysis and can be further progressed. In the next step, hypothesis testing was performed using structural equation modelling with the help of SmartPLS 3.2.8. A widely used tool to analyse and assess all types of models including complex models. In this research, the mediating role of cultural factors has been assessed using SmartPLS.

### **Structural Equation Modelling using SmartPLS**

In the management research, SEM-PLS is a widely used technique which allows the data analysis of complex model in an easy and friendly manner. This research follows a two-step approach suggested by Henseler, Ringle, and Sinkovics (2009). In which the first step assess reliability and validity of the used measure (measurement model) and second step test the proposed hypothesis (structural model).

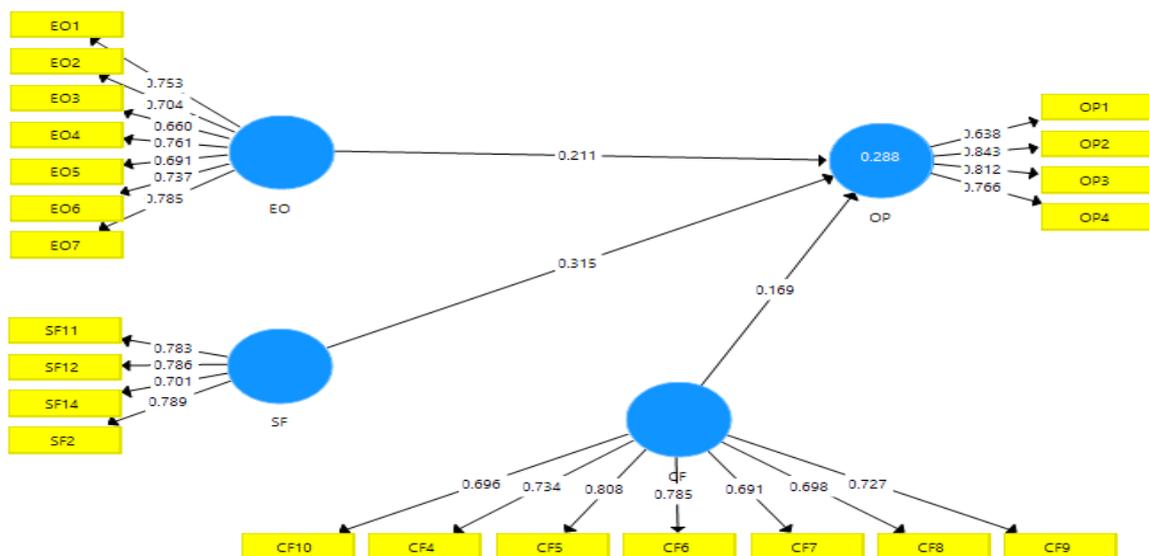
### **Assessment of measurement model**

Measurement model has been used to determine individual item reliability, internal consistency, convergent validity and discriminant validity. In reliability analysis Hair, Sarstedt, Hopkins and Kuppelwieser (2014) provide a rule of thumb in which the items with factor loading between .40 and .70 can be retained for further analysis. In the current research, the retained items have factor loadings between 0.638 and 0.843, which is above threshold level. Moreover, the average variance extracted values for all constructs also above 0.50, for instance, entrepreneurial orientation (0.531), structural factors (0.586), cultural factors (0.541) and organisational performance (0.591). The value of composite reliability (CR) was suggested by Bagozzi and Yi

(1988); Hair et al., (2011) as above 0.70. The current study meets the threshold level given by the previous researcher. On the basis of reliability analysis, it can be concluded that the measurements used hold the acceptable level of reliability as given in Table 2 and Figure 2.

**Table 2- Measurement Model**

Construct	Factor loadings	AVE	CR
<b>Entrepreneurial Orientation</b>			
EO1	0.753		
EO2	0.704		
EO3	0.660	0.531	0.887
EO4	0.761		
EO5	0.691		
EO6	0.737		
EO7	0.785		
<b>Structural Factors</b>			
SF11	0.783		
SF12	0.786		
SF14	0.701	0.586	0.850
SF2	0.789		
<b>Cultural Factors</b>			
CF4	0.734		
CF5	0.808	0.541	0.891
CF6	0.785		
CF7	0.691		
CF8	0.698		
CF9	0.727		
CF10	0.696		
<b>Organisational Performance</b>			
OP1	0.638		
OP2	0.843	0.591	0.851
OP3	0.812		
OP4	0.766		



**Fig.2: The measurement model**

In order to assess the validity of the measurements used, the previous researchers suggested Fornell and Larcker (1981) criteria. In which to assure discriminant validity the square root of the AVE should be higher than the correlations among the latent variables. This method is known as Fornell and Larcker (1981) and as per the criterion square roots of all constructs are higher than the correlation among the latent variables. The results indicate that the measurement used in the current study hold discriminant validity as shown in Table 3.

**Table 3.Discriminant Validity**

	CF	EO	OP	SF
CF	0.735			
EO	0.503	0.728		
OP	0.428	0.362	0.769	
SF	0.483	0.208	0.441	0.766

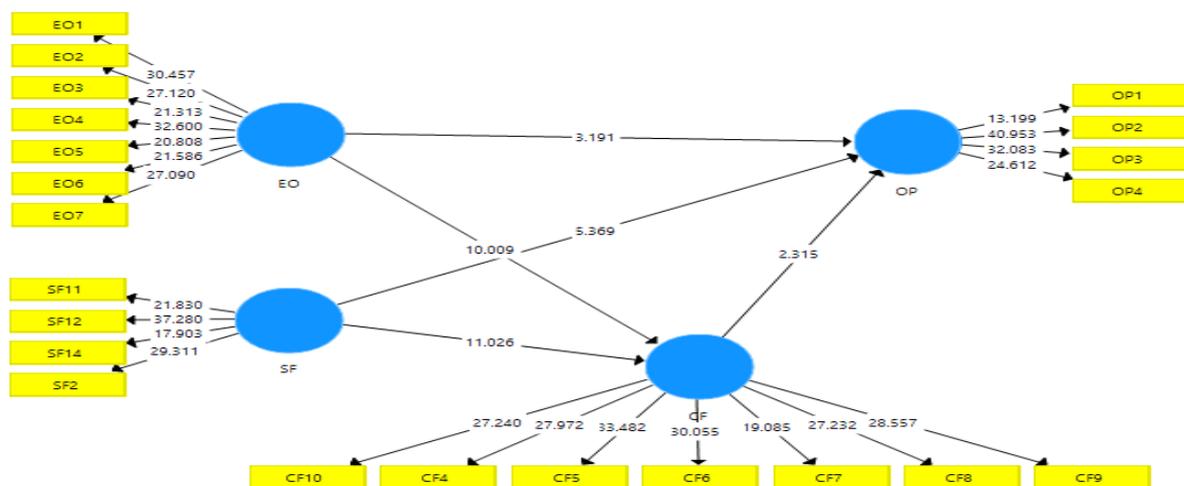
**Hypotheses Testing**

After the satisfactory results of the measurement model in terms of the reliability and validity of the measurements used in current research. This study assessed the proposed hypothesis using a structural model with bootstrap 1400. The results indicate entrepreneurial orientation has a significant positive relationship with performance of public universities (H1;  $\beta=0.204$ ,  $p<0.001$ ). The results further revealed that structural factors have a significant positive relationship with performance of public universities (H2;  $\beta=0.312$ ,  $p<0.000$ ). Moreover, the results show that cultural factors have a significant positive relationship with performance of public universities (H3;  $\beta=0.170$ ,  $p<0.021$ ). The findings provide support to H1, H2 and H3.

In addition to that H4a proposed that cultural factors mediate the relationship between entrepreneurial orientation and performance of public universities. The mediation analysis shows that cultural factors significantly mediates the relationship between entrepreneurial orientation and performance of public universities (H4a;  $\beta=0.072$ ,  $p<0.015$ ) and support H4a. Moreover, the mediation analysis revealed that cultural factors mediate the relationship between structural factors and performance of public universities (H4b;  $\beta=0.069$ ,  $p<0.031$ ). The results of hypotheses testing are given in Table 4 and Figure 3.

**Table 4. Hypothesis Testing**

Hypotheses	Relationship	$\beta$	t-value	P	Decision
H1	EO $\rightarrow$ OP	0.204	3.191	0.001	Supported
H2	SF $\rightarrow$ OP	0.312	5.369	0.000	Supported
H3	CF $\rightarrow$ OP	0.170	2.315	0.021	Supported
H4a	EO $\rightarrow$ CF $\rightarrow$ OP	0.072	2.424	0.015	Supported
H4b	SF $\rightarrow$ CF $\rightarrow$ OP	0.069	2.164	0.031	Supported



**Fig.3:The structural model**

**DISCUSSION**

The findings of the current research show that entrepreneurial orientation has a significant positive relationship with performance of public universities. The findings are in line with the results of previously conducted research in the related area. For example, Wiklund and Shepherd (2005) reported that entrepreneurial

orientation significantly influences organisational performance. Similarly, Al-Swidi and Mahmood, 2013; Khalid et al., (2016) also supported entrepreneurial orientation as a significant determinant of performance. In line with the findings are literature, the current study argued that entrepreneurial orientation is the significant factor that determines the performance. As entrepreneurial orientation is the strategy-making procedures and smartness of an organization that lead towards business activities. This is the baseline which urges organisations to be more successful and perform better than others. It is suggested public universities should develop a higher level of entrepreneurial orientation that will lead to a higher level of performance.

Furthermore, the findings revealed that structural factors have a significant relationship with performance of public universities. The review of literature provided support to the notion that structural factors significantly influence organisational performance which is performance of public universities in current research. Aluko (2003); D'Costa et al. (2013) documented significant influence of structural factors on organisational performance. Similarly, Kim (2010) argued that structural flexibility is essential in an organisational which provide a conducive work environment to employees. These flexibilities in structure urge employee to adapt and come up with innovative ideas that can increase the performance of an organisation. In the context of public universities, there should be some structural flexibilities in the system that can provide a way towards higher performance. In line with the results of the data, the Pakistani public universities have the propensity to take risk, be innovative and express pro-activeness during the decision-making process by adopting standard rules and regulations. Hence it can be stated that the structural factors are vital and significantly related to the organisational performance of public universities.

Moreover, the findings suggested that cultural factors have a significant relationship with performance of public universities. In the previous studies, cultural factors have been reported as significant factors that impact on the organisational performance. For instance, Bodla, Ali and Ali (2013) reported that there is a significant influence of culture on organisational performance. Similarly, Zare and Shakeri (2011); Nayyar and Mahmood (2014) and Noguera, Alvarez and Urbano (2013) and Carlos Pinho, Paula Rodrigues and Dibb (2014) also reported similar results and supported the relationship between culture and organisational performance. It is argued that cultures that emphasise adaptability and detail orientation are significantly associated with higher performance. When individuals working in universities share consistent expectations about the importance of being detail oriented (e.g., emphasising the quality of teaching and research, paying attention to details), the universities will successfully implement their plans. In the context of the current research, it is suggested that cultural factors significantly influence the performance of public universities and the administrative department should pay attention to create a culture that is more supportive in enhancing the performance of public universities.

The findings of mediating analysis showed that there is significant mediating role of cultural factors between entrepreneurial orientation and performance of public universities. The findings provide empirical support to the proposed hypothesis. In the review of literature, Rose, Kumar et al. (2008) explained culture as a main factor behind the performance and argued that in the presence of well-integrated and effect set of value and belief system, there are more chances of higher performance. The degree of integration and set of predefined values are standard for achieving a higher level of performance. Moreover, culture is a factor that assists in the creation of innovative and creative ideas and support in the process of converting innovative ideas into viable products (Rosenbusch et al., 2011). In the context of public universities, the concept of cultural factors is a key to enhance the performance of public universities. The cultural values and standard set by universities should be well-integrated among the staff members to foster creativity and innovation. Normally in the publicsector, the typical set of values have been followed throughout the years and these values unable to bring a higher level of organisational performance. It can be suggested that public universities in Pakistan can get higher performance with an entrepreneurialmindset and allow these ideas through the cultural factors in order to get the desired performance results.

Additionally, the findings also support the mediating role of cultural factors between structural factors and performance of public universities. These findings are unique in nature where the cultural factors facilitate the relationship between structural factors and performance of public universities. In the presence of a supportive culture, the responsibilities and power will be shared among the members of the organisation effectively. Work allocation and procedure will be proper in an organised way, decision-making power should be provided to university staff in order to be more innovative and creative. In Pakistani public universities, there is cultural of risk avoidance and power sharing. In this situation, a culture of risk-taking and power-sharing should be developed to increase the performance of public universities. Structural flexibility in presence of risk-taking and power-sharing culture can have a stronger influence over the performance of public universities. In this way, culture can act as a social control system that can foster the influence of structural flexibility and convert its performance boosting mechanism and enhance public university performance.

## CONCLUSION

In a developing country like Pakistan where resource is scare, the university management at different level is highly expected to uplift their competencies and performances of conducting high quality teaching, research and

contribution to the wider society including industries. This can be achieved among others through utilisation of their scarce resources and creating a congenial cultural environment for conducting high quality teaching and research and engagement with industry to maximize outcome from the available strength and opportunities and cope up with identified challenges. Based on the findings of current research, we conclude that public universities, particularly in Pakistan, should develop a strong entrepreneurial orientation suitable for high quality teaching, research, innovation and contribution to wider society. This can be done through the identification and utilisation of strength and opportunities and building entrepreneurial capacity and promote entrepreneurial actions. Structural flexibility should provide room for the examination and establishment of new ideas and their transformation into an innovative product that can be beneficial for university and wider society. In the presence of entrepreneurial orientation and structural flexibility, there is a need to develop and promote a culture which can transform these into performance boosting mechanism. A culture of risk-taking, appreciation and power-sharing can enable to foster the innovation and entrepreneurial activities among universities and enhance their overall performance.

### **Implications**

The findings of current research infer various implications that are useful for management, practitioners and future researchers in the higher education sector. This study provides a mechanism on how to foster an environment or culture that enhances the performance of public universities in general and particularly in Pakistan. Apart from confirming the role of entrepreneurial orientation and structural factors on the performance of public universities, the current research proposed and empirically tested the mediating role of cultural factors between entrepreneurial orientation, structural factors and performance of public universities. This research furnishes details on how cultural factor transmit the effect of entrepreneurial orientation and structural factors on the performance of public universities. Based on the findings, we strongly urge the management at different levels to promote entrepreneurial mindset among the public universities and some structural flexibility that can foster high quality teaching, research, innovation and entrepreneurship. Moreover, public universities should focus on building strong cultural believes among employees by power sharing and promoting risk-taking behaviour among university employees. Entrepreneurial orientation, structural flexibility and supportive culture can provide facilitation conditions to enhance the performance of public universities.

### **Limitations and future research direction**

Along with offering a contribution to the field of knowledge and practical implications for policymakers, the current research contains some limitations that can be overcome by future researchers to extend the current research framework. This research only assessed the influence of entrepreneurial orientation, structural factors and cultural factors on the performance of public universities. The future researcher may include more explanatory variables such as social capital, entrepreneurial mind-set, entrepreneurial training on innovation that can enhance the prediction power of the model. It is suggested that the influence of funding, training on innovation, leadership styles can be added in the model to cover more aspect that can enhance public university performance.

The current research tested the effect of only one mediator which is cultural factors. The research model can be extended by providing more mediating or moderating factors that can increase the predictability of performance of public universities. Despite the identified limitations, it can be said that the findings of current research provide some useful insights and directions for practitioners and researchers in the field of management decision in higher education.

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