Error Management Culture and its impact on organizational performance: A moderated mediation model

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Abstract
Errors are ubiquitous in organizational life and have both positive and negative consequences for organizational performance. Given its importance, we have developed a moderated mediated model to analyze the impact of organizational error management culture on organizational performance by extending error management and share cognition theory. The newly developed model was tested in the service industry of Pakistan. The sample size of the study was 300 employees with a response rate of 96%. The data was collected through a web-based questionnaire. The constructs used in the study were adapted from earlier established scales and measures. Smart PLS was used to test the structural model. Consistent with our hypotheses, the results show that error management culture is positively related to organizational performance and this relationship is mediated by organizational learning from errors and innovative work behavior. The results further demonstrated that perceived psychological safety moderated the direct relationship between organizational learning from errors and error management culture in such a way that relationship is stronger when perceived psychological safety is high. The current study extends the relevant literature and has significant implications for management, theory, and research. For instance, perceived psychological safety in earlier studies has been used as a mediator while we have used it as a moderator. In addition, we tested multi mediation (i.e., organizational learning from errors and innovative work behavior) to empirically validate the relationship of error management culture and organizational performance

1. Introduction

In many ways, the organizational landscape has undergone dramatic changes in the last two decades. The rising dynamism, and complexity of the contemporary business environment couple with growing technological advancement poses new challenges and opportunities for effectively dealing with errors. Errors are rampant in every organizational life and potentially yield either negative or positive outcomes. Errors in organizations are defined as unintentional and potentially avertable aberrations from organizationally specific standards and goals (Frese and Keith, 2015). With a view to its importance for organizational performance, error literature in recent years has gained momentous growth and is thus regarded as a key phenomenon of burgeoning theoretical and managerial importance (Goodman et al., 2011).

Errors are prevalent in every organizational activity ranging from product development to service encounters and have certain negative ramifications such as decreased customer satisfaction, create negative publicity, damaged reputation, increase economic costs, elevating psychological stress, job dissatisfaction and in an extreme situation, it results in loss of human life (Zhao and Olivera, 2006). Errors are pervasive not only in various aspects of organizational life but also in the environment, economy, and public policy

Given the significance of errors, the organization has two complementary approaches for dealing with errors namely error prevention (error avoidance) and error management. The former approach takes errors as negative (Reason, 2000; Zhoa 2006) while the latter considers the error as valuable feedback for learning and focused on reducing the negative consequences arises from errors (Chillarege, Nordstrom, & Williams, 2003). In other words, error management approaches view errors as constructive- that can foster positive outcomes for organizations such as learning and innovation (Lei, Naveh, & Novikov, 2016).

 To implement error management approaches at the organizational level, it is incumbent to establish an error management culture. Error management culture refers to a shared set of norms and values that facilitate error identification, communication, and rectification (Van Dyck, Frese, Baer, and Sonnentag, 2005). Research in this area underlined the fact that error management culture is critical in reducing negative error outcomes (e.g., service interruptions, negative publicity, faulty products, lost human lives) and fostering positive error outcomes, including learning and innovation (Van Dyck et al., 2005). Learning from errors tends to produce several positive outcomes such as performance improvement (Cannon and Edmondson, 2001 ; Heimbeck, Frese, Sonnentag, & Keith, 2003).

Extending this line of research, organizational scholars argued that by reducing the interpersonal risks, the employees are more likely to learn from their errors (Zhan and Hample, 2016). In this respect, a concept of perceived psychology safety -perceptions of interpersonal risky behaviors (Kahn, 1990) seemed to be an important antecedent of organizational learning from errors (A. C. Edmondson, 2004)

In addition to organizational learning, error management culture may also yield new organizational innovation and processes (Cannon and Edmondson, 2005). It is worthy to note that there is an unexpectedly very limited number of studies on the relationship between innovative work behavior and organizational error management culture. Innovation refers to useful, creative, reliable, and implementable solutions(Argote and Miron-Spektor, 2011). Frese and Keith (2015) argued that innovation and error management culture are complementary to each other. For instance, during the process of exploration and experimentation, new types of errors are being generated (Hammond, Farr, and Sherman, 2011). However, if the organization exhibit error management culture, then efforts are being channelized to reduce the potential damages of errors and prevent the future occurrence of similar errors (van Dyck et al., 2005).

Since error management culture encompasses organizational practices related to detection, communication, sharing, and dealing with errors, it is proposed that organizational error management culture deciphers into positive organizational performance through multi -mediators such as organizational learning from errors and innovative work behavior that not only reduce negative error consequences but also increase positive outcomes of errors i.e., organizational performance. We further proposed perceived psychological safety as a moderator between organizational learning from errors and organizational error management culture.

To summarize, this study aims to answer the questions of whether error management culture affects organizational performance through organizational learning from errors and innovative work behavior. In this way, this study made some valuable addition to the relevant literature. First, by focusing on intervening variables, this study fills the significant research gap by delineating the relationship between error management and learning from errors and between learning from errors and innovative work behavior (Lei, Naveh, and Novikov 2016). Secondly, we advance our understanding that organizations that tolerate mistakes are likely to involve in learning behaviors, and thus add to the growing literature of organizational learning. Thirdly, previous studies on organizational error management culture have been extensively conducted in a high reliable organization such as aviation (Helmreich and Merritt, 2000), medicine (Edmondson, 2004), and manufacturing (Candranegara, 2015.), however less attention has been paid to the service sector that contributes 60 to 70% to GDP in many

economies(Coelho and Augusto, 2010). Therefore, this study attempts to fill this gap by focusing on service industries in Pakistan to enhance the generalizability of the results.

2. Literature Review
2.1 Theoretical background

Organizations are facing various types of errors (Vogus, Sutcliffe, and Weick, 2010). Errors are defined as the avoidable gap between expected and real state (Zhao and Olivera, 2006). Errors may generate potential negative outcomes for organizational life which consequently hampers its performance. Therefore, the study of organizational error merits on its own. Keeping in view the exponential growth of error literature, there is a growing interest of services scholars to investigate the impact of various dimensions of errors on the organizational performance (Guchait, Simons, and Pasamehmetoglu, 2016)

Error management culture is defined as a shared set of organizational norms and practices to collect, communicate, handle, and report error-related information. Share cognition theory proposes that high error management culture facilitates employees in recognizing and managing errors timely(Fiore and Schooler, 2004;Chiu, Hsu, and Wang, 2006). Under the error management culture, employees not only learn from their errors but also from others, which results in effective handling of errors (Mathieu, Heffner, Goodwin, Salas, and Cannon-Bowers, 2000; Cannon and Edmondson, 2001). Various scholars have studied the effect of organizational error management culture on employee's performance (Dimitrova, Van Dyck, Van Hooft, and Groenewegen, 2015). Accordingly, organizations with high management culture have an active mechanism of handling and managing errors by encouraging the employees to report the errors as they happen. While in organizations that have low error management culture, the employees in such organizations are punished and blamed for committing errors (van Dyck et al. 2005). Consequently, employees tend to conceal errors to avoid negative feelings such as shame, fear, and guilt (Zhao and Olivera, 2006).

In the same way, it was found that error management culture encouraged the employees to learn from errors and mistakes by understanding their causes or decrease the negative outcomes that arise from error (Reason,2000). Furthermore, it fosters the climate of innovativeness, exploration, and experimentation via ambidexterity (Van Dyck et al. 2005) a construct that referred to as experimenting and refining new and existing products/services that lead to better performance (Hülsheger, Anderson, and Salgado, 2009). Therefore, we can propose that error management culture can be regarded as an important antecedent of organizational performance in the service industry.

2.1.1 Error Management culture and Organization Learning from Errors

Research on learning from organizational errors has gained momentum in recent years (Harteis, Bauer, and Heid, 2012). Argyris, (1976) stated that organizational learning modified the individual behavior ('single-loop learning') or it can also modify an individual's values and norms underlying behavior ('double-loop learning). To enhance the organizational learning from errors, there must have a sound culture of accountability, inquiry (error identification, analysis, and rectification), and trust (interpersonal sharing of the error learning experience) among the employees (Ellis, Caridi, Lipshitz, & Popper, 1999)

Van Dyck et al. (2005) suggested that there is sharp contrast between error aversion culture (avoiding and concealing errors to reduce negative feelings) and error management culture (characterized by constructive handling and communicating about errors) that encourage an organization ability to learn from errors.

Argyris, (2017) argued that the process of learning comprises identification and rectification of errors, coupled with an active reflection on experience and experimentation. Moving further, learning from errors can drive transformative organizational and individual development(Tucker & Edmondson, 2003). Previous research suggested that error management culture encourages employees to learn by allowing errors to happen (Keith and Frese, 2011). Organizational learning is characterized as a continuous process of activities such as asking questions, pondering on results, sharing information, discussing errors, and seeking feedback (Frese and Keith, 2015). Organizational scholars have also developed insights on various dimensions of organizational learning and their relationship with error management culture. First, organizational error management culture promotes open communication that

lead to learning from errors (Van Dyck, 2000; Van Dyck et al., 2005). Second, organizational error management culture provides a secure environment for learning where employees feel safe in committing errors and talking about the errors. Third, error management cultures also incorporate mutual respect, trust, and confidence among the employees that they will not be blamed, punished, or rejected for making and discussing errors that consequently lead to learning from errors (Edmondson, 1999; Hofmann and Frese, 2011).   Based on the previous literature, the following hypothesis is proposed

H1: Organizational Error Management Culture is positively associated with organizational learning from errors

2.1.2 Organization Learning from Errors and Innovative Work Behavior

Innovative work behavior (IWB) has been defined as a set of interrelated behaviors for idea creation, idea promotion, and idea realization (Janssen, 2004). There is a growing bulge of studies regarding the relationship between innovativeness and learning orientation (Sinkula, Baker, and Noordewier, 1997). For instance, Calantone et al. (2002) empirically validated the impact of learning orientation on innovativeness. Similarly, Liu, Luo, & Shi, (2002) also argued that organizational learning is an important predictor of firm innovativeness. In the same line, Hult et al. (2004) empirically validated the argument that organizational learning is a significant antecedent of innovativeness. According to Cefis and Marsili, (2005) organizational learning keeps the organization competitive by introducing new products and services. Given this line of research,(Zohoori, Mohseni, Samadi, and Attarnezhad, 2013) established that organizational learning from errors strongly affects innovative work behavior.

There are quite several studies that empirically validate the indirect relationship of organizational learning from errors with organizational performance through innovative work behavior (Hao, Kasper, & Muehlbacher, 2012). Extending this line of research, Škerlavaj, Song, and Lee, (2010) researched many Korean organization's innovative cultures and found that learning organization was a significant predictor of service, product, and process innovation. Similarly, various scholars have studied the relationship between organizational learning from errors and innovation processes (Sˇkerlavaj et al., 2010; Park, Song, Yoon, and Kim, 2014). So, we proposed the following hypothesis

H2: Organizational learning is positively associated with Innovative work Behavior

2.1.3 Innovative Work Behavior and Organization Performance

Innovativeness is an important predictor of business performance (Cooper, 2000).   Prior research on organizational performance barely focused on the organization's capacity to innovate (Damanpour, 1991; Hurley and Hult, 1998; Cooper, 2000). Innovativeness is regarded as a predominant strategic tool to promptly deal with changing internal and external environment. In the face of a complex and turbulent environment, an organization must fuel innovativeness for achieving high performance and competitive advantage (Hult et al., 2004).

Owing to the dynamic environment, Innovative work behavior (IWB) of employees is pivotal in achieving better performance(Kanter, 1983). This line of research is further extended by Rosenbusch, Brinckmann, & Bausch, (2011). They argued that innovativeness significantly contributes to overall organizational performance. Similarly, several authors also underlined the importance of innovative work behavior to improve organizational performance (Van de Ven, 1986 ; Gatignon, Tushman, Smith, and Anderson, 2002; Unsworth & Parker, 2003). Moreover, Campbell, Gasser, & Oswald, (1996) empirically demonstrated the positive link between innovative work behavior and organizational performance.

An important line of organizational performance literature also focuses on the organizational climate of innovativeness and organizational performance (Nybakk, Crespell, Hansen, and Lunnan, 2009). Other scholars have also pointed the association of innovative work and organizational performance through gaining competitive advantage (Yuan & Woodman, 2010 ; Shih & Susanto, 2011; Janssen et al., 2004; Oldham & Cummings, 1996 ; Scott & Bruce, 1994).

H3: Innovative Work Behaviour is positively associated with Organizational performance

2.1.4 Moderating role of Perceived Psychological Safety

Psychological safety is defined as the feeling that one is investing oneself into an organizational role without fear of negative repercussion to career, status, or self -image (Kahn, 1990). In other words,

perceived psychological safety delineates individual perceptions of risks involved in their work environment. In prior studies, perceived psychological safety has been widely studied as a mediating variable in explaining team outcomes, it is also found that perceived psychological safety play a more significant role as a moderator (Sanner and Bunderson, 2013). Furthermore, perceived psychological safety may turn out to moderates the antecedents of organizational performance and organizational learning (Edmondson 2004 ; Salas, Wildman, Burke, & Goodwin, 2008 ; Sanner and Bunderson, 2013)

A. C. Edmondson & Lei, (2014) emphasized the role of leaders in fostering perceived psychological safety in the organization. They suggested that a climate of perceived psychological safety empowered employees to identify, analyze and learn the potential hazards that threaten their performance. Moreover, perceived psychological safety facilitates the employees to overcome the learning anxiety- a state where unexpected results thwart one's productive learning (Schein, 1985). Previous researches have shown that perceived psychological safety was conducive to higher performance by reducing risk in proposing a new idea, better team learning, and smoother collaboration in solving problems (West, 1990; Edmondson, 1999). Moreover, perceived psychological safety was found to have a key role in enhancing organizational learning from errors through experimenting and sharing past reflection (Cannon and Edmondson, 2001; West & Anderson, 1996). However, in a psychologically unsafe environment, people did not report their errors for the sake of blame and punishment. As a result, employees refused to engage in learning behavior which ultimately dampens the organizational performance.

Error management culture on the other hand reduces the negative feelings by acknowledging the inevitableness of errors in organizational life(Lei, Naveh, Nivokov, 2016; Homsma, Van Dyck, De Gilder, Koopman, & Elfring, 2009 ; Bauer and Mulder, 2007; Edmondson, 1999) and thus enhance the perceived psychological safety of employees. Furthermore, perceived psychological safety was presumed to enrich organizational learning by abolishing obstacles of self-defensiveness, fear, and uncertainty (Edmondson, 1999; Sanner and Bunderson, 2015).

Therefore, based on the above arguments we take perceived psychological safety not as a causal factor but as a moderator to strengthen the relationship between organizational error management culture and learning from errors.

H4: Perceived Psychological Safety moderates the relationship between Error Management Culture and Organizational learning from Errors
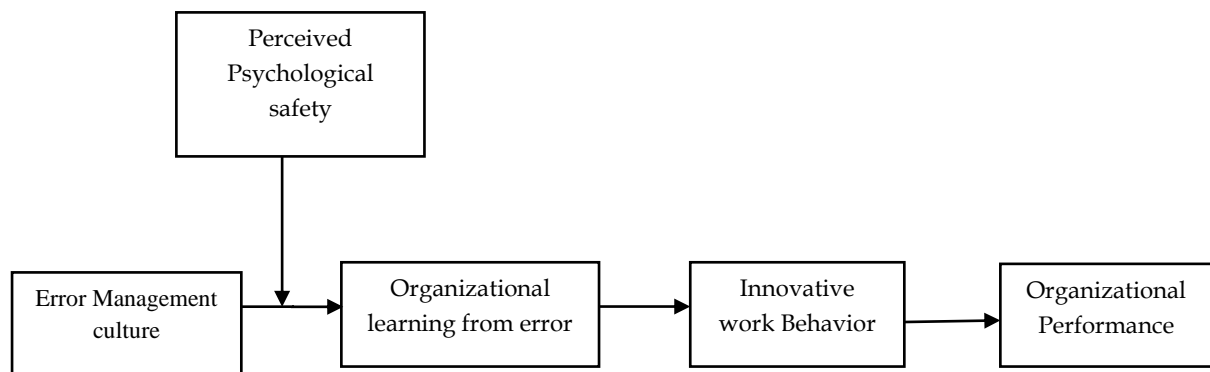
2.2 Conceptual Model

Figure 1 Conceptual Framework

This study proposed that error management culture is positively associated with organizational performance through multi mediators (organizational learning from errors, innovative work behavior) in such a way that error management culture inculcates organizational learning from errors that further leads to innovative work behavior among the employees. We further proposed that that perceived psychological safety moderate the direct relationship between organizational learning from errors and error management culture in such a way that the relationship is stronger when perceived psychological safety is high.

3.1 Research Methodology
3.1.1 Procedure and Participants

The target audience for this paper were employees from service industries, located in Karachi. Specifically, service industries were targeted owing to following reasons. First, service industries contribute 55% to the GDP of Pakistan, with an annual growth rate of 4.3% and involve 35.1% of labor forces (Economic Survey of Pakistan, 2015-16). Therefore, given the significance of the service sector in the economy, more studies are required to shed light on error management in services settings (Karatepe, 2012). Second, employees working in different various sectors such as banking, marketing, medical, teaching, and management were taken to enhance the generalizability of the current study. The sample size for this study was 300 employees with a responding rate of 96%. The questionnaire was administered in English and was not translated into native language *Urdu* as the target audience is well versed in comprehending English. They were informed that the research would be used for academic purpose and their confidentiality is maintained

3.1.2 Measures & Scale

All the measures utilized a five-point Likert scale (1=strongly disagree; 5= strongly agree). The constructs used in this study was adapted from the earliest literature. For measuring, Error management culture scale, the Error Orientation Questionnaire (Rybowiak, Garst, Frese, & Batinic, 1999) with a twelve-item scale was adapted. Sample items include "For us, errors are very useful for improving the work process", "After an error has occurred, it is analyzed thoroughly", "When an error has occurred, we usually know how to rectify it."

To specifically assess perceived psychological safety, Edmondson,(1999) perceived psychological safety questionnaire was adapted. A sample item includes "If you make a mistake on this organization, it is often held against you", "It is safe to take a risk in this organization."

Employees rated the extent to which their organizations exhibit learning from errors, using seven items based on Putz, Schilling, Kluge, and Stangenberg, (2013) OLE questionnaire. A sample item includes "People in our organization believe that errors at work can be a helpful part of the learning process"

To assess innovative work behavior, a nine-item scale of Janssen (2004) has been adapted. A sample item includes "I search out new working methods or instruments to improve my work"

Organizational performance has been measured using a five-item scale from Delaney and Huselid, (1996). Sample items include "The firm can achieve a high level of customer satisfaction"

3.1.3 Statistical Analysis

SMART Analysis was used for statistical analysis. Before testing the structural model, preliminary statistical analysis was carried out which is inclusive of normality, reliability, and missing value analysis.

4. Data Analysis and Discussion
4.1 Respondent profile

Of the total respondents, 70.3% (211) were male while 29.7% (89) were females. The working experience of the employees varies, with 48 % of the employees having 1-5 years of experience followed by 36% with 6-10 years of experience. Ages of the employees were as high as 55 and as low as 22 with 44 % of the sample lie between 20 -30 years.

4.2 Descriptive

Univariate normality of the constructs was examined through skewness and kurtosis. Table 1 depicts the descriptive statistic.

Table 1 Descriptive Statistics

Construct	Mean	Std. Dev	Skewness	Kurtosis	Cronbach's Alpha
Error Management Culture	4.08	.234	1.09	1.04	0.70
Innovative work Behaviour	3.85	.440	-.032	1.76	0.85
Org. Learning from Errors	3.74	.534	-0.648	1.96	0.88
Organization Performance	3.63	.740	-0.86	0.43	0.85
Perceived Psychological safety	3.35	.516	-1.02	1.76	0.72

Table 1 shows that Error Management Culture (M=4.08, SD=.23) has the highest Skewness (-1.09) followed by Perceived Psychological Safety (M=3.35, SD=.51), Organization Performance (M=3.63, SD=.74), Organization Learning from Errors (M=3.74, SD=.53), and Innovative Work behaviors(M=3.85, SD=.44).On the other hand, the highest Kurtosis(1.96) is of Organization Learning from Errors (M=3.74, SD=.53) and the lowest kurtosis (.305) is of Organization performance (M=3.63, SD=.74). All the Skewness and Kurtosis values ranged between $\pm$2.5 indicating that the constructs have no issue with Univariate normality (Byrne, 2013).

4.3 Construct Validity

Construct validity is defined as the extent to which a given measure adequately assess the construct it supposed to assess (Nunnally and Bernstein, 1994)

4.3.1 Convergent Validity

Convergent validity in the study has been ascertained through composite reliability and average variance extracted. The results are presented in Table 2

Table 2: Convergent Validity

Construct	Mean	Std. Dev	Composite Reliability	AVE
Error Management Culture	4.08	.234	0.79	0.50
Innovative work Behaviour	3.85	.440	0.88	0.55
Org. Learning from Errors	3.74	.534	0.91	0.68
Organization Performance	3.63	.740	0.89	0.63
Perceived Psychological safety	3.35	.516	0.81	0.52

The above table indicates that the reliability of each construct is more than 0.7 and the variance explained for each factor is more than 0.5, which means that constructs meet the requirement of convergent validity(Bell, Bryman, & Harley, 2018).

4.3.2 Discriminant Validity

 Discriminant validity indicates the uniqueness and distinctiveness of the adopted construct. The results are summarized in Table 3

Table 3: Discriminant Validity

Constructs	1	2	3	4	5
Error Management Culture	0.71				
Innovative work Behaviour	0.56	0.74			
Org. Learning from Errors	0.53	0.66	0.82		
Organization Performance	0.38	0.55	0.49	0.79	
Perceived Psychological safety	0.42	0.19	0.47	0.35	0.72.

Table 3 shows that the value of the square root of AVE is higher than the square of each pair of correlation which confirms that the data fulfills the requirement of discriminant validity

4.4 Path Coefficients

This study has examined the direct effect as well as an indirect effect. The generated output from SMART PLS is presented in table 4 and 5 and the structural model is presented in figure 2

Table 4: Direct Effects.

No.	Hypothesis	R²	Path Coeff'	T Statis	P Values	Results
1	EMC -> Org. Learning from Errors	0.18	0.20	6.57	0.00	Accepted
2	IWB -> Organization Performance.	0.43	0.54	21.406	0.00	Accepted
3	Org. Learning from Behavior -> IWB	0.40	0.65	12.093	0.00	Accepted
4	Per. Psychological safety. -> OLE	0.30	0.23	6.67	0.00	Accepted

EMC =Error Management culture, OLE= organizational learning from errors, IWB=Innovative Work Behavior, Per. Psychological safety=perceived psychological safety

Hypothesis 1 was on the impact of organizational error management culture on organizational learning. The result supports the hypothesis (β=0.20, t=6.57 <.05) that organizational error management culture is positively associated with organizational learning. Hypothesis 2 proposes that organization learning from errors and innovative work behavior. The results (β=0.65, t=12.093 <.05) support the hypothesis that organizational learning from errors is significantly and positively associated with innovative work behavior. Hypothesis 3 was on the impact of innovative work behavior on organizational performance. The results (β=0.65, t=12.093 <.05) depict that innovative work behavior has a significant and positive association with organizational performance. To analyze the moderating effect of perceived psychological safety on the relationship between organizational learning from errors and error management culture, we conducted moderation analyses with organizational learning from errors as the dependent variable. The results (β=0.23, t=6.67 <.05) support the hypothesis that perceived psychological safety moderates the relationship.

Table 5: Indirect Effects

No.	Hypothesis	Path Coeff'	T Statis	P Values	Results
1	EMC -> Org. Learning from Errors-> IWB	0.13	2.31	0.01	Accepted
2	Per. Psy Safety -> EMC -> Org.l Learn.Errors	0.08	2.63	0.004	Accepted
3	EMC -> Org.l Learn. Errors -> IWB-> OP	0.07	2.24	0.01	Accepted
4	Org.l Learn. Errors -> IWB -> OP	0.36	9.79	0.00	Accepted

The results revealed that both direct and indirect paths are statistically significant. Therefore, the inclusion of organizational learning from errors (β=0.13, t=2.31 <.05) and innovative work behavior (β=0.36, t=9.79 <.05) as a mediator between organizational error management culture (EMC) and organizational performance is meaningful. It can be concluded that organizational learning from errors mediates the relationship between error management culture and innovative work behavior. Furthermore, we also found that innovative work behavior mediates the relationship between organizational learning from errors and organizational performance.
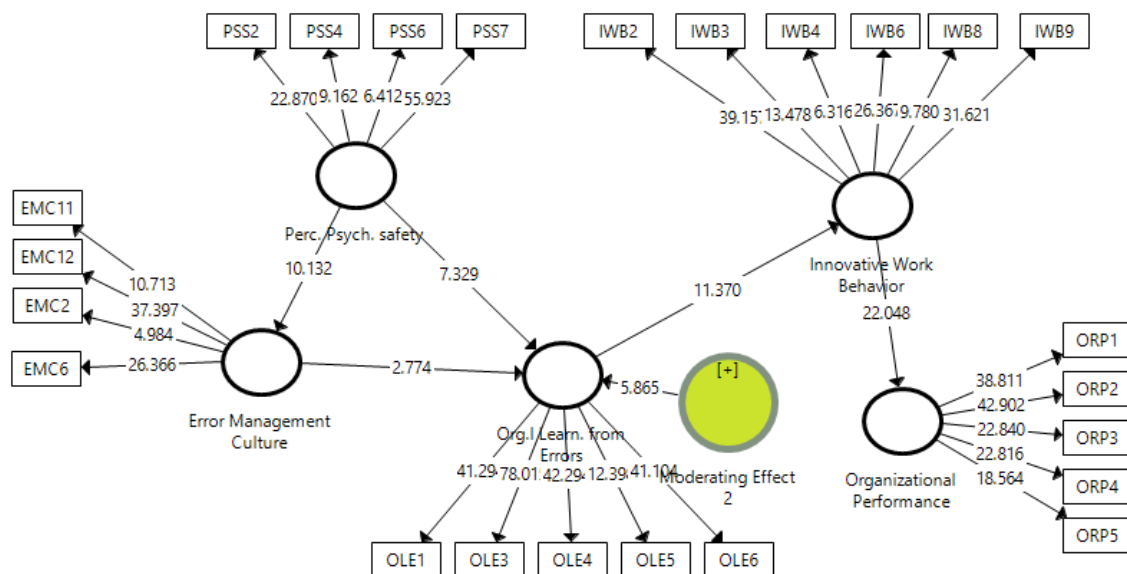

Figure 2 Measurement Model

4.5 Discussion

We advance our understanding of how error management culture predicts organizational performance through multi mediators i.e., organizational learning from errors and innovative work behavior. In doing so, we integrate error management theory with share cognition theory to explain why and how organizational error management culture enhances organizational performance. Specifically, we found that error management culture inculcates learning behaviors among the employees by focusing on the informative aspect of errors. The results are consistent with previous studies where people agree on the positive consequences of errors such as learning, innovation, and resilience (Van Dyck, Frese, Baer, and Sonnentag, 2005; McCune, 1997; Sitkin, 1996; Jones & O'Brien, 1991). Prior studies also corroborated the notion that learning from errors leads to service timeliness, plant productivity, and survival rates by learning from experience (Reason, 1997; Zhao and Olivera, 2006). We also analyzed that organizational error management culture indirectly leads to a positive organizational performance by fostering organizational learning from errors, understanding the underlying causes of errors, and preventing them from happening in the future. We also showed that organizational learning from errors predicts organizational performance through innovative work behavior that involves active exploration and experimentation. Previous studies also supported the notion that organizational learning and innovation improved the organizational performance by developing a dynamic and proactive vision (Bueno et al., 2010; Glynn, 1996; Hurley and Hult, 1998; Ireland et al., 2001). Furthermore, the results were consistent with previous studies that imply the firm competencies and capabilities to innovate in the presence of learning culture (Chipika and Wilson 2006) Moving further, we found that perceived psychological safety, reduces the anxiety related to interpersonal risks, thus encouraging employees' willingness to learn from errors

4.6 Theoretical Contribution

Our study extends the error literature in several ways. Although few studies have demonstrated the positive outcome of error management culture on employee's well-being, recovery of service quality, co-worker helping behavior, and employee performance, less attention has been paid to understand how organizational error management culture influences organizational performance via multi mediators. Thus, by theorizing and verifying organizational learning from error and innovative work behavior as a significant intervening variable, this study creates synergies between organizational learning and organizational error management and provides supplementary support to the effectiveness of error management literature in attaining high performance. Since error management is a decisive aspect in dealing with errors in organizations, this study also reinforces the importance of error management culture in recent studies in effectively dealing with errors as compared to error prevention culture. The second worthwhile addition of this study is the inclusion of perceived psychological safety as a moderating variable. In most of the previous studies, perceived psychological safety tends to assume as an intervening variable while in this study we take it as a moderating variable. Worth noting, the result of this study suggested that perceive psychological safety served as a boundary condition influencing organizational learning from errors.

The third contribution was to analyze the impact of error management culture in the service industry. The previous error literature was taken into account the non-service industry such as manufacturing and aviation. Recent studies have begun to examine error management culture in service settings(Guchait, Zhao, Madera, Hua, & Okumus, 2018). The current study empirically validates the significant impact of error management culture in the service industry. In this way, the current study increases the generalizability of error management literature.

5. Practical Implications

The current study has various practical implications. First, by analyzing the impact of management culture on organizational learning from errors, this study suggests that by strengthening error management culture, the organization could make a significant difference. Secondly, many organizations have a punishment-oriented system that rewards success and punishes failure and errors. Under such type of system, employees' productivity is seriously affected since the atmosphere of the organization is not conducive for learning from errors (Tjosvold, Yu, & Hui, 2004). In light of the given study, managers

need to establish a safe atmosphere rather than a blaming environment to achieve high performance. This is only done if the management understands the importance of perceived psychological safety for promoting organizational learning from errors. Moreover, management needs to develop such competencies in employees that encouraged them to think positively about errors as a part of organizational learning and innovation.

5.1 Limitations and Direction for Future Research

Although this study has practical significance for the service industry, few limitations should be accounted for. First, several unexamined contextual factors affect the relationship between organizational error management culture and organizational performance. For instance, leadership orientation, cultural dimensions are among the few contextual factors that can affect the proposed relationship. The inclusion of contextual factors calls for answers to the following questions that are under what condition might the error management interventions be more effective and how?

Secondly, there are many instances where errors are not managed for instance where speed overrule quality. In such situations, learning from errors is being stifled (Lei, 2018). So, to maintain the balance between the contradictory priorities (speed vs quality), future studies need to examine the complimentary priorities to influence the emergence of errors in the organization.

Thirdly, future studies should incorporate cross-cultural comparisons of error consequences, antecedents, processes to understand their underlying mechanism, (Gelfand, Frese, and Salamon, 2011).

5.2 Conclusion

Errors are ubiquitous in organizational life and it is next to impossible to eliminate all kinds of organizational errors. With the view to maintain a competitive position in the global dynamic environment, organizations must encourage their employees to learn and innovate from their errors. By incorporating error management literature with share cognition theory, this current study explains the underlying mechanism of organizational error management culture through multi mediators in achieving organizational performance. The result from the service industry provides the empirical support to our hypotheses that error management culture is indirectly linked to organizational performance through organizational learning from errors and innovative work behavior and perceived psychological safety moderates the relationship between organizational learning from errors and error management culture. These findings also shed light on the importance of constructive orientation toward errors for managers to develop error management culture in their organizations.

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