Workplace Creativity Through Employee Mindfulness: The Moderating Role of Organizational Error Tolerance

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This study investigates how organizational error tolerance (ET) influences employee creativity (EC) in the Indian IT service industry by proposing a moderated mediation model, drawing from the 'Interactionist Perspective of Workplace Creativity', to examine the interplay between employee mindfulness (EMF), creative process engagement (CPE), and error tolerance. The study utilized a survey method, gathering 320 data from IT employees and their supervisors in India. Analysis was conducted using SPSS 25.0 and Amos 25.0, employing hierarchical linear modeling and the PROCESS macro to test research hypotheses. The study found support for its hypotheses, indicating that the relationship between employee mindfulness and creativity is influenced by organizational error tolerance. Creative process engagement mediated this relationship, with error tolerance moderating the effect of employee mindfulness on CPE and subsequently on creativity.

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Introduction

Employee creativity is vital for improving service production and delivery, driving organizational innovation and competitive advantage (Hon & Lui, 2016; Kim & Shin, 2015). Scholars have highlighted the importance of creativity and innovation in the service sector (Wang et al., 2021) and IT service employees collaborate extensively with business partners for innovative service delivery (Barratt & Hinings, 2015) and engage in team-based projects, offering tailored solutions to clients (Pai et al., 2022). These employees focus on problem identification, information search, and idea generation to provide innovative solutions (Kwan et al., 2018; Zhang & Bartol, 2010a) and value to customers (Woo et al., 2021). New value propositions like "product-as-a-service" and "everything-as-a-service" are gaining attention (Kiel et al., 2017). Mind-

fulness is emerging as a factor influencing employee creativity (Byrne & Thatchenkery, 2019). With a few exceptions, empirical research on the relationship between employee mindfulness and creativity in service firms is still rare (Wang et al., 2021). Researchers have observed that team and work environments, in addition to an individual's creative potential, also contribute to creativity (Leung & Wang, 2015). When errors are made, people in strong error management cultures know they will not be made fun of or held accountable (Nicoletta et al., 2018). IT service industries push employees to be creative in order to maintain and build a competitive advantage. Effective employee performance is influenced by predetermining factors, including creative performance (Zhang & Bartol, 2010a) and therefore, it's critical to highlight these elements. Previous research highlights various factors fostering employee creativity, including work features, organizational contexts, personality traits, and leadership style (De Clercq et al., 2017). Organizational circumstances impact motivation and attitude, which in turn impact creativity (Amabile & Pillemer, 2012). Employee mindfulness positively impacts creativity in the services sector (Wang et al., 2021), particularly in collaborative tasks across departments involved in service production and delivery. Thus, employee mindfulness facilitates the processing of complex information and attention management required to deal with new first-hand knowledge and provide creative solutions (Wang et al., 2021). Employees hesitate to share creative ideas due to fear of errors (Venkataramani et al., 2014). To address this, managers should foster a tolerant work environment that values creativity and views mistakes as learning opportunities (e.g., Interactionist Model, Woodman et al., 1993). This, combined with mindfulness training, can create a safe space for creative expression.

The goal of error tolerance, on the other hand, is to maximize employee performance in every error scenario.

Employee mindfulness (EMF) and creativity may be directly related to error tolerance or the way errors and failures are handled in an organization (Vogus & Rerup, 2018). acknowledging that making errors at work gives employees a supportive environment in which they can self-regulate their attention to the environment and process information mindfully to better understand customers' needs, using their creative problem-solving skills to exercise their service discretion (e.g., Weick & Sutcliffe, 2015; Hales & Chakravorty, 2016). For the treatment of errors, researchers have put forth a novel administrative strategy called error management. Accepting and tolerating errors as they happen is the cornerstone of this new managerial paradigm (Frese & Keith, 2015). High-error-tolerance organizations do not penalize errors; instead, they maintain a forgiving attitude in the hopes that employees would utilize errors as chances to grow and learn (Dimitrova et al., 2017). It is crucial to understand that ET does not mean that errors should be tolerated.

The goal of error tolerance, on the other hand, is to maximize employee performance in every error scenario. Employees learn and become competent, and fewer errors are made in vain, if they believe that errors are accepted (Weinzimmer & Esken, 2017). "The conditions that exist within an organization that allows organizational members to take risks, pursue innovative solutions, and develop superior knowledge without fear of repercussions for making errors" is how Weinzimmer and Esken (2017; 5) defined the ET. This definition suggests that ET is a contextual element at the organizational level that promotes a positive work atmosphere where errors are accepted as inevitable. Errors are often seen negatively in organizations, yet they are crucial for learning and creativity (Frese & Keith, 2015). Research suggests that errors can foster innovation by prompting exploration and providing valuable feedback for improvement (Bledow et al., 2009). Research on how workplaces influence creativity is mixed (Zhang et al., 2020; Lebuda et al., 2016). We lack a clear understanding of how work environments make employees feel safe taking creative risks (Geng et al., 2022). More research is needed to fill this gap. Few research have looked at the relationship between contextual variables and employee radical creativity from the standpoints of social network, self-efficacy, and self-determination (e.g., Malik et al., 2019). The current study extends previous research by exploring how creative process engagement (CPE) mediates the relationship between employee mindfulness and creativity, with error tolerance as a boundary condition for this relationship.

Research Significance

This study contributes to the growing field of workplace mindfulness by adopting an interactionist perspective on creativity (Kristensen, 2018; Purser, 2018; Good et al., 2016; Hülsheger et al., 2018; Lomas et al., 2017; Vu & Gill, 2018; Yu & Zellmer-Bruhn, 2018; Walsh, 2018; Byrne & Thatchenkery, 2019). It highlights error tolerance (ET) as a contextual factor that modifies the impact of employee mindfulness on creative process engagement (CPE) and creativity (Reina & Kudesia, 2020). By integrating error tolerance into the framework, the study sheds light on how organizational factors influence the relationship between mindfulness, CPE, and creativity, thereby enhancing our understanding of the role of mindfulness in organizations and adding to the body of research on mindfulness from a boundary conditions perspective.

Theoretical Background

Our method is rooted in the interactionist theory of creativity (Woodman et al., 1993) and draws on mindfulness literature, including studies by Colzato et al. (2012), Moore and Malinowski (2009), and Bishop et al. (2004). Colzato et al. (2012) and Moore and Malinowski (2009) demonstrate the enhancement of attentional processes and cognitive flexibility through mindfulness meditation, highlighting its correlation with cognitive control. Amabile's

seminal work (1983; 1996) illuminates the link between individual traits, skills, and workplace creativity, emphasizing both process and outcome. Amabile et al., (1996) asserts a significant connection between employee creativity and outcomes.

Mindfulness: According to Brown et al. (2007), mindfulness is described as "A receptive attention to and awareness of present moment events and experience." There is a correlation between greater creativity and mindfulness (Langer & Moldoveanu, 2000). Prior research has extensively examined factors preceding EC, including personal characteristics such as learning orientation, personality traits, and self-efficacy (Jaiswal & Dhar, 2015), as well as organizational support and transformational leadership. However, the specific predictive relationship between employee mindfulness and creativity remains largely unexplored in the IT work setting in India. Despite empirical evidence suggesting that EMF enhances creativity (Lebuda et al., 2016; Zheng and Liu, 2017), further investigation within this context is warranted particularly in the Indian IT services context.

Linking EMF, CPE & EC: An essential outcome of mindfulness in the workplace is innovative behavior from employees, which requires further investigation (Cheung et al., 2020). A small body of prior research (Colzato et al., 2012; Ostafin & Kassman, 2012; Moore & Malinowski, 2009) has hinted at a potential connection between employee creative process involvement and mindfulness at work. CPE indicates "employee involvement in creativity-relevant methods or processes, including (1) problem identification, (2) information searching and encoding, and (3) idea and alternative generation"(Zhang & Bartol, 2010b:108). A person's working memory and cognitive state (i.e., awareness; Carson Langer, 2006) may both be improved by practicing enhanced mindfulness, which enables employees to engage in non-routine or habitual behavior and proactively develop original ideas (Moore & Malinowski, 2009). Innovative work behaviors are a sign of creativity (Amabile, 1988), and these behaviors may be strengthened by having employees participate in creative processes (Amabile et al., 1996; Zhang & Bartol, 2010 a; 2010 b, Henker et al., 2015). A mindfulness intervention and its correlation with cognitive capacity are thought to be the cause of the link between EMF and creativity (Colzato et al., 2012). This is because mindfulness interventions can help people prepare their minds before turning an idea into a creative solution (e.g. Byrne & Thatchenkery, 2019). Further, employee participation in creative processes fosters creativity, as indicated by research (Amabile, 1983; Amabile et al., 1996; Zhang & Bartol, 2010a,2010b; Henker et al., 2015). Studies have also suggested a positive correlation between mindfulness and creativity (Zheng & Liu, 2017; Lebuda et al., 2016). Conscientious employees, as noted by Brown et al. (2007), excel in managing peer criticism, thus facilitating their active participation in the creative process. Within IT service providers, teamwork is pivotal for delivering innovative solutions to clients,

necessitating collaboration among various departments and business verticals (Barratt & Hinings, 2015; Wang et al., 2020). Accordingly, we argue that being mindful enables employees to catalyze their creativity through their engagement in the creative processes to bring out novel ideas and creative solutions.

H1: EMF is positively related to EC.

H2: CPE mediates the effect of EMF on EC.

Error Tolerance (ET): The literature acknowledges the multifaceted nature of error management; nonetheless, it was not until recently that error tolerance—the most distinguishing feature of error management—was defined as a quantitative construct (Frese & Keith, 2015; Weinzimmer & Esken, 2017). Therefore, it is still mostly unclear how employee attitudes and actions are impacted by ET

Interaction between EMF & ET on Employee Creativity: Previous research indicates that there is a little but significant positive link between EMF and creativity at work (Lebuda et al., 2016). The contextual components of mindfulness influence its outcomes; nevertheless, the moderating roles of this relationship, especially the moderators at the organizational level, have long been overlooked (Sutcliffe et al., 2016). Individual mindfulness requires a self-regulation process to take effect since mindful attention requires continuous attentional state monitoring and adjustment (e.g., Lian et al., 2017). Comprehending the factors that influence the self-regulation process is essential to appreciating the effects of electromagnetic fields (EMF) (Reina and Kudesia, 2020). Ability and motivation both have a role in the level of self-regulation (Vago and Silbersweig, 2012).

Error tolerance reflects an organizational environment where employees are incentivized to engage in self-regulation using allocated cognitive resources, influencing the relationship between mindfulness and employee creativity

Individuals' perceptions of their environment influence their inclination towards self-regulation, impacting their level of mindfulness (Kudesia, 2019). The theory of situational assessment (Reina & Kudesia, 2020) suggests that one contextual factor affecting self-regulation is the level of tolerance for errors in the workplace (Wang et al., 2021). Error tolerance promotes constructive social interactions by enabling open discussion of errors and solutions without fear of criticism (Wang et al., 2020). Ultimately, error tolerance reflects an organizational environment where employees are incentivized to engage in self-regulation using allocated cognitive resources, influencing the relationship between mindfulness and employee creativity (Wang et al., 2021). Therefore, when the amount of ET is higher, the EMF becomes a means of accomplishing more inventive work (i.e., superior performance coming from creativity). Hence,

H3: ET moderates the effect of EMF on CPE.

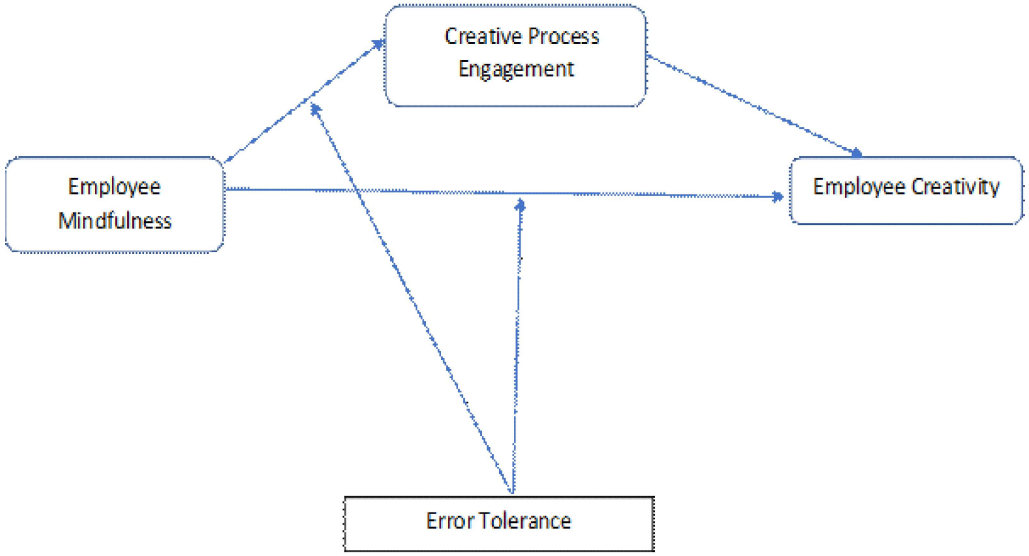
H4: ET moderates the effect of EMF on EC.

We further suggest that, in accordance with the earlier theories, the indirect effects of EMF on EC through CPE would vary depending on the degree of ET, from low to high. Therefore, the following hypothesis is proposed:

H5: ET moderates the indirect effect of EMF on EC via CPE.

Fig. 1 Depicts this conceptual model.

Fig. 1 Hypothesized Model



Participants & Research Settings

We gathered information (using a web-based survey tool) from one significant information technology (IT) organization in Bangalore, India, in order to reduce variances in the several professional cultures that exist. Professional staff members who worked in fields requiring a high degree of creativity, such as software engineers, new product developers, programmers, software architects, algorithm developers, artificial intelligence engineers, web developers, and mobile app developers, as well as their respective supervisors, participated in the survey. We sent an email and a URL survey link to the company's concerned management after contacting them to request permission for a two-wave poll. Managers and subordinates were matched, but the data from each group was gathered using different anonymous questionnaires to prevent common source bias. Employees were asked to self-evaluate their independent, mediating, and moderating factors (EMF, CPE, and ET) in the first wave. The dependent variable in the second wave survey was EC, which was assessed by their immediate supervisors three weeks following the first survey. Employees were promised that all information

submitted would be kept secret and were given code numbers to match their answers to the ratings provided by their bosses before filling out surveys. In the official data collecting process, this study distributed 400 questionnaires and collected 355 responses. Ultimately, 320 valid replies—or an effective response rate of 80%—were obtained by comparing the completed responses from employees with the supervisor assessments that corresponded to them. There were 276 male employees (86.3% of the sample) and 44 female employees (13.8%).

Measurement

Existing scales were used to measure study variables.

The measurement of EMF utilized a 15-item five-point Likert scale developed by Brown and Ryan (2003). Sample items included, "I could be experiencing some emotion and not be conscious of it until sometime later" and "I break or spill things because of carelessness, not paying attention, or thinking of something else."

Creative Process Engagement (CPE) was assessed using an 11-item five-point Likert scale adapted from Zhang and Bartol (2010a). Sample items included, "I spend considerable time trying to understand the nature of the problem," "I consult a wide variety of information," and "I consider diverse sources of information in generating new ideas."

Employee Creativity (EC) was measured using a seven-item five-point Likert scale based on the work of Madjar et al. (2011). Sample items included, "When you think of the ideas you come up with at work, to what extent would you characterize them as being departures from what is currently done or offered" and "When you think of the ideas you come up with at work, to what extent would you characterize them as being extensions built on what is currently done or offered."

Error Tolerance (ET) was assessed using a five-item five-point Likert scale (Weinzimmer & Esken, 2017). A sample item included, "Managers are generally accepting of errors."

Control Variables.

Four participant demographic characteristics—age, gender, length of employment, and education—were included as common control variables (Janssen, 2001) of EC to lessen the possibility that other factors that may influence creativity would skew the relationships under investigation. Prior studies indicate that creativity is positively impacted by schooling (Zhou & George, 2003). Consequently, the length of time spent in schooling beyond high school served as our proxy for education. Years were used to measure age. A dichotomous variable denoted as 1 for males and 2 for females was used to quantify gender. The number of years a person has worked for the firm was used to calculate their company tenure.

Analysis

We used SEM and hierarchical regression analysis to examine our model

(Fig. 1) (Anderson & Gerbing, 1988). The function of ET as a moderator was investigated using hierarchical multiple regression. Because it enables a researcher to base the order of input of variables on their causal priority, hierarchical regression is one of the most effective methods for investigating interaction effects (Cohen et al., 2013). To lessen multicollinearity, all interaction variables were mean-centered (Aiken & West, 1991).

The respondents' demographics are shown in Table 1. For each of the study's variables, Table 2 presents the descriptive statistics, correlations, and scale reliabilities.

Table I Demographics of Respondents (n=320)

Demographics	Frequency	Percentage
Gender		
Male	276	86.3
Female	44	13.8
Education Level		
Bachelor's degree or equivalent	306	95.6
Masters degree / Doctorate	14	4.4
Job Tenure		
1 to 2 years	63	19.7
6 to 10 years	82	25.6
e" 11 years	175	54.7
Age		
< 25 years	43	13.4
25 – 29	123	38.4
30 – 34	107	33.4
e"35 years	47	14.7

Table 2 Descriptive Statistics, Correlations & Reliabilities

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9
1.Creativity	3.49	0.75	(0.86)								
2.Age	35.99	7.74	0.07								
3.Gender	1.14	0.34	-0.01	-0.23**							
4.Job Tenure	3.15	1.14	0.04	0.79**	-0.22**						
5.Education	1.04	0.20	0.02	0.04	0.35**	-0.002					
6.MF	5.68	0.35	0.72**	0.01	-0.05	-0.008	-0.05	(0.89)			
7.CPE	3.59	0.79	0.53**	0.01	0.10	-0.02	0.05	0.45**	(0.89)		
8.ET	4.48	1.24	0.57**	0.009	0.012	0.035	-0.030	0.56**	-0.53**	(0.87)	

n=320; Internal reliabilities (alpha-co-eff.) for the overall constructs are given in the parentheses on the diagonal.
*pd"0.05
**d"0.01

Measurement Model

The measurement model was subjected to a CFA, and one EMF item—EMF11—was eliminated since the loadings were not statistically significant ($p>0.05$). A strong match to the data was shown by the measurement model findings [CMIN/DF=1.758; p=.002; RMSEA=0.049; GFI=0.962; CFI=0.985; TLI=0.979], which supports a closer look at the structural model. To assess the model fit, the composite model's standardized root mean squared residual (SRMR) value is also looked at. A satisfactory model fit was indicated by the SRMR value of 0.04, which was less than the suggested value of 0.08 (Henseler et al., 2016). All constructs had acceptable average variance extracted (AVE) values ranging from 0.62 to 0.66. Additionally, the scale reliability (0.86 – 0.89) is displayed in the composite reliability numbers.

Construct Validity & Multicollinearity

In accordance with Fornell and Larcker (1981), the present investigation evaluated the essential variables' discriminant validity. Every related association is consistently less than the square roots of the AVE values (Table 2). All variables had discriminant validity, as shown by the fact that none of the latent constructs' individual correlations (ranging from 0.53 to 0.72) surpassed their corresponding reliabilities (ranging from 0.86 to 0.89)

Additionally, multicollinearity was not a problem, as seen by the VIF scores (which ranged from 0.79 to 0.83) that fell below the crucial number of 10.

Common Method Bias

Because cross-sectional data were utilized in the study, there is a chance that common method bias (CMB) would arise and cause the variables to have erroneous associations (Podsakoff et al., 2003). To reduce the impacts of CMB, we gathered information from direct supervisors and employees at various locations and times. In this investigation, Harman's single-factor analysis was used. According to Podsakoff et al. (2003), the first component only accounted for 23.9% (less than 50%) of the total variation explained, suggesting that CMB is not the cause for worry.

Structural Model

The full structural model including path coefficients is shown in Fig. 2.

According to hypothesis 1, EC and EMF have a favorable relationship. This conclusion was confirmed by our data (ß=0.57, p=0.001). We adhered to the James et al., (2006) recommended technique to further evaluate the mediation effects. The mediator was examined by utilizing bootstrapping, or sampling with replacement, with 5000 resamples to calculate bias-corrected 95% confidence intervals (CIs). The mediation effect can be deemed substantial since the bootstrapped 95% confidence interval (CI) around the standardized indirect impact does not include zero between the upper and lower limit values. Our sec-

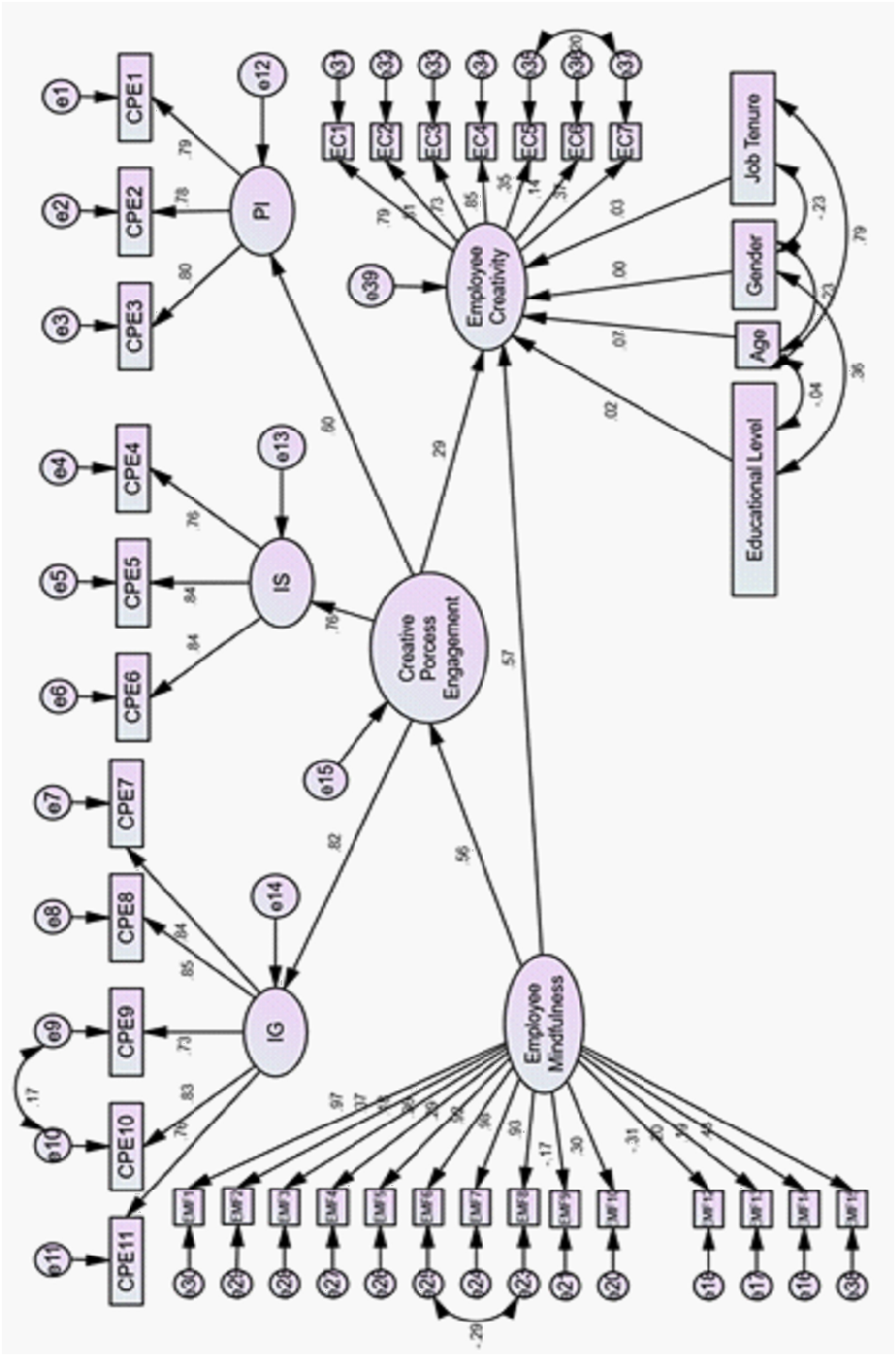


Fig. 2 : SEM Mediation Analysis

Table 3 Mediation Analysis :

Effect / Item	Path Coeff.	P-Value	Conclusion
Total	0.731	0.001	1. Since, Indirect Effect is significant, and Direct effect is significant as well; it is a case of partial mediation.
Indirect	0.164	0.002	
Direct	0.567	0.001	
VAF (Variance Accounted For)	0.164/0.731=22.43%		2. 22.43 percent variance of EC is explained by EMF indirectly via CPE.

ond hypothesis is supported by the substantial indirect influence of CPE on the EMF-creativity association (ß= 0.163, p = 0.002 ; 95% CI [0.0736, 0.1604]). Furthermore, EMF indirectly explains 22.43 percent variance (VAF) of EC through CPE (Table 3, Fig 2). H2 is therefore supported.

Hierarchical Multiple Regression Analysis

The findings of the hierarchical multiple regression are summarized in Table 4.

The findings support hypothesis 3 as the results show that the direct effect of EMF on CPE was significantly moderated by ET (β =0.167, p= .016). To further probe this significant interaction, a simple slope test was conducted (Aiken & West, 1991). According to the two regression lines in Fig. 3, there is a greater effect of EMF on CPE in situations where ET is high (1 SD above the mean) than in those where ET is low (1 SD below the mean). H3 is supported. Similarly, in keeping with Hypothesis 4, the EMF*ET interaction also does not significantly affect EC (β =0.065, p= .338). Examining the conditional effect results, on the other hand, reveals a substantial direct influence of EMF on EC at three different levels: low (β-low = 0.482, p = 0.000, CI = 0.278, 0.687); average (β-average = 0.455, p = 0.001, CI = 0.192, 0.797); and high (β-high = 0.427, p = 0.048, CI = 0.004, 0.850). Hence, H4 was partially supported.

Additionally, using SPSS PROCESS (MODEL 8) and a 95% BC CI bootstrap sample of 5000 with ET included as a moderator, H3, H4, and H5 were also examined. The outcomes of the moderated mediation analysis are shown in Table 5. As the indirect relationship between EMF and EC via CPE was stronger when ET was high (ß=.517, CI95% = [0.278–0.793]) compared to when ET was low (ß=.217, CI95% = [0.015–0.352]), the bootstrapping results demonstrate that the conditional indirect effect is positively significant and strong. Additionally, there was a significant moderated mediation (Index = 0.083, SE = 0.040, CI95% = [0.018, 0.173].

Additionally, Table 5 conditional indirect effect results showed that there was no "zero" in between the CIs for any of the three indirect effects levels of ET. H5 was therefore supported.

Discussion

The results have implications for how EMF might improve EC via CPE. There-

Table 4 Results of Hierarchical Regression Analysis : Moderating effect of ET on MF-CPE

Variables	Model 1	Model 2	Model 3
Age	0.028(0.010)	0.009(0.009)	0.019(0.009)
Gender	0.095(0.144)	0.109(0.138)	0.114(0.137)
Education	0.019(0.236)	0.008(0.226)	-0.005(0.225)
Job Tenure	-0.030(0.065)	-0.004(0.062)	-0.013(0.062)
MF		0.232***(0.125)	0.343***(0.160)
ET		-0.142**(0.025)	0.120*(0.025)
MF*ET			0.167**(0.070)
“R Squared		0.096	0.016
F for “R Squared		6.269***	6.287***
R Squared	0.011	0.107	0.124
F	0.873	16.887***	5.816**
Moderating effect of ET on MF- EC :			
Variables	Model 1	Model 2	Model 3
Age	0.062(0.009)	0.016(0.009)	0.012(0.009)
Gender	-0.011(0.141)	0.006(0.130)	0.008(0.130)
Education	0.042(0.230)	0.033(0.213)	0.028(0.214)
Job Tenure	-0.016(0.063)	0.031(0.059)	0.034(0.059)
MF		0.344***(0.118)	0.388***(0.153)
ET		0.105(0.024)	0.096(0.024)
MF*ET			0.065(0.067)
“R Squared		0.153	0.002
F for “R Squared		9.740***	8.478***
R Squared	0.004	0.157	0.160
F	0.326	28.457***	0.920

n = 320. Values are standardized coefficients, with standard errors in parentheses.
a) CPE is the dependent variable.
b) EC is the dependent variable.
* p d” .05
** p d”.01
*** p d”.001

In highly error-tolerant IT service firms’ conscientious IT employeess are more inventive than their non-conscientious counterparts.

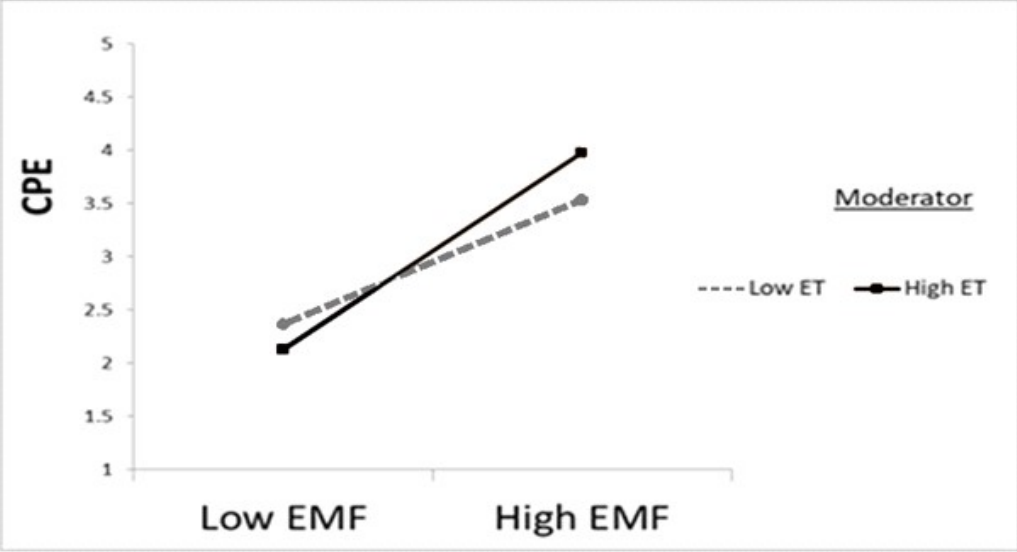
fore, we looked into the fundamental process as to which CPE in the IT services industry might affect employee awareness and EC. Furthermore, in line with the “Interactionist Model of Creativity” (Woodman et al., 1993), we have identified an organizational factor called ET that determines the ex-

Table 5 Conditional Process Analysis

	ß	SE	t	p
		Mediator Model (Outcome: CPE)		
Constant	-3.886	0.840	-4.627	0.000
EMF	0.742	0.160	4.645	0.000
ET	-0.817	0.369	-2.216	0.027
EMF*ET	0.168	0.070	2.390	0.017
		Dependent Variable Model (Outcome : EC)		
Constant	1.140	0.701	1.628	0.105
EMF	0.455	0.133	3.410	0.001
CPE	0.494	0.045	10.888	0.000
ET	0.097	0.300	0.322	0.748
EMF*ET	-0.015	0.057	0.268	0.789
		Conditional direct effect at ET = M+- 1SD		
M (-1SD)	0.482	0.104	4.644	0.000
M	0.455	0.133	3.410	0.001
M (+1SD)	0.427	0.215	1.985	0.048
		Conditional indirect effect at ET = M+- 1SD		
	Value	Boot SE	LLCI	ULCI
M (-1SD)	0.217	0.085	0.015	0.352
M	0.367	0.083	0.212	0.537
M (+1SD)	0.517	0.130	0.278	0.793

n=320. Unstandardized regression coefficients are reported. Bootstrap sample size = 5000, lower limit, CI = Confidence Interval, UL = Upper Limit.

Fig. 3 ET strengthens the positive relationship between MF and CPE



tent to which a particular employee's mindfulness raises EC. This results in an integrated perspective that takes into account both the environmental and individual antecedents of creativity (Zhang & Zhou, 2014), thereby addressing the dearth of research in the said area. The findings show that in highly error-tolerant IT service firms' conscientious IT employeess are more inventive than their non-conscientious counterparts.

Theoretical Implications

This research highlights how an error-tolerant work environment (Madjar et al., 2011) fosters employee creativity (Zhang et al., 2020). Our findings show how organizational settings can motivate creative behavior, adding to existing research on factors like motivation and social connections (Malik et al., 2019) based on the 'Interactionist Model of Creativity' (Woodman et al., 1993).

An error-tolerant organizational environment enhances cognitive resources dedicated to self-regulation.

Research underscores the positive correlation between Employee Mindfulness Facilitation (EMF) and significant work-related outcomes, particularly beneficial in demanding roles like creative settings (Andrews et al., 2014). However, discrepancies in findings regarding the mindfulness-employee creativity (EC) relationship highlight the need to identify moderators (Lebuda et al., 2016). Conflicting results on contextual variables' impact on workplace creativity have been observed in prior research (Zhang et al., 2020). Our study illustrates how Error Tolerance (ET) influences the link between EMF and EC, suggesting that an error-tolerant organizational environment enhances cognitive resources dedicated to self-regulation, a vital aspect of mindfulness (Reina & Kudesia, 2020). Furthermore, we demonstrate the impact of ET on the relationship between EC and EMF, suggesting that in an error-tolerant setting, self-regulation, a crucial aspect of mindfulness, may require additional cognitive resources, contributing to boundary condition research on mindfulness. Considering that a change in behavior often follows a shift in perspective, error tolerance underpins error management (Frese & Keith, 2015), influencing employees' reactions to errors and subsequent behavior (Zhao, 2011), thus fostering open communication and support when errors occur, stimulating employee creativity (Wang et al., 2018).

Practical Implications :

This research highlights that mindfulness and a tolerant work environment (error tolerance) are key to boosting employee creativity in IT (Wang et al., 2020). IT managers should actively promote this by viewing errors as learning opportunities, not failures (Helmreich & Merritt, 2017) but as critical thinking and innovation (Zubaidah, 2018).

This research highlights creativity, openness to learning, and tolerance for mistakes as key to IT service success. To achieve this, managers should encourage open communication and implement mindfulness training (Gip et al., 2022; Burton et al., 2017). By creating an error-tolerant environment that fosters innovation and honest communication about mistakes, businesses can meet today's client demands (Weinzimmer & Esken, 2017).

Limitations & Suggestions for Future Research

Our research determined how variations in organizational ET affect EC which is crucial for gaining a competitive advantage. Despite these significant findings, there are several limitations that should be acknowledged and addressed in further research. First, even though EC was rated by employees' supervisors in an effort to reduce social desirability bias, future researchers should gather the antecedent, mediator, and outcome variables at three distinct intervals to use this longitudinal data to uncover mediation effects. To improve comprehension of the links between the dimensions examined in this study, causal linkages should be established. To increase the measurement's robustness, a multisource EC measurement is recommended. Second, despite being widely used in studies measuring mindfulness, the Mindful Attention Awareness Scale (MAAS) created by Brown and Ryan (2003) only reflects the aspect of mindfulness connected to the self-regulation of attention; it overlooks the meta-cognitive orientation of mindfulness that emphasizes an accepting and open state (Bishop et al., 2004). Multifaceted measures such as the Five Facet Mindfulness Questionnaire (FFMQ; e.g., Baer et al., 2006) and the Langer Mindfulness Scale (LMS; Bodner & Langer, 2001) should be used in future research.

Future research may look into further organizational-contextual elements (such as a positive work environment) that encourage employees' awareness and ultimately foster creativity. Third, since non-probability convenience sampling was used for this study, it is possible that the sample does not accurately reflect the traits of the entire population of interest. Therefore, in order to extend the research findings to other situations, probability sampling techniques may be used in future investigations. Lastly, research in the future may look at how employees' specific emotions—such as guilt, shame, rage, appreciation, pride, and the like—are shaped differently by their (in)tolerance of errors.

Conclusion

The modern workplace demands that IT service providers use employee potential and create more inventive work environments, which may be achieved through cognitive pathways. Mindfulness programs would be more affordable for a company than other programs, and IT companies may gain from creative solutions. Additionally, this research indicates that creating an

error-tolerant workplace for IT service providers might improve employee productivity and innovation, giving the latter a competitive advantage.

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