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Article

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MANAGEMENT | RESEARCH ARTICLE

Mediating role of employees' intrinsic motivation and psychological safety in the relationship between abusive supervision and innovative behavior: An empirical test in IT sector of Pakistan

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Muhammad Azam Ishaque Chaudhary⁵ and Laiba Yousaf²

Abstract: The employees' innovative behavior is a novel domain that has remained a topic of interest for many decades. Many researchers have found that a particular leadership style boosts the innovative behavior of employees in various contexts. However, prior research on the association between the dark side of leadership known as abusive supervision and innovative behavior revealed conflicting results. IT sector requires highly innovative employees, but the major problem faced by this sector is escalating competition and high workload, which may lead supervisors towards abusive supervision. Many theoretical models have been developed and tested, but the association of abusive supervision with employees' innovative behavior with intrinsic motivation and psychological safety as mediators has not been fully grasped in the IT sector of Pakistan. This study filled this gap and developed an explanatory model and tested the model by taking sample data from 98 respondents from IT organizations in Pakistan and applying PLS-based SEM for data analysis. The results revealed that abusive supervision is negatively associated with innovative behavior in this context. Moreover, abusive supervision is negatively associated with intrinsic motivation and psychological safety. Furthermore, intrinsic motivation and psychological safety are positively associated with innovative behavior. The results also demonstrated that the negative association of abusive supervision with innovative behavior is partially mediated by intrinsic motivation.



Amanat Ali

ABOUT THE AUTHOR

Amanat Ali is an Assistant Professor in Lahore School of Professional Studies (LSPS), The University of Lahore, Pakistan. His research interests include management sciences and business education, information technology governance and management, engineering and project management, and leadership and innovation. He has published several research papers in the field of IT governance, project management, and management sciences. Currently, his research focused on human, social and intellectual aspects in managing IT to achieve desired results in organizations.

PUBLIC INTEREST STATEMENT

The study focused on dark side of leadership i.e. abusive supervision th negatively affects employees' innovative behavior while considering two psychological mechanisms (intrinsic motivation and psychological safety) as mediators in the IT sector of Pakistan. The study suggests that abusive supervision should be avoided for developing sustainable and successful businesses. We think the study provides suggestions for leaders, supervisors and policy makers in this context instead of general public. Therefore, we are not ascertain that general public is an audience of this study.

However, psychological safety showed no mediating effect in this relationship. The results provide many theoretical and managerial implications.

Subjects: Human Resource Management; Business, Management and Accounting; Small Business Management; Human Resource Management

Keywords: Abusive supervisor; innovative behavior; intrinsic motivation; psychological safety; PLS based SEM

1. Introduction

Employees' innovative behavior has become vital for organizational survival due to highly competitive and dynamic nature of business environments. This has stimulated organizational researchers to develop useful theories in this regard. Åmo and Kolvereid (2005) defined employees' innovative behavior as "an initiative from employees concerning the introduction of new processes, new products, new markets or combinations of such into the organization". Employees' innovative behavior is indispensable for organizational success, survival, and competitiveness (Yuan & Woodman, 2010) and paramount to enhance service and quality performance (Bani-Melhem et al., 2018; Li & Hsu, 2016).

Leadership and its substantial effect on employees' innovative behavior and creativity has acquired a lot of attention in the academic literature. However, some researchers have focused on the negative side of leadership due to escalating use of abusive supervision in organizations and its negative impact on individual and organizational outcomes (Lian et al., 2012; Tepper, 2007). Tepper (2000) defined abusive supervision as "subordinates' perceptions of the extent to which supervisors engage in the sustained display of hostile verbal and nonverbal behaviors, excluding physical contact". Restubog et al. (2011) viewed it as a hierarchical stressor prepared for burdening or surpassing an employee's asset. Mitchell and Ambrose (2007) described it in many forms including just as screaming, yelling and humiliating employees. Tepper et al. (2006) characterized it as showing rudeness, blaming, taking credit of subordinates' work and invading privacy. Zhu and Zhang (2019) argued that abusive supervision adversely influences the employees' innovative behavior. However, a few researchers have found that abusive supervision is indispensable in certain conditions and is used as a tool for managerial practices (Oh & Farh, 2017; Zhang & Liu, 2018). Zhang and Liu (2018) found that in a high power culture, abusive supervision has negative impact on employees' innovative behavior, whereas in Anglo culture, supervisors' directive are usually followed and respected. In other words, employees in high power and Anglo cultures perceive abusive supervision differently. They further argued that employees in Anglo culture have greater tolerance against biased treatment from their supervisors as compared to high power culture. Their study revealed that abusive supervision can decrease repetitive behaviors of negative sense especially caused by employees' poor performance, their counter workplace behaviors and mistakes that can be avoided. Oh and Farh (2017) argued that fear and anger can lead towards promotion-focused work efforts, which further leads towards values for the organization. Other researchers have also suggested that abusive supervision is essential at workplace for employees' performance and productivity (Mitchell et al., 2015; Qin et al., 2018).

Nevertheless, some researchers tried to investigate the moderating and mediating variables that affect the association between abusive supervision and employees' innovative behavior. Ellis (1980) investigated that abusive supervision is an indirect cause of individual behavior. He further clarified that individual cognition about abusive supervision is a direct cause of individual behavior. In this way, abusive supervision affects individual cognition, which further affects individual behavior.

In order to better understand the link between abusive supervision and employees' innovative behavior, one key trait that highly matters is to investigate the role of important psychological mechanisms that may influence this relationship. The social cognitive theory developed by

Bandura (2001) proposes many psychological mechanisms that may affect individual behavior. However, Zhang et al. (2014) suggested that employees' intrinsic motivation is a strong psychological mechanism that can improve the employees' creativity. Ryan and Deci (2000) defined intrinsic motivation as "the doing of an activity for its inherent satisfaction rather than for some separable consequence. When intrinsically motivated, a person is moved to act for the fun or challenge entailed rather than because of external products, pressures, or rewards". According to Yan and Davison (2013), it also involves "performing an activity and engaging in it for the sake of the activity itself rather than for external rewards". Locke and Schattke (2019) believed that intrinsic motivation is escalated by accomplishment of a specific task that is associated with one's own satisfaction, reward or profit. Zhang et al. (2014) argued that employees' intrinsic motivation leads toward employees' creativity as higher intrinsically motivated employees perform better than others. Zhou and Hoever (2014) advocated that highly intrinsically motivated employees appear with useful and rare ideas to fulfill the challenges of creativity and innovation.

The other strong psychological mechanism used by various researchers is psychological safety (Cao & Zhang, 2020; Liu et al., 2020; Edmondson, 1999; Hirak et al., 2012; Kim et al., 2020; Uğurlu & Ayas, 2016). Clark (2020) stated that psychological safety is "a condition in which one feels (a) included, (b) safe to learn, (c) safe to contribute, and (d) safe to challenge the status quo, without fear of being embarrassed, marginalized or punished in some way". Kahn (1990) experienced it as "feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career". Liu et al. (2016) revealed that the negative association between abusive supervision and employees' creativity is influenced by psychological safety as mediator.

Hence, the association of abusive supervision with innovative behavior can be affected by intrinsic motivation and psychology safety as mediators. However, no research has been conducted using intrinsic motivation and psychology safety as mediators in this relationship in one integrated model in IT sector and even Pakistan remained unexplored. Therefore, this study investigated the mediating role of intrinsic motivation and psychological safety in the association of abusive supervision with innovative behavior in IT sector of Pakistan.

The rest of the paper proceeds as follows: The next section presents the literature review and theoretical background. Methodology is described in the third section followed by the results. Conclusion is given in the last section.

2. Literature review and theoretical background

2.1. Abusive supervision and innovative behavior

Abusive supervision is usually considered as a hassle at workplace and compels the employees for pressure reflection and emotional tiredness (Lin et al., 2013; Tepper et al., 2017). Nevertheless, supervisors play an important role to enhance employees' creativity (George & Zhou, 2002; Tierney & Farmer, 2004). Some scholars have investigated the personality and situational alleviators, which can reduce or worsen the interaction between abusive supervision and employee reaction (Martinko et al., 2011; Tepper, 2007). Martinko et al. (2011) described three environments of abusive supervisor: low, high, and moderate. In an environment of low abusive supervision, most of the employees usually perform in a typical routine ways to preserve their intellectual resources and time. In this environment, the employees think that the supervisor style is natural and neutral and do not give much attention to supervisor and perform their routine tasks. Moreover, they show reluctance to put efforts for understanding other aspect of work and trying new things. In an environment of high abusive supervision, most of the employees may use their intellectual resources to manipulate their stress. In this environment, employees' creativity and innovative behavior is negatively affected by abusive supervision. In an environment of moderated abusive supervision, most of the employees may stimulate to their work perfectly and continuously and show high level of creativity and productivity. Tian et al. (2020) revealed that abusive supervision is

negatively related with innovative behavior. Shen et al. (2020) found that abusive supervision has negative effect on employees' creativity. Hence, the following hypothesis can be formulated:

H1: Abusive supervision has negative effect on employees' innovative behavior in IT sector of Pakistan.

2.2. Abusive supervision and intrinsic motivation

Intrinsic motivation is a strong theoretical and empirical phenomenon that can affect employees' creativity and innovative behavior (Zhang et al., 2014). Intrinsically motivated employees struggle more and put utmost effort at workplace with interest, concentration and desire of learning than other employees (Deci & Ryan, 2008). At workplace, employees have more interactions with individuals such as supervisor, colleagues and subordinates. These individuals can enhance their creativity and innovative behavior through support and emotional encouragement (Mawritz et al., 2012). Hussain et al. (2020) argued that employees who face abusive supervision are intrinsically less motivated than employees who do not face abusive supervision. Ronen and Donia (2020) described that employees who face abusive supervision experience contradictions in their working tasks due to lack of intrinsic motivation. Various researchers found a negative association between abusive supervisor and intrinsic motivation (Hussain et al., 2020; Zhang et al., 2014). Therefore, the following hypothesis can be formulated:

H2: Abusive supervision has negative effect on employees' intrinsic motivation in IT sector of Pakistan.

2.3. Abusive supervision and psychological safety

Most of the employees feel threatened by abusive supervision, which further reduces employees' psychological safety (Tepper, 2000). Abusive supervision ignites the negative feelings among employees due to which they think that their supervisor is hostile and inaccessible. As a result, employees' negative cognition increases due to which they psychologically feel unsafe. When supervisor humiliates, mocks and insults the employees then, inevitably, this behavior establishes a negative relationship between supervisor and employees. Consequently, this behavior of supervisor reduces the psychological safety of the employees. Tepper (2000) also found that abusive supervision reduces trust of the employees, which is detrimental for employees' psychological safety (Li & Yan, 2007). Similarly, Fang et al. (2014) revealed that violence exposure decreases psychological safety of employees. Liu et al. (2020) revealed that supervision incivility is negatively related with psychological safety of employees. Yang et al. (2020) found that abusive supervision is negatively associated with safety behavior of employees. Thus, the following hypothesis can be found:

H3: Abusive supervision has negative effect on employees' psychological safety in IT sector of Pakistan.

2.4. Intrinsic motivation and innovative behavior

Oh and Farh (2017) found that intrinsic motivation stimulates employees' creativity. Shalley et al. (2009) revealed that intrinsic motivation develops cognitive flexibility, positive attachment, high stamina and willingness of risk taking, which are essential for creativity evolution. Prior research has identified that intrinsic motivation can increase risk taking, resistance and inspiration behavior among employees (Amabile, 1993; Deci & Ryan, 2008), and to become creative, employees are required to apply their concepts and exploit and extend opportunities so that desired results can be achieved (Amabile et al., 2004). Many factors that can give support to the employees' innovative behavior can be categorized into personal and contextual factors. Intrinsic motivation is one of

these factors that can enable employees to put his/her utmost effort to do something new. Yu and Meng (2021) found that intrinsic motivation positively affects employees' innovative behavior. Thus, the following hypothesis can be formulated.

H4: Intrinsic motivation has positive effect on employees' innovative behavior in IT sector of Pakistan.

2.5. Psychological safety and innovative behavior

Employees' psychological safety is an important cognitive mechanism (Hirak et al., 2012). It increases employees' performance, productivity, creativity and innovative behavior (Fang et al., 2014) ; Li & Yan, 2007; Tepper, 2000). If employees are psychologically safe then they are more satisfied with their job tasks and perform these tasks more effectively. Psychologically safe employees are more creative and innovative and think about new ways and perspective of performing their job tasks (Fang et al. 2014). They generate and implement new concepts and ideas due to their more satisfied and risk-taking behaviors (Li & Yan, 2007). Uğurlu and Ayas (2016) found that psychological safety is positively related with workers' affective commitment. Cao and Zhang (2020) also revealed that psychological safety is positively associated with innovative behavior. Hence, the following hypothesis can be formulated:

H5: Employees' psychological safety has positive effect on employees' innovative behavior in IT sector of Pakistan.

2.6. Mediating role of intrinsic motivation

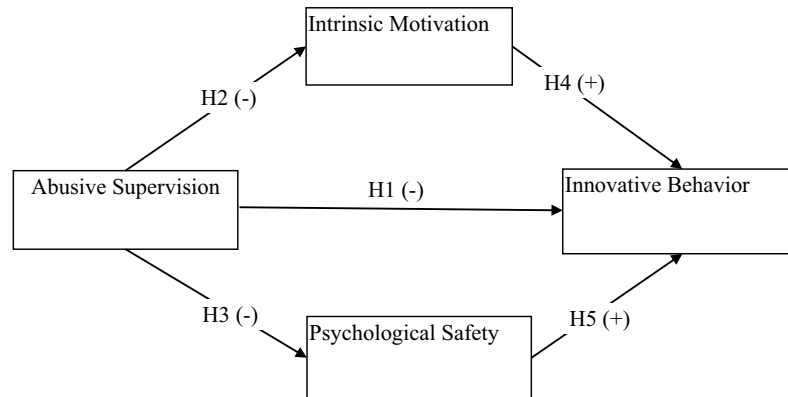
The influence of abusive supervision on employees' innovative behavior is affected by individual traits (Tian et al., 2020) because abusive supervision is assessed subjectively (Zhu & Zhang, 2019). Intrinsic motivation is one of the personal traits that can play a mediating role in this association. Employees with high intrinsic motivation execute tasks more eagerly and sincerely because tasks are more enjoyable and gratifying for them and fulfill their basic needs (Zhou et al., 2019). However, in an environment of abusive supervision, employees often consider it as a personal offence and an attack on their competence and autonomy (Miao et al., 2020). Therefore, their innovative behavior is negatively affected (Tian et al., 2020). However, with high intrinsic motivation, the negative association of abusive supervision with innovative behavior can be reduced because they emphasize more on positive emotions, inner desires and goals. Many researchers used intrinsic motivation as a mediator in the association of abusive supervision with innovation behavior, team innovation, creativity, psychological wellbeing and turnover intention (Hussain et al., 2020; Javaid & Hanif, 2018; Zhang et al., 2014). Thus, the following hypothesis can be formulated:

H6: Intrinsic motivation mediates the relationship between abusive supervision and employees' innovative behavior in IT sector of Pakistan.

2.7. Mediating role of psychological safety

Employees' psychological safety is an important cognitive mechanism that matters in the association of employees' supervision with their behavior (Hirak et al., 2012). Kim et al. (2020) argued that psychological safety is an engine of employees' performance rather than a fuel. Creative or innovative behavior requires good working conditions, motivation and psychological safety. Innovative or creative activities need employees to assert large resources and energy (Byrne et al., 2014). Management behaviors by the leaders at workplace like insults, accusation and continuous criticism give negative signal to the employees, which they manage through more energy and tolerance. Parker et al. (2010) revealed that leadership style indirectly

Figure 1. Research model.



affects employees' behavior through internal psychological state. Binyamin and Carmeli (2010) found that psychological safety is an important emotional condition that can considerably mediate the association of uncertainty, stress and leadership style with employees' creativity. Liu et al. (2016) revealed that psychological safety is one of the important mediators in the complex association of abusive supervision with employees' creativity. Therefore, it can be hypothesized that:

H7: Employees' psychological safety mediates the relationship between abusive supervision and employees' innovative behavior in IT sector of Pakistan.

2.8. Research model

Based on the hypotheses, a research model is developed as shown in Figure 1. It consists of "abusive supervision" as independent variable and "innovative behavior" as dependent variable. Moreover, "intrinsic motivation" and "psychological safety" are treated as mediating variables. The independent variable negatively affects the dependent variable. The association of the independent variable with the dependent variables is mediated by psychological mechanisms, "intrinsic motivation" and "psychological safety".

3. Methodology

3.1. Operational measures

In order to assess the variables of the research model, previously constructed and well-established items were used. These items were thoroughly discussed with three experts in IT organizations of twin cities of Islamabad and Rawalpindi. After detailed deliberation and review, the experts suggested some minor amendments to the original items. These amendments were made to finalize the questionnaire. Innovative behavior was assessed by means of "six items" adapted from Scott and Bruce (1994). Abusive supervision was assessed by means of "five items" adapted from Mitchell and Ambrose (2007). Intrinsic motivation was assessed by means of "five items" adapted from Gagné et al. (2010). Psychological safety was assessed by means of "six items" adapted from Edmondson (1999). All the items were assessed on a "five-point Likert scale (1- Strongly Agree; 5- Strongly Disagree)".

3.2. Sample and sampling technique

Creswell (2009) specified that "a sample is a sub set of population". He argued that most of the time, it is very expensive to collect data from the whole population, so a representative sample is usually recommended to collect data. He further contended that respondents in the sample should possess one or more common characteristics in order to make sample representative. For this

study, employees of all IT organizations in the twin cities were the part of the population. IT organizations were selected because of good source of competitive advantage for Pakistan. These organizations are attracting considerable private investment and profoundly contributing to the gross domestic product (GDP) of Pakistan. Süygün (2021) defined “GDP is the total market value of all the finished goods and services produced within a country’s borders in a specific time”. However, we selected only those organizations in which extra work is a common practice. Due to load of extra work, supervisors may demonstrate abusive behavior towards their employees to meet the settled targets. Random sampling technique was applied to collect meaningful data. The unit of analysis was individual. The “10-times rule” method is commonly used to estimate minimum sample size for PLS-based SEM analysis (Kock & Hadaya, 2016; Peng & Lai, 2012). The method is based on the assumption that minimum sample size should be larger than 10 times the highest number of links pointing at any latent variable. In our model, the maximum indicators were 6 (innovative behavior and psychological safety both have six indicators each); therefore, the minimum sample size should be 60. Moreover, Marcoulides and Saunders (2006) suggested that at 5% significant level ($R^2 \geq 80$ and 80% statistical power), the minimum sample size for a model having latent variable(s) with the maximum 6 indicators should be 75. Hence, 250 questionnaires were distributed in IT organizations of the twin cities to ensure the minimum sample size.

3.3. Data collection technique

The study used first-hand primary data collected from the participants. Survey questionnaires were used to get data due to the casual nature of the study. Questionnaires were distributed in English language. Almost 20–30 questionnaires were distributed in each IT organization in twin cities through the focal persons for quick response. Information about all the items i.e., abusive supervision, employees’ innovative behavior, employees’ intrinsic motivation and employees’ psychological safety was provided by the employees/subordinates only.

3.4. Data analysis approach

For data analysis, Smart PLS was applied due to its capability and familiarity for analyzing data without imposing normality assumptions (Hair et al., 2019) and small sample sizes (Peng & Lai, 2012).

4. Results

4.1. Sample characteristics

After two reminders besides original call, only 98 fully completed questionnaires were returned. The remaining 152 respondents did not reply. In this way, the response rate was 39.2%. Due to limited number of IT organizations and tight organizational selection criteria, this response rate was in line with our expectations as we selected organizations with heavy work load due to which the chances of abusive supervision can be at higher rate. The characteristics of the sample are shown in Table 1. It is clear from Table 1 that most of the respondents belonged to IT support staff & users followed by IT administrators and IT developers. It also shows that median experience of the respondents is 8 years, and majority hold a Bachelor degree followed by an MS degree and Intermediate degree. Table 1 also shows that most of the respondent belonged to the age group from 31 to 35 years.

We also performed non-response bias and common method bias tests to ensure that the collected data is safe for further analysis. The results revealed that there was no issue of non-response bias and common method bias in the collected data.

4.2. Analysis of measurement model

The results of PLS algorithm are shown in Tables 2–4. This is clear from Table 2 that “items loading”, “Cronbach’s alpha”, “composite reliability (CR)” and “average variance extracted (AVE)” are higher than 0.7, 0.7, 0.7 and 0.5, respectively, which are the minimum thresholds (Hair et al., 2017). Hence, there is no issue of convergent validity in the collected data. Moreover, the results of Table 3 show

Table 1. Sample characteristics

Respondents (n = 98)	Frequency	Percentage
Role in organization		
IT Managers	16	16.33%
IT Developers	20	20.41%
IT Administrators	27	27.55%
IT Support Staff & Users	35	35.71%
Experience	Median	
Experience (in years)	8	
Qualification		
MS degree	26	
Master or Bachelor degree	50	
Intermediate degree	18	
Others	4	
Age (in years)		
Below 26	0	
26 to 30	12	
31–35	74	
Above 35	12	

that items loading on its own construct (variable) is higher than the loading on other constructs (variables), which is a necessary requirement for item loading (Gefen & Straub, 2005). Furthermore, Table 4 shows that square root of AVE (shown in bold) is higher than correlations of other constructs, which is required to establish discriminant validity (Fornell & Larcker, 1981). Hence, there is no issue of discriminant validity in the collected data. We can say that our data is safe for further analysis.

4.3. Analysis of structural model

The results of PLS algorithm regarding variance (R^2) are given in Table 5. The results indicate that the variance (R^2) in endogenous variable IB explained by its exogenous variables AS, IM and PS are 0.705, which is above the minimum threshold of 0.5 (Hair et al., 2017). Similarly, the variance (R^2) in endogenous variables IM and PS explained by their exogenous variable AS is 0.554 and 0.546, respectively, which meets higher than required threshold of 0.5.

The results of PLS algorithm and bootstrapping regarding path confident strength (β) and significance (t-value), respectively, are given in Table 6 and Figure 2. It is clear from Table 6 that AS has negative effect on IB ($\beta = -0.323$, $t = 3.356$). Therefore, it provides clear evidence that H1 is supported. Similarly, AS has negative effect on both IM ($\beta = -0.475$, $t = 5.312$) and PS ($\beta = -0.253$, $t = 3.426$). Hence, H2 and H3 are also supported. The results in Table 6 further reveal that IM has positive effect on IB ($\beta = 0.570$, $t = 6.319$). Similarly, PS has also positive effect on IB ($\beta = 0.341$, $t = 3.818$). Hence, hypotheses H4 and H5 both are supported.

However, it is not clear at this stage whether H6 and H7 are supported or otherwise. For this, mediating analysis is needed as shown in Table 7. By following the procedure provided by Hair et al. (2017), the researcher performed mediating analysis to test hypotheses H6 and H7. First, the researcher tested the effect of AS on IB by excluding IM and PS from the model. The results indicated a negative of AS on IB ($\beta = -0.552$, $t = 8.754$). Second, the researcher tested direct and indirect effect of AS on IB by including IM and PS in the model. The results indicated a direct negative effect of AS on IB ($\beta = -0.323$, $t = 3.356$) and indirect negative effect of AS on IB

Table 2. Converged validity

Variable	Items	Loading	Cronbach's Alpha	CR	AVE
Abusive Supervision (AS) (5-items)	AS1	0.784	0.798	0.753	0.662
	AS2	0.743			
	AS3	0.774			
	AS4	0.767			
	AS5	0.765			
Intrinsic Motivation (IM) (5-items)	IM1	0.778	0.814	0.877	0.724
	IM2	0.754			
	IM3	0.812			
	IM4	0.790			
	IM5	0.877			
Psychological Safety (PS) (6-items)	PS1	0.779	0.803	0.824	0.752
	PS2	0.742			
	PS3	0.867			
	PS4	0.774			
	PS5	0.813			
	PS6	0.734			
Innovative Behavior (IB) (6-items)	IB1	0.783	0.804	0.799	0.622
	IB2	0.747			
	IB3	0.769			
	IB4	0.742			
	IB5	0.765			
	IB6	0.790			

($\beta = -0.271$, $t = 2.990$). Hair et al. (2017) mentioned that mediation takes place when both direct and indirect are significant. However, it depends on the value of variance accounted for (VAF). They further explained that a value of VAF between 0 and 0.20 means no mediation, between 0.20 and 0.80 means partial mediation and greater than 0.80 means full mediation. They provided a formula for VAF calculation i.e. “VAF = Indirect effect/Total effect”, where “Total effect = direct effect + indirect effect”. Therefore, using results of Table 6, the VAF was calculated for IM i.e. $VAF = (-0.271)/(-0.323 + -0.271) = 0.456$. It means 45.6% effect on IB can be explained through IM

Figure 2. Research model and PLS-SEM results.

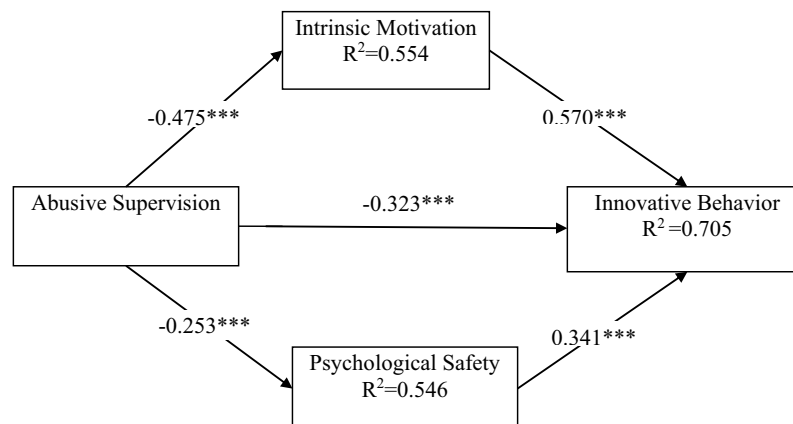


Table 3. Items cross loading

	AS	IM	PS	IB
AS1	0.784	0.354	0.476	0.493
AS2	0.743	0.318	0.482	0.502
AS3	0.774	0.440	0.413	0.422
AS4	0.767	0.432	0.501	0.398
AS5	0.765	0.345	0.498	0.407
IM1	0.451	0.778	0.416	0.364
IM2	0.364	0.754	0.423	0.528
IM3	0.324	0.812	0.387	0.488
IM4	0.276	0.790	0.519	0.471
IM5	0.310	0.877	0.493	0.390
PS1	0.321	0.451	0.779	0.511
PS2	0.431	0.455	0.742	0.378
PS3	0.342	0.375	0.867	0.438
PS4	0.369	0.337	0.774	0.433
PS5	0.422	0.370	0.813	0.375
PS6	0.353	0.314	0.734	0.469
IB1	0.452	0.516	0.507	0.783
IB2	0.224	0.586	0.444	0.747
IB3	0.373	0.521	0.356	0.769
IB4	0.316	0.550	0.578	0.742
IB5	0.480	0.505	0.348	0.765
IB6	0.578	0.464	0.444	0.790

Table 4. Fornell and Larker criterion

	AS	IM	PS	IB
AS	0.813			
IM	0.462	0.851		
PS	0.393	0.476	0.887	
IB	0.334	0.415	0.438	0.789

Table 5. The variance (R^2)

Endogenous Variable	R^2
IB	0.705
IM	0.554
PM	0.546

mediator. In other words, AS transmits 45.6% of its effect through IM. Therefore, IM acts as partial mediator because the effect is in a range between 0.20 and 0.80. However, VAF cannot be calculated for PS because indirect effect of AS on IB through PS is not significant. Hence, it can be said that PS is not a mediator. It can be concluded that IM is a mediator and PS is not a mediator. Thus, H6 is supported whereas H7 is not supported.

4.4. Discussion

The study investigated whether abusive supervision could affect innovative behavior in IT sector of Pakistan and whether psychological mechanisms, intrinsic motivation and psychological safety

Table 6. Path coefficient strength and significance

Path	β	t-value	Hypotheses
AS→IB	-0.323	3.356	Supported
AS→IM	-0.475	5.312	Supported
AS→PS	-0.253	3.426	Supported
IM→IB	0.570	6.319	Supported
PS→IB	0.341	3.818	Supported

could mediate this effect in this context. The social cognitive theory was adopted as a lens of perspectives in this study. The results demonstrate that abusive supervision decreased innovative behavior. This is in accordance with prior studies (Shen et al., 2020; Tian et al., 2020). Moreover, the results demonstrate that the association of abusive supervision with innovative behavior was partially mediated by intrinsic motivation. This is also in line with prior studies (Hussain et al., 2020; Javaid & Hanif, 2018). Furthermore, the results demonstrate that the association of abusive supervisor with innovative behavior was not mediated by psychological safety, which is the surprising result of the study. Previous studies demonstrate that psychology safety mediates the association of abusive supervision with innovative or creative behavior (Liu et al., 2016; Zhu & Zhang, 2019). The results are crucial for long-term organizational goals for developing sustainable and successful businesses. At the same time, the results are beneficial for individuals in the long run. Abusive supervision adversely affects employees in the form of physical and mental distress (Restubog et al., 2011), resulting in decreased desire for learning and creativity (Shen et al., 2020; Tepper, 2007). Innovative behavior is vital for individuals and businesses. Without innovation, a business cannot take competitive advantage and long-term benefits and expansion. Human behavior and subjective initiative is crucial for the growth, sustainability and success of the businesses, which cannot be ignored.

4.4.1. Theoretical implications

The study adds into the existing literature in various ways and therefore provides many theoretical implications. First, the study was constructed upon the prior literature pertaining to abusive supervision, intrinsic motivation, psychological safety and innovative behavior in the form of an explanatory model. As psychological mechanisms, intrinsic motivation and psychological safety are concepts drawn from social cognitive theory, and it is cogent to use this theory to develop and interpret the model. By investigating the mediating role of intrinsic motivation and psychological safety, the study used social cognitive theory to describe the effect of abusive supervision on innovative behavior. Second, the study examined the mediating role of intrinsic motivation through which abusive supervision influenced innovative behavior. As per social cognitive theory, abusive supervision decreased the cognition of intrinsic motivation (Hussain et al., 2020; Zhang et al., 2014) and innovative behavior increased when intrinsic motivation increased (Yu & Meng, 2021). Third, the study investigated the mediating role of psychology safety through which abusive supervision did not affect innovative behavior. According to social cognitive theory, abusive supervision decreased the cognition of psychological safety among employees (Liu et al., 2020; Fang et al., 2014; Yang et al., 2020) and innovative behavior increased when psychological safety increased (Cao & Zhang, 2020; Uğurlu & Ayas, 2016). Finally, the prior studies in America (Tepper et al., 2011) and China (Tian et al., 2020) revealed that abusive supervision is detested style of management despite the cultural differences, and Pakistani IT sector is no exception. Therefore, this annoying management style needs more attention by the future researchers. The study is beneficial to the existing literature on abusive supervision, innovative behavior, intrinsic motivation and psychological safety.

Table 7. VAF(variance accounted for)

Path	θ	t-value
AS→IB (Direct Effect)	-0.323	3.356
AS→IB (Indirect Effect through IM)	-0.271	2.290
VAF for AS = Indirect Effect/Total Effect		
Total Effect = Direct Effect + Indirect Effect		
VAF for AS = $-0.271 / (-0.323 + -0.271) = 0.456$		
It means 45.6% effect on IB can be explained through IM mediator. In other words, AS transmits 45.6% of its effect through IM. Therefore, IM acts as partial mediator because the effect is in a range between 0.20 and 0.80.		
VAF 0-0.2 No mediation		
VAF 0.2-0.8 Partial mediation	Hair et al. (2017)	
VAF Above 0.8 Full mediation		

4.4.2. Managerial implications

The study also inculcates many implications for practitioners and managers. First, abusive supervision reduces innovative behavior. Therefore, organizations should take necessary measures to mitigate it. Managers should monitor the behavior of supervisors because abusive supervision is counterproductive for long-term development, sustainability and success of businesses. They can conduct anonymous surveys as employees' feedback to assess the behavior of supervisors. They can conduct training workshops to improve supervisors' management styles. Management should promote an excellent organizational culture to discourage abusive supervision and should regulate supervisors' behavior. In this culture, supervisors can develop good rapport with employees to avoid abusive supervision. Moreover, intrinsic motivation mediates the association of abusive supervision with innovative behavior. Therefore, it is crucial for managers to emphasize on intrinsic motivation. The higher is the intrinsic motivation, the higher is the innovative behavior. Organizations should employ individuals with higher intrinsic motivation. Hence, organizations should foster employees' intrinsic motivation through focused training and inculcating team building skills among them to escalate innovative behavior. Furthermore, psychological safety did not mediate the association of abusive supervision with innovative behavior. It does not mean psychological safety should be disregarded at all. It may have moderating effect on this relationship. Therefore, emphasis should also be placed on psychological safety of employees. The policy makers in IT organizations of Pakistan can use the results to develop new strategies and plans or updating existing one to improve innovative behavior in their context. They can use the results to understand determinants of innovative behavior and consequently implement it for organizational success.

5. Conclusion

The study investigated the mediating role of psychological mechanisms, intrinsic motivation and psychological safety in the association of abusive supervision with innovative behavior in IT sector of Pakistan, which was previously unexplored. The social cognitive theory was adopted as lens of perspectives in this study. The results revealed that intrinsic motivation partially mediated the association of abusive supervision with innovative behavior in this context. However, psychological safety showed no mediating effect in that association. The study emphasized the dark side of supervision known as abusive supervision and resulting behavior of employees against abusive supervision. The results suggest that abusive supervision negatively related with innovative behavior. Moreover, intrinsic motivation mediated the association of abusive supervision with innovative behavior. Furthermore, psychological safety did not mediate the association of abusive supervisions with innovative behavior. The results are beneficial for IT sector organizations to develop and sustain successful businesses. The study

also possesses some limitations. Therefore, the results should be used with care as the study has been conducted in IT sector with extra workload where probability of abusive supervision is high. Other sectors may have different findings when the same research model will be tested in these sectors. Although the sample was a representative sample but there is always possibility to do new research with larger sample size, which enhances the generalizability of the results. The study provides some recommendations for future researchers. The future researchers can test the research model with larger sample size in other sectors. They can extend the model with other psychological mechanisms as mediators or moderators or both. They can also sought the qualitative opinion of the respondents to gain more insight into abusive supervision, innovative behavior, intrinsic motivation and psychological safety in other organizational contexts.

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