



Investigating the Effects of Workplace Bullying on Employee's Proactive Safety Behavior: Exploring the Mediating Role of Emotional Exhaustion

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ABSTRACT

Organizations today face several issues, including workplace bullying (WB) which not only affects individuals but also reduces organizational productivity. The present study examines the impact of WB, measured through social exclusion (SE), verbal harassment (VH), and toxic leadership (TL), on proactive safety behavior (PSB) among employees working in the aviation industry. Emotional exhaustion (EE) is also used in the study as a mediator between WB and PSB among employees. The study's target population is the employees working in the aviation industry, and we collected cross-sectional data from 308 respondents who were employees at Jinnah International Airport (JIAP), Karachi. Data were collected during August and September 2023. SPSS-20 was used to conduct statistical analysis and estimate the aforementioned relationships. The empirical results reveal that all forms of WB have a significant and negative effect on PSB among employees. Moreover, the study also found a significant mediating relationship between WB and PSB among employees. Therefore, the findings suggest that the airline industry needs to establish a safe and bullying-free working environment for employees' better physical and psychological well-being. Moreover, the study recommends the establishment of a confidential complaint management system to address WB-related issues. Lastly, it suggests setting up a psychological consultation department for employee counseling. However, it is important to note that the study's limited timeframe and focus on a single airport may limit the generalizability of the results.

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1. Introduction

Organizations today face several internal and external challenges while striving for their sustainability and growth. Workplace bullying (WB) has been identified as the most serious internal challenge across industries (Ahmad et al., 2021). The aviation industry is no exception, struggling with the issue of WB (Munro & Phillips, 2023; Singh et al., 2022). Several past studies reported that WB not only affects employees' welfare but also extends its effects to passengers and bystanders (Leape & Fromson, 2006; Munro & Philips, 2023). Adverse effects of WB are reported across almost every industry (Rossiter et al., 2018). Recent empirical studies suggest a relationship between poor performance, specifically among employees, and a reduction in proactive safety behavior (Jahanzeb & Fatima, 2018). Furthermore, other concerns include employee retention in organizations dealing with WB, which ultimately complicates the efforts of the human resource department in retaining employees (Fahie & McGillicuddy, 2021).

Several recent empirical studies have examined the effects of WB on employees and organizations (Hendrickson, 2022; McCabe, 2020; Srivastava & Agarwal, 2020). Einarsen and Skogstad (1996) defined WB as a situation where a person or a group consistently experiences mistreatment, making it challenging to survive in such an environment. Another study by Nielsen et al. (2020) differentiates WB from a specific event of conflict or dispute. Consequently, the WB can significantly disturb day-to-day routines and workplace dynamics (Zapf et al., 1996). Moreover, WB is often classified as a 'silent epidemic' and victims hesitate to report it due to potential job-related consequences (Bartlett & Bartlett, 2011; Troop-Gordon, 2017; Yao et al., 2022). This underreporting is a critical concern, as it impedes the understanding and addressing of WB in organizational settings.

The study is relevant because of the critical impacts that organizational culture and leadership style have on employee behavior and safety practices in several industries (Ali, 2006; Zohar & Luria, 2005). Although, the aviation industry is recognized for its rigorous safety standards globally, however, it has been unable to prevent the negative consequence of WB on employees. This gap in the literature is particularly pronounced in the context of Pakistan's aviation industry. However, existing literature reported an adverse impact of WB on employee well-being and organizational performance particularly for developed countries (Einarsen et al., 2020).

To the best of our knowledge, our study is the first to examine the dynamics of WB in the context of the aviation industry of a developing country. This study fills this knowledge gap and contributes to the literature by examining the effects of WB, measured by Social Exclusion (SE), Verbal Harassment (VH), and Toxic Leadership (TL), on Emotional Exhaustion (EE) and Proactive Safety Behavior (PSB) among employees in the aviation industry of Pakistan. Furthermore, our study also provides insights into the cultural and organizational nuances in the aviation industry specific to a developing-country context, which have been largely ignored in the literature (Leon-Perez et al., 2021).

Furthermore, the study contextualizes WB as consistent negative treatment, including a range of toxic behaviors that extend beyond mere interpersonal conflicts (Einarsen & Skogstad, 1996). Generally, the adverse effects of WB are multidimensional, it not only affects employees' behavior but also lowers organizational productivity, reputation, and culture, increasing the environment of mistrust and fear (Hoel et al., 2001; Lutgen-Sandvik et al., 2007; Pradhan & Jena, 2018; Salin, 2003), but also increases the costs due to absenteeism and turnover (Rayner & Keashly, 2005), reduces



employees' morale (Leymann, 1996), and increases insecurity of demoralized employees (Nielsen et al., 2010).

The paper is further organized as follows: Section 2 discusses a brief review of the literature. The methodology is discussed in Section 3, followed by the results and discussion in Section 4. In section 5, the conclusion is reported, and the study's limitations and implications are presented in section 6.

2. Literature Review

2.1 Theoretical Literature

The social exchange theory (SET) proposed by Homans (1958) provided the theoretical foundation for this study. According to SET, when individuals are engaged in a transaction, they expect to receive identical treatment from each other such as respect, love, or appreciation. Several studies examined the effects of WB on employees' behavior in various industries (Hobfoll, 1989; Lawler, 2001; Munir et al., 2016; Srivastava & Agarwal, 2020). The theory also argues that a bullying-free workplace improves employee's performance and motivation, and their behaviors toward their peers (Mickson et al., 2021). Conversely, theory predicts employees' poor performance and negative behaviors if they experience WB or unfair treatment in the workplace (Robinson, 2008; Saleem et al., 2021). Furthermore, the adverse impacts of WB are not limited to the employer-employee relationship, but they also harm the workplace environment and organization culture, making it difficult for the victims of WB to work (Einarsen & Skogstad, 1996; Parzefall & Salin, 2010). Precisely, SET postulates that WB always harms the motivation, productivity, and potential of employees and creates an unproductive working environment in the workplace (Hobfoll, 1989). Consequently, victims (employees facing consistent WB) might become emotionally exhausted and adopt a permanent negative behavior toward their peers (Mickson et al., 2021; Saleem et al., 2021). Therefore, WB affects employees PSB through EE.

2.2 Hypotheses Development

2.2.1. Social Exclusion and Proactive Safety Behavior

In the literature, social exclusion (SE) refers to a situation in which an employee feels ignored by peers or seniors in the workplace (Ferris et al., 2008). SE can take several forms, such as being omitted from important email chains, being unnoticed for significant roles, or experiencing consistent disregard for contributions (Anderson & Bushman, 2002). Although SE might be perceived as a self-created belief, several studies argue that it can be an intentional behavior where employees are deliberately ignored due to factors such as group cohesion or the maintenance of the status quo in the organization (Pillutla & Thau, 2009; Alexander, 1974). Furthermore, regardless of whether SE is intentional behavior or not, it significantly affects employees' motivation and performance, thereby reducing Proactive Social Behavior (PSB) in the workplace (Ferris et al., 2008; Jahanzeb & Fatima, 2018; Thau et al., 2007). Thus, the study proposes the following hypothesis:

H₁: SE negatively affects the PSB among employees in the aviation industry.



2.2.2 Verbal Harassment and Proactive Safety Behavior

In the literature, verbal harassment (VH) refers to remarks that are derogatory, sexual, or discriminatory, hurting the self-esteem of individuals and creating psychological distress in the workplace (Gruenigen & Karlan, 2018). Several past studies highlighted the adverse effects of VH on employee satisfaction and motivation which reduce their productivity (Einarsen et al., 2020; Nielsen & Einarsen, 2012; Tepper, 2007). Furthermore, VH harms the workplace environment, reducing the PSB of employees (Einarsen et al., 2020; Hendrickson, 2022; McCabe, 2020). Consequently, demoralized employees working in an organization would not effectively participate and organizational performance would go down (Hershcovis & Barling, 2010). Thus, several studies focused on and suggested necessary measures to resolve the issue of VH and maintain a stress-free working environment (McCabe, 2020). Based on the literature, VH is considered to be a significant factor affecting employees' PSB, especially in the service industry where employees' motivation and productivity are crucial factors. Thus, the study proposes the following hypothesis:

H₂: VH negatively affects the PSB among employees in the aviation industry.

2.2.3 Toxic Leadership and Proactive Safety Behavior

In the literature, another form of WB is toxic leadership (TL), defined as a situation where individuals experience unsupportive and abusive behavior (Yavaş, 2016). TL not only affects employees' personal physical and psychological health but also deteriorates organizational performance (Fisher, 2000; Malik et al., 2019). Similarly, Glas et al. (2006) reported that TL weakens employee-employee relationships, creating communication gaps and mistrust among them. Several recent studies have reported an adverse impact of TL on organizational performance and employees' PSB (Rizani et al., 2022; Kayani & Alasan, 2021). Thus, the study proposes the following hypothesis:

H₃: TL negatively affects the PSB among employees in the aviation industry.

2.2.4. Emotional Exhaustion, Social Exclusion, and Proactive Safety Behavior

In the literature, emotional exhaustion (EE) is identified as one of the main factors reducing PSB among employees (Chi & Liang, 2013; Whitman et al., 2014). Generally, EE is defined as a state of mind when individuals have lost their interest, satisfaction, and energy to further participate in the workplace, leading to a lower level of PSB (Maslach & Jackson, 1981; Stelnicki et al., 2021). The aviation industry is characterized as one of the most stressful working environments, dealing with passengers' safety, service quality, and airline performance, where EE is considered an important factor (Anasori et al., 2020; Peng et al., 2016). Furthermore, several studies argue that employees who experience SE may also find themselves in a state of EE, resulting in a lower level of PSB (Chi & Liang, 2013; Whitman et al., 2014). Thus, the study proposes the following hypothesis:

H₄: EE mediates the relationship between SE and PSB among employees in the aviation industry.

2.2.5. Emotional Exhaustion, Verbal Harassment, and Proactive Safety Behavior

Furthermore, several studies reported that VH adversely affects employees' behavior and results in lower self-esteem (Wheeler et al., 2013; Wu et al., 2020). Such behaviors of employees are unsustainable and ultimately reduce employees' motivation, create EE, and diminish PSB among them (Davis, 2020; Hendrickson, 2022; Smith et al., 2018). Particularly in service industries like aviation, multiple empirical studies have found that VH strongly impacts employees, causing severe stress, depression, and EE, which negatively affects PSB among employees (Hu et al., 2017; Jung &

Yoon,2019; Mendonca & D’Cruz, 2021; Said & Tanova, 2021). Thus, the study proposes the following hypothesis:

H₅: EE mediates the relationship between VH and PSB among employees.

2.2.6. Emotional Exhaustion, Toxic Leadership and Proactive Safety Behavior

Similarly, TL may also increase distress, mistrust, depression, and demotivation among employees. Consequently, employees lose motivation and experience EE. This EE may reduce the incentives for employees to exhibit PSB in the workplace (Escartin et al., 2021). Furthermore, recent studies have provided empirical evidence of a significant mediating relationship between TL and PSB among employees (Fan et al.,2023; Niu et al.,2022). Thus, the study proposes the following hypothesis:

H₅: EE mediates the relationship between TL and PSB among employees.

2.3 Conceptual Framework

The study has developed a conceptual framework (shown in Figure 1) based on the theoretical and empirical literature of WB and PSB. Specifically, the WB, measured by SE, VH, and TL EE, affects EE which ultimately reduces PSB among employees.

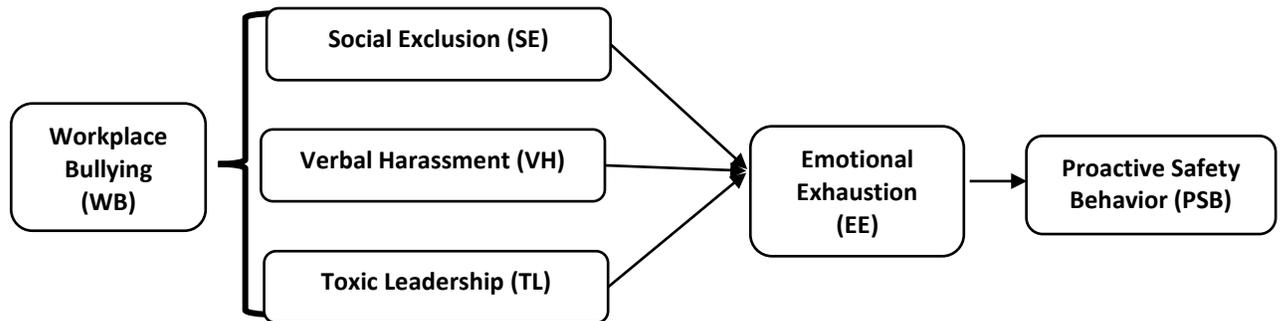


Figure 1. The Conceptual Framework of Proactive Safety Behavior

3. Methodology

The objective of our study is to estimate the effects of WB on PSB among employees in the aviation industry of Pakistan. Furthermore, the study used EE as a mediator between WB and PSB in the study. The details methodology is discussed in the subsequent subsections using the approach given by Saunders et al. (2009).

3.1. Research Philosophy

The research philosophy of this study is Positivism. This philosophical approach believes that ‘true knowledge’ is obtained through scientific or empirical methods, not from the researcher’s perspective (Park et al., 2019; Saunders et al.,2007). Furthermore, this approach encourages the formulation of research question(s) and testable hypotheses (Ray, 2017).

3.2. Research Approach

The study has employed a *deductive approach* because it has developed a few testable hypotheses based on the existing literature. Subsequently, the study collected data and empirically tested the hypotheses (Newman, 2000). Furthermore, the study has collected data that is numerical or quantifiable, classifying this study as *quantitative research* (Bloomfield & Fisher, 2019).



Furthermore, the study has examined the effects of WB on PSB, with a specific focus on the mediating role of EE, making this study *explanatory* (Tonnissen & Teuteberg, 2020).

3.3. Research Method Choice, Strategy, and Time Horizon

This study has used one single data collection technique (the survey approach) and analytical procedure (quantitative) throughout the entire research process, indicating that our research falls into the category of *mono-method research* (Bell & Bryman, 2007; Saunders et al., 2007). In addition, this study has used *survey research* as its research strategy. Specifically, a structured questionnaire was adopted consisting of thirty questions divided into six different sections to collect responses. The first section covered demographics and the subsequent five sections focused on one variable, each derived from the conceptual framework and were assessed using a 5-point Likert scale. The references of the constructs used in the study are shown in Table 1. Moreover, a *cross-sectional* research design was chosen, enabling the collection of data at a single point in time (i.e., August to September 2023) providing a snapshot of the phenomena under analysis (Uddin et al., 2023).

3.4 Techniques and Procedures

The target *population* for this study comprised employees directly involved with aircraft operations at Jinnah International Airport (JIAP), Karachi, Pakistan. Further, the *sample size* was determined through the ‘Raosoft calculator’ at a 5% level of significance, with a final response rate of 82% producing 308 responses. In addition, to capture the large number of respondents in a short period and to increase respondent diversity in the sample, the study has utilized two sampling methods, convenience and snowball sampling. Furthermore, SPSS-20 was used for statistical analysis, and the choice of the software is based on its accuracy and reliability (Iqbal et al., 2023a; Rao Jada et al., 2019). Lastly, the research fulfilled ethical standards and took care of respondents’ privacy.

Table 1. Constructs Used in the Study

Constructs (Variables)	No. of Items	Source
Social Exclusion (SE)	5	Hitlan & Noel (2009)
Verbal Harassment (VH)	5	Jeong et al. (2015)
Toxic Leadership (TL)	5	Malik et al. (2019)
Emotional Exhaustion (EE)	5	Malik et al. (2019)
Proactive Safety Behavior (PSB)	5	Mei et al. (2020)

3.5 Common Method Bias

The study has performed Harman’s single factor (HSF) test proposed by Harman (1976) to check whether or not the research data of our study suffer from the common method bias (CMB). CMB is a systematic error that is largely based on the data collection method and the possibility of CMB is relatively high in the cross-sectional design because data are collected from the same respondents for all variables. (Mackenzie & Podsakoff, 2012). Further, the CMB also adversely affects the validity of the empirical findings (Podsakoff et al., 2003). In particular, CMB is measured



by the percentage of variance extracted by using a single factor (MacKenzie & Podsakoff, 2012), and a value exceeding 0.5 (or 50%) indicates the presence of CMB.

3.6 Respondents' Profile

The study collected 308 complete responses using a Google-form-based online survey. The summary of respondents' profiles is reported in Table 2. The results indicate that a majority of respondents were males (61.3%), while 38.7% were female suggesting that the aviation industry is male-dominated in Pakistan. Furthermore, the majority of respondents fell within the age range of 25 to 35 years (43.5%) followed by the age group of 36 to 45 years (28.2%). Approximately 19.4% of participants were below the age of 25 years, 6.5% were in the age group of 46 to 60 years, and only 2.4% were above the age of 60. Furthermore, the results reveal that the majority of respondents hold a bachelor's degree (53.5%), followed by those with intermediate education (26.6%), a master's degree (10%), and matriculation (7.8%). In addition, a majority of employees (58.4%) had work experience ranging from 11 to 20 years, while 36.3% of employees had experience ranging from 1 to 10 years. Only 16 out of 308 employees (5.1%) had work experience above 20 years.

In terms of occupation, the largest group consisted of cabin crew (30.6%), followed by ground handlers at 22.6%. Additionally, 16.9% were employed as aircraft engineers or technicians, while 15.3% were identified as air traffic controllers, and 14.6% as pilots. Lastly, in terms of the airline, the largest proportion of respondents were affiliated with Airblue (26.6%), followed by PCCA (17%), PIA (16.9%), Menzies-RAS (5.7%), and Gerry's Dnata (5.7%). Furthermore, 28.2% of responses were provided by employees working in 'other' aviation organizations not specified in the questionnaire.

Table 2. Respondents Profile

Individual Characteristics		Frequency	Percentage (%)
Gender	Male	189	61.3
	Female	119	38.7
	Total	308	100
Age Group	Below 25	60	19.4
	25 to 35	134	43.5
	36 to 45	87	28.2
	46 to 60	20	6.5
	Above 60	7	2.4
	Total	308	100
Education	Matriculation	30	7.8
	Intermediate	82	26.6
	Bachelors	165	53.5
	Masters	31	10
	Total	308	100
Experience	1-10	112	36.3
	11-20	180	58.4
	21-30	16	5.1
	Total	308	100
Occupation	Pilot	45	14.6
	Cabin Crew	94	30.6
	Air Traffic	47	15.3



	Controller		
	Aircraft	52	16.9
	Engineer/Technician		
	Ground Handler	70	22.6
	Total	308	100
Firm	PIA	52	16.9
	Airblue	82	26.6
	Gerry's Dnata	17	5.6
	Menzies-RAS	18	5.7
	PCAA	52	17
	Others	87	28.2
	Total	308	100

4. Results and Discussion

Before other statistical analysis, the study performed an HSF test to check CMB in the data and its results are reported in Table 3. The results show that the percentage of variance is 0.38 which is far less than the threshold value of 0.5 (Podsakoff et al., 2003), indicating the research data is free from the CMB problem.

Table 3. Harman's Single Factor Analysis for Common Method Bias (CMB)

Component	Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	Percent of Variance	Cumulative Percentage	Total	Percent of Variance	Cumulative Percentage
01	9.432	37.730	37.730	9.432	37.730	37.730
02	2.561	10.243	47.972			
03	1.767	7.068	55.040			
04	1.279	5.116	60.156			
05	1.185	4.740	64.896			
06	1.003	4.013	68.909			
07	0.886	3.545	72.454			
08	0.821	3.284	75.738			
09	0.735	2.938	78.676			
10	0.629	2.517	81.193			
11	0.619	2.475	83.668			
12	0.577	2.308	85.975			
13	0.516	2.064	88.039			
14	0.455	1.821	89.861			



15	0.4 28	1.711	91.571
16	0.3 71	1.485	93.056
17	0.3 37	1.350	94.406
18	0.3 20	1.281	95.687
19	0.2 40	0.959	96.646
20	0.1 93	0.771	97.417
21	0.1 64	0.657	98.074
22	0.1 60	0.640	98.714
23	0.1 43	0.573	99.287
24	0.1 08	0.432	99.719
25	0.0 70	0.281	100.000

Extraction Method: Principal Component Analysis

4.1 Normality Analysis and Independent Sample

The normality analysis is performed using two important measures of normality, i.e., Skewness and Kurtosis and their values are reported in Table 4 below. The results reported in the table show that some of the values of SKEWNESS for the variables (SE, VH, TL, EE, and PSB) are between +1 to -1. Hence, it can be interpreted from the values of Skewness that data distribution is asymmetric. In addition, it can be interpreted from the Kurtosis values that the distribution is leptokurtic or heavy-tailed (Górecki et al., 2020). Hence, the data follows a non-normal distribution.

Table 4. Normality and Independent Sample t-test

Variables	Items	N	Skewness	Kurtosis	P > t	Decision (t-test)
SE	5	308	1.387	2.027	0.740	Fail to reject H ₀
VE	5	308	0.897	0.012	0.448	Fail to reject H ₀
TL	5	308	1.105	0.712	0.166	Fail to reject H ₀
EE	5	308	1.182	1.296	0.748	Fail to reject H ₀
PSB	5	308	-1.132	0.427	0.202	Reject H ₀



Note. The level of significance(α) is 0.05 and the decision rule = Reject H_0 if $p \leq 0.05$.

On the other hand, the study has also performed a student's t-test (reported in Table 4) which is a reliable measure to test whether any two groups are the same or are different from one another (Gerald, 2018). Hypotheses were made in which H_0 was stating that there is no mean difference present whereas, the H_A was stating that there is a mean difference present. H_0 is to be accepted if ($p > 0.05$) and H_0 is to be rejected if ($p \leq 0.05$). H_0 for the three independent variables (SE, VH, and TL) as well as for the mediating variable (EE) has been accepted describing that there is no difference present between genders and both the genders equally experience WB and EE. However, H_0 for the outcome variable has been rejected (p -value = 0.024) describing that there is a significant difference present for this variable between both genders. Females have scored higher (16.15) for this variable while males have a lower score (15.09). This implies that Females' PSB is reduced more when encountering WB than Males' PSB. The findings are justifiable as usually males tend to be a little more rigid than females and they do not let their emotions come in between their work as females do.

4.2 Measurement Model Analysis

The study used Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) to evaluate the model's quality concerning a set of items (Cronbach, 1951; Van Griethuijsen et al., 2015). In Table 5, the values of Cronbach's alpha, CR, and AVE are reported, and all meet the established threshold values of 0.7, 0.7, and 0.5, respectively (Hair et al., 2010; Imtiaz et al., 2022; Iqbal et al., 2023a). Furthermore, constructs of SE, VH, and TL indicate Cronbach's Alpha values of 0.85, 0.88, and 0.82, respectively.

Moreover, the AVE is used to measure the questionnaire validity (Goldweber et al., 2013), and its value exceeding the threshold level (0.5), indicates that all the items converge to measure the intended underlying construct adequately (Fornell & Larcker, 1981). Lastly, the factor loading values for each variable in the table represent a strong association between specific items and variables (Spearman, 1961). Based on the findings, convergent validity has been established.

Table 5. Measurement Model Analysis

Constructs	Items	Loadings	Cronbach's alpha	AVE	CR
SE	SE1	0.769	0.776	0.624	0.776
	SE2	0.800			
	SE3	0.823			
	SE4	0.818			
	SE5	0.799			
VH	VH1	0.751	0.744	0.674	0.786
	VH2	0.710			
	VH3	0.749			
	VH4	0.765			
	VH5	0.762			
TL	TL1	0.764	0.835	0.657	0.823
	TL2	0.799			
	TL3	0.854			
	TL4	0.853			
	TL5	0.843			
EE	EE1	0.698	0.812	0.688	0.889
	EE2	0.719			



	EE3	0.869			
	EE4	0.890			
	EE5	0.856			
	PSB1	0.903	0.897	0.651	0.903
	PSB2	0.876			
PSB	PSB3	0.873			
	PSB4	0.903			
	PSB5	0.886			

Note. CR is Composite Reliability; AVE is Average Variance Extracted.

Furthermore, the study has measured the discriminant validity using the criteria proposed by Fornel and Lacker (1981). According to these authors, discriminant validity is achieved if the square root of AVEs (along the main diagonal) for each construct is greater than the inter-construct coefficient of correlation (Hajjar, 2018; Iqbal et al., 2023b). The results, reported in Table 6, show that none of the inter-construct correlations exceeded the threshold values, indicating the presence of discriminant validity.

Table 6. Discriminant Validity

Variable	PSB	SE	VH	TL	EE	Multicollinearity	
						Tolerance	VIF
PSB	0.806					n/a	n/a
SE	-	0.789				0.418	2.394
	0.635**						
	*						
VH	-	0.568**	0.820			0.606	1.649
	0.622**	*					
	*						
TL	-	0.304**	0.404**	0.810		0.828	1.207
	0.508**						
	*						
EE	-	0.729**	0.510**	0.248*	0.829	0.454	2.203
	0.517**	*	*	*			
	*						

***, ** shows significance at 1 and 5 % levels, respectively.

In addition, the Pearson coefficient of correlation (r) shows the strength of association among variables (Arintoko et al., 2023; Sajid et al., 2021; Hashmi et al., 2022). The findings indicate a significant negative association between WB and PSB. Specifically, all three components of WB—SE, VH, and TL—have a significant negative relationship with PSB. Furthermore, the results show a negative association between EE and PSB. However, all the independent and mediating variables exhibit a significant positive association with each other, implying no issue regarding uniqueness and distinctiveness (Wang et al., 2021).

Furthermore, the Variance Inflation Factor (VIF) and tolerance were computed to diagnose the possibility of multicollinearity among the variables, which could impact the precise estimation of regression coefficients (Gujarati, 2022; Hasan et al., 2022). Generally, the established threshold values for VIF and tolerance are 10 and 0.2, respectively (Gujarati, 2022; Senaviratna & Cooray, 2019). As per the results, the VIF values are below 10, and tolerance values exceed 0.2, indicating the absence of a multicollinearity problem in the data.



4.3 Multiple Regression and Mediation Analysis

The results of multiple regression and mediation analysis are reported in Table 7. The findings show that the SE has a significant negative impact on PSB ($\beta=-0.5$). The finding suggests SE, either intentional or unintentional, reduces PSB among employees in the aviation industry (Jahanzeb & Fatima, 2018). Further, the coefficient of VH is also negative and significant ($\beta=-0.39$). The result implies that employees experiencing VH tend to have low PSB in the aviation industry (Einarsen et al., 2020; McCabe, 2020). Similarly, the coefficient of TL is also negative and significant ($\beta=-0.328$), suggesting that PSB reduces in the presence of TL in the workplace (Fan et al., 2023; Dobbs & Do, 2019). Furthermore, SE is found to be the most influential factor affecting PSB among employees in the aviation industry, followed by VH and TL. Lastly, the value of R^2 indicates that the regression model explains 72.4% variation in PSB, indicating a well-fitted model. These findings support the study’s first three hypotheses (H1, H2, H3).

Table 7. Results of Regression and Mediation Analysis

Variable	Multiple Regression Analysis		Mediation Analysis	
	Coefficient (β)	t-statistics	Coefficient (β)	t-statistics
SE	- 0.500***	- 8.443	- 0.5242***	- 8.4341
VH	- 0.388***	- 7.040	- 0.3514***	- 6.2177
TL	- 0.328***	- 6.646	- 0.3251***	- 6.5374
R^2	0.724		0.767	

Note. Dependent Variable = Proactive Safety Behavior (PSB), *** indicates significance at a 1 % level of significance.

Moreover, the results of mediation analysis re-validate the findings of regression analysis. The results indicate that all three antecedents—SE, VH, and TL— have significant negative effects on PSB, even after incorporating EE as a mediator (Maslach & Jackson, 1981; Smith et al., 2018). These findings re-validate that SE is the most influential factor affecting PSB among employees in the aviation industry, followed by VH and TL. In addition, the results show that EE significantly moderates the relationship between SE-PSB, VH-PSB, and TL-PSB. Lastly, the R^2 value indicates that the SE, VH, TL, and EE collectively account for approximately 77% variation in PSB, indicating a well-fitted model. These findings support our study’s last three hypotheses (H4, H5, H6).

The results of the total effect (TE) model are reported in Table 8. The findings indicate that the TE value is -0.524 which is statistically significant at a 1% level of significance. The coefficient of TE indicates a significant negative total effect of all three antecedents of WB (SE, VH, TL) on PSB through the EE (mediator). Furthermore, the coefficient of Direct Effect (DE) is -0.491 indicating a significant negative DE of all three independent variables (SE, VH, TL) on PSB among employees in the aviation industry. These findings re-validated our regression findings. Similarly, the coefficient of Indirect Effect (IE) is -0.331, suggesting a significant negative indirect effect of all antecedents of WB on PSB through the mediator (Memon et al.,2018). These results of the TE model indicate the mediating effect of EE between all three antecedents of WB (SE, VH, and TL) and PSB among employees in the aviation industry of Pakistan. These findings further support our study’s last three hypotheses (H4, H5, H6).



Table 8. Total Effect Model

	Total Effect	Direct Effect	Indirect Effect	Partially Standardized	Completely Standardized
Effect	-0.524	-0.491	-0.0331	-0.0083	-0.0244
St. Error	0.062	0.079	0.0496	0.0123	0.0363
t-statistic	-8.434	-6.194			
p-value	0.000	0.000			
LLCI	-0.647	-0.647	-0.1349	-0.0328	-0.0975
ULCI	-0.402	-0.335	0.0650	0.0650	0.0485

Note. Confidence Interval=95% & Number of Bootstrap samples=5000. For both partially and completely standardized indirect effects, BootLLCI and BootULCI were estimated.

4.4 Model Summary

The summary of our empirical model is reported in Table 9. The empirical findings of our study reveal that workplace bullying (WB) has a significant negative impact on proactive safety behavior (PSB) among employees in the aviation industry of Pakistan. Specifically, all three components of WB (SE, VH, TL) have a significant and negative impact on WB, supporting our first three hypotheses (H1, H2, H3). Moreover, the findings reveal that EE significantly moderates the aforementioned relationships, which further supports the remaining three hypotheses (H4, H5, H6). Consequently, the findings provide empirical support to all six hypotheses.

Table 9. Hypotheses Results

Hypotheses	Relationship	Coefficient (β)	Std. Error	t-statistic	p-value
H1	SE → PSB	-0.500	0.059	-8.443	0.000
H2	VH → PSB	-0.388	0.055	-7.040	0.002
H3	TL → PSB	-0.328	0.049	-6.646	0.000
H4	SE → EE → PSB	-0.5242	0.0622	-8.4341	0.001
H5	VH → EE → PSB	-0.3514	0.0565	-6.2177	0.000
H6	TL → EE → PSB	-0.3251	0.0497	-6.5374	0.003

5. Conclusion and Discussion

The primary goal of the study is to measure the impact of workplace bullying (WB) on proactive safety behavior (PSB) among employees in the aviation industry of Pakistan. A survey-based method is used for the collection of data from the sample. The empirical results show a negative and significant impact of WB on PSB. Specifically, the findings show that Social Exclusion (SE) has relatively a larger impact, followed by Verbal Harassment (VH) and Toxic leadership f(TL) on the PSB of employees. Besides WB, the study also incorporates Emotional Exhaustion (EE) as a mediator in the model because WB intensifies EE, thereby reducing PSB. According to the findings, EE significantly mediates the relationship between WB and PSB.



The study offers a few important implications for policymakers and managers of the aviation industry. First, this research contributes to the body of literature by incorporating WB in the context of aviation safety. Furthermore, the study also signifies the importance of Proactive Safety Behavior in safety-intensive segments. Second, the findings imply that organizations, especially in the aviation sector, should strengthen their commitment to creating a bullying-free environment. This not only ensures the well-being of employees but also bolsters safety, crucial for sectors like air travel. Third, the study advocates the establishment of a confidential WB complaint management system and dedicated psychological consultation department for employees to mitigate its adverse impacts. This study has some limitations, i.e., we have collected cross-sectional data from selected airline companies. Future research may examine the effect of WB on PSB considering the mediating role of EE using data from other industries in other countries.

While our study provides valuable insights, it is not without limitations. The cross-sectional nature of our research precludes causal inferences, and self-reported data may introduce response biases. Furthermore, the generalizability of our findings might be limited to similar high-stress industries. These limitations highlight the need for a cautious interpretation of our results. For future research, we recommend longitudinal studies to examine the long-term impacts of WB on safety behavior. Investigating the efficacy of various intervention strategies in mitigating EE would also be beneficial, especially in high-stress work environments like the aviation industry. This future research direction could substantially contribute to developing effective measures to enhance employee well-being and safety in such critical sectors.



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