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Personal resources, work engagement and job burnout among Vietnamese ground employees in the aviation sector

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Abstract: This study investigated the relationship between personal resources, work engagement, and job burnout among ground employees in the aviation sector. The research surveyed 250 ground employees who interacted face-to-face with passengers at check-in counters and during in-flight services. Data from 230 employees were analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM) to validate a conceptual model, with personal resources, work engagement, and job burnout measured as second-order variables within a hierarchical component model. The findings indicated that personal resources were significantly influenced by self-efficacy, optimism, resilience, and hope. Work engagement was significantly affected by vigor, dedication, and absorption. Job burnout was notably impacted by emotional exhaustion, cynicism, and reduced professional efficacy. The study demonstrated that personal resources serve as predictors of job burnout in the aviation sector, with work engagement functioning as a mediating variable. Importantly, the relationship between work engagement and burnout was found to be positively significant, suggesting that while work engagement can be beneficial, excessive levels may increase the risk of job burnout. The results emphasize the importance of enhancing personal resources among ground employees to mitigate job burnout, offering practical implications for managerial practices aimed at preventing human errors and ensuring flight safety.

Keywords: *Aviation industry, Ground services, Job burnout, Personal resources, Vietnam, Work engagement.*

1. Introduction

Burnout is typified by emotional exhaustion, cynicism, and a reduced sense of professional efficacy, significantly impacting the well-being of individuals in high-stress [1]. Job burnout is frequently associated with emotional instability resulting from excessive work demands and limited resources necessary for task completion [2]. In other words, individuals experiencing job burnout often struggle to maintain psychological stability, particularly when faced with overwhelming workloads (tight deadlines, long working hours, multiple tasks) without adequate resources (confidence, calm, optimism), in turn, affecting their personal life, career decisions, and performance [3]. This prolonged stress erodes their emotional resilience, leading to a sense of helplessness. It leads to quarrels and arguments without specific causes, resulting in affecting interpersonal conflicts, and then organizational efficiency decline [4]. In some cases, their behavioral signs may include withdrawal from work responsibilities, frustration with colleagues, and increased absenteeism, while emotional symptoms such as increase cynicism, and decreased satisfaction. Conversely, according to Schaufeli and Bakker [5] and Schaufeli, et al. [6] work engagement is when people feel emotionally and motivationally dedicated to their jobs. As a result of their dedication, people display more energy, enthusiasm and a strong link to their work, as Macey and Schneider [7] explain. It is made up of three important aspects: vigor, dedication and absorption. Vigor means you can maintain a lot of energy and strength as you face work-related problems. Dedication means being deeply involved and believing that what you do is important. In

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contrast, absorption means being fully involved in what you are doing which can cause you to forget about time, according to Contreras, et al. [8].

It is important to look at personal resources when examining the link between work engagement and job burnout. This is due to the fact that they help determine how individuals handle their work. These resources will provide the basis for individuals to believe in themselves which leads them to handle their work well, anticipate good results and be involved in their tasks [9]. Therefore, employees who have strong personal resources usually feel more involved and satisfied with their jobs [10]. Beyond engagement, personal resources shape employees' attitudes and behaviors at work. Strong personal resources also help individuals form a shield against workplace stressors, helping individuals maintain their performance under pressure [11]. Because individuals can reduce the negative impact of their jobs, they can reduce the risk of burnout, improve overall well-being, and the ability to cope with work [12]. There is also a clear link between personal resources and job resources. When employees leverage their strengths, they experience enhanced well-being, increased engagement, and improved job satisfaction [13, 14]. Scholars argue that traits like self-efficacy and resilience should be included in frameworks explaining work engagement and burnout, highlighting their significance [15].

In the aviation industry, ground employees perform vital roles not only in providing operational services but also in representing the image of the organization [16]. These roles require performing multiple tasks across various areas such as check-in, boarding, and in-flight services. These heavy workloads affect both their work-life balance and personal well-being [16].

One of the typical pressures that the Vietnamese aviation industry is facing is rapid development, while infrastructure hasn't evolved at a comparable speed [17]. For instance, Tan Son Nhat International Airport accommodated 39.8 million passengers in 2018, far exceeding its design capacity [18]. This overload contributes to overworked working conditions for ground staff. In addition, they often face great pressure from large passenger volumes, noise pollution, shift work, and strict safety protocols, especially during peak seasons [17]. Given these challenges, it is reasonable to propose that enhancing personal resources among ground employees may improve work engagement.

This study explores (1) the effects of personal resources on job burnout of ground employees; and (2) examines the mediating role of work engagement in the relationship between personal resources and job burnout. The recommendations of this paper not only provide theoretical understanding of job burnout but also provide empirical evidence to support practical interventions in aviation sector. These interventions aim to reduce job burnout among ground staff, which ultimately maximizes human error and enhances flight safety.

2. Literature Review

This section begins with a Conservation of Resources Theory, followed by definitions of each factors and its determinants. The analysis in this paper relies on personal resources, job burnout and work engagement. All the hypotheses for this research are presented at the end of this section.

2.1. Conservation of Resources Theory

Employees in workplaces are often required to handle their resources efficiently. According to Conservation of Resources theory, individuals try to keep their resources safe and also seek to gain more [19]. It is suggested by this theory that losing resources will have a greater effect on a person's mind than gaining resources. So, if employees feel their resources are threatened while meeting job requirements, it is very likely to cause stress and burnout [20]. Alternatively, trying to achieve something encourages people to do things that give them quick positive results which helps them keep their resources and stay motivated [21]. Therefore, when a person can effectively utilize their personal resources, they can increase work engagement and reduce the risk of burnout [22].

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2.2. Personal Resources

Personal resources are defined as an individual's positive perceptions of themselves and the world, encompassing attributes such as self-esteem, self-efficacy, optimism, and faith, which are essential for fostering a forward-looking perspective in stressful situations [23, 24]. These resources are characterized by four key dimensions: *self-efficacy*, the belief in one's ability to succeed in specific tasks [25]; *optimism*, the willingness to engage in and achieve goals; *hope*, the belief in and expectation of success; and *resilience*, the capacity to bounce back from setbacks [26-28]. In the context of employment, particularly for ground employees in highly demanding work conditions, personal resources play a critical role in facilitating adaptation by promoting flexibility, sensitivity to change, openness to learning, and a commitment to continuous personal development [8].

2.3. Job Burnout

Burnout happens when someone is exposed to work stress for a long time and becomes both mentally and physically tired [29]. It is made up of three dimensions: emotional exhaustion, cynicism and reduced professional efficacy [30]. Emotional exhaustion means people feel tired and overloaded which leads them to develop negative thoughts and emotions that make them want to avoid their jobs [26]. Cynicism is shown when someone acts indifferent or uninvolved with their job or with others. When a person feels exhausted, they may judge their work performance negatively which can make them feel less capable and less able to do their job [30]. Burnout can cause both physical and mental health problems which result in less productivity, more absenteeism and less involvement in work [31]. Even with more attention and actions to solve it, burnout is still a widespread problem in many industries [32].

2.4. Work Engagement

According to Kahn [33] work engagement means having positive feelings and a strong dedication to work which is shown by high energy, excitement and full involvement in tasks [34, 35]. It is made up of three important dimensions: vigor which means maintaining energy through difficulties; dedication which means being deeply involved and finding meaning in work; and absorption, where people are fully focused and lose track of time [36, 37]. When employees are engaged, face challenges, use mental strength and are fully involved in their jobs [38] they help build better relationships and create a positive atmosphere at work.

2.5. Hypothesis Development

This section provides hypotheses used in this paper and justification of how each hypothesis is formed.

2.5.1. Personal Resources and Work Engagement

Many previous studies have also shown that personal resources play an important role in enhancing work engagement among employees [13, 39]. When personal resources are developed, employees are better equipped to cope with challenging work conditions, thereby reducing the risk of burnout [8]. This increased engagement is not only correlated with increased productivity [40] but also encourages employees to proactively seek and create additional resources, creating a positive feedback loop [41]. In the context of ground employees, this relationship is particularly important, as it affects both the quality of passenger care and diligence in performing responsibilities [8]. Therefore, the following hypothesis H1 is formed to test

H_1: Personal resources have a positive impact on work engagement

2.5.2. Personal Resources and Job Burnout

According to Freudenberger [42], burnout is a condition in which an employee puts in more effort and time but sees reduced results, a situation that is exacerbated by any imbalance between the

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individual and their job demands [8]. Personal resources such as optimism, self-efficacy, hope, and resilience play a vital role in reducing burnout and enhancing work engagement. For example, optimism helps to alleviate occupational stressors and protects against job stress and burnout [43], while counteracting cynicism and promoting conscientiousness and psychological openness [44]. Similarly, self-efficacy is important, as low levels of it can lead to burnout [45], whereas high levels of self-efficacy promote greater work engagement [46]. Hope supports individuals by maintaining the will and ability to solve problems, while its lack leads to burnout [38]. Finally, resilience acts as a buffer against job demands and burnout, supports stress management and recovery, and is positively related to work engagement. Thus, the following hypothesis H2 could be derived.

$H_{2:}$ Personal resources have a negative impact on job burnout

2.5.3. Work Engagement and Job Burnout

Conservation of Resources (COR) theory suggests that individuals are motivated to maintain their current resources and pursue additional resources [47]. This dual motivation shapes how people respond to their environment, especially in contexts such as the workplace where resources play a critical role. When resources are threatened or depleted, individuals experience stress, which triggers a defensive approach to protect what they have. Individuals will constantly strive to balance the conservation and growth of resources. Even when faced with obstacles, they persist in working to protect and enhance their resource reserves. In the workplace, this motivation is reflected in employees' work engagement. Lower work engagement indicates reduced energy and commitment, which can lead to emotional exhaustion and cynicism, ultimately leading to higher levels of burnout [48]. Conversely, when employees demonstrate high levels of work engagement, burnout is reduced [49]. Research indicates that employees with higher work engagement may associate any feelings of burnout with their positive achievements, thereby maintaining a more enjoyable work state [44]. Furthermore, work engagement promotes happiness and a sense of enjoyment in work, driven not by external rewards but by internal satisfaction. Employees with high work engagement tend to view tasks positively, even in the face of strain [50]. This is particularly relevant for ground employees, who encounter numerous stressors including irregular working hours, high passenger volumes, and operational disruptions. These stressors can diminish their work engagement, which may, in turn, increase their susceptibility to burnout. Additionally, because their roles require direct communication with people, the effects of burnout are likely to be more pronounced. Thus, discussion can generate the following hypothesis.

$H_{3a:}$ Work engagement has a positive impact on job burnout

$H_{3b:}$ Work engagement has a negative impact on job burnout

$H_{4:}$ Work engagement mediates the relationship between personal resources and job burnout

3. Methodology

3.1. Data Collection and Sampling

The research employed a quantitative method. The study employed a paper-formatted questionnaire with closed-ended questions, measured using a five-point Likert scale. The study used a questionnaire in English based on previous studies. The authors followed the guidelines of Brislin [51] and invited two bilingual experts, one expert to translate the English into the Vietnamese version and another expert to translate back, and then compared the two versions to confirm consistency. To calculate the required sample size, the authors used Gpower tool recommended by Sarstedt, et al. [52] setting with six predictors, a statistical power of 90% [53], a medium effect size of 0.15, and a significance level of 0.05, the analysis established that a minimum of 123 respondents was essential. Furthermore, the study use of structural equation modeling (SEM), a minimum sample size of 200 was considered appropriate, as recommended by Hoogland and Boomsma [54]. One interviewer was employed and trained to conduct the survey and consent forms were obtained prior to the survey. For purposive sampling, ground employees who interact face-to-face with customers in check-in and in-flight services were selected. These respondents were selected from ground services companies' serve over 50 airlines and contribute

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fine on the growth of domestic and foreign airlines operating to and from Vietnam [55]. The authors were distributed 250 questionnaires to them in August 20, 2025. Two hundred thirty were deemed satisfactory. The data was analyzed using SmartPLS v3.

3.2. Questionnaire Design

The survey instrument was developed following the procedure of Ha and Nguyen [56]. The study used multi-item scales from previous studies to ensure validity and reliability. Respondents answered on a five-point Likert scale ranging from "strongly disagree" to "strongly agree". Personal resources were measured as a second-order construct with 15 items for the dimensions of self-efficacy, resilience, optimism, and hope [23]. Work engagement consisted of 9 items including vitality, dedication, and passion [57] and job burnout with 15 items for exhaustion, cynicism, and occupational efficacy [58, 59]. A pilot test conducted with 23 respondents in one day eliminated items that were deemed too similar, which enhance the reliability of the instrument.

3.3. Data Analysis

The data were analyzed using structural equation modeling (SEM). According to Hair, et al. [60], this technique is preferred over simple regression tools due to its ability to examine multiple dependent relationships simultaneously. In this study, a two-step approach was taken, including measurement modeling and structural modeling. Furthermore, to ensure the reliability and validity of the findings, all essential aspects of SEM analysis were taken into account, as recommended by Ha and Nguyen [56]. Therefore, the use of SEM was appropriate to validating the relationships between the constructs in this study.

4. Results

4.1. Social Demographic Characteristics of the Study Participants

The characteristics of the 230 respondents in this survey. The gender of the sample members accounted of 57.39% males and 42.61% females took part in this survey. In terms of ages, 6.09% respondents were in the age group of 45 years old and 57.39% were in between 25 and 35 years old. The number of respondents to the questionnaire with college level accounted for 38.70% (89 people), bachelor's degree accounted for 54.35% (125 people), and graduate-level accounted for 6.96% (16 people). Furthermore, 94 (40.87%) respondents had tenures of less than 3 years, 62 (26.96%) respondents had tenures of 3 to less than 5 years and 74 (32.17%) respondents had tenures of more than 5 years.

4.2. Common Method Variance

The researchers recognized that employing single respondents, specifically ground employees, for both independent and dependent variables in their study may introduce the issue of common method variance (CMV). To address this potential concern, they employed Harman's single-factor test, as proposed by Podsakoff and Organ [61] to detect the presence of CMV among the variables. This approach involved conducting an exploratory factor analysis on all 39 indicators, where the eigenvalues were calculated to assess the variance explained by a single factor. The results showed that the first factor accounted for only 25.719% of the total variance, a value notably below the accepted threshold of 50% [62]. Based on this finding, the researchers concluded that CMV was not a significant issue in their study.

4.3. Measurement Model

Exploratory factor analysis (EFA) was employed in the research to investigate the multidimensional characteristics of the constructs PR, WE, and JBO. For each construct, the Bartlett test yielded a significance level of $\rho<0.05$, while the Kaiser-Meyer-Olkin (KMO) values were recorded as 0.927 for

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PR, 0.829 for WE, and 0.901 for JBO, all exceeding the minimum threshold of 0.6. These results confirmed the adequacy of the sample size and the presence of latent factors. The EFA identified factors with eigenvalues greater than 1 for each construct, with the total variance explained by these factors amounting to 68.86% for PR, 69.71% for WE, and 67.53% for JBO. Subsequently, the measurement model was evaluated to assess the reliability and validity of the constructs, following the guidelines outlined by Hair, et al. [63]. Table 1 below presents construct reliability was measured using composite reliability (CR) and rho_A. Prior studies indicate that values of CR and rho_A exceeding 0.7 demonstrate strong reliability [64, 65] for both first-order and second-order constructs, ranging from 0.703 to 0.913, meeting the established standards. Convergent validity was examined through factor loadings and the average variance extracted (AVE). Hair, et al. [63] suggest that factor loadings should generally surpass 0.7 and AVE values should exceed 0.5. The analysis revealed that all factor loadings were above 0.70, and the AVE values for all first-order constructs exceeded 0.5, thereby confirming convergent validity for both first- and second-order constructs.

Table 1.
Reliability and convergent validity.

Laten constructs	Items	Loadings	rho_A	CR	AVE
First-order construct					
Vigor	VIG1	0.793	0.781	0.871	0.693
	VIG2	0.858			
	VIG3	0.845			
Dedication	DED1	0.864	0.773	0.867	0.685
	DED2	0.780			
	DED3	0.836			
Absorption	ABS1	0.854	0.777	0.867	0.684
	ABS2	0.805			
	ABS3	0.822			
Emotional exhaustion	EE1	0.780	0.883	0.912	0.675
	EE2	0.829			
	EE3	0.748			
	EE4	0.872			
	EE5	0.871			
Cynicism	CYN1	0.840	0.875	0.913	0.724
	CYN2	0.860			
	CYN3	0.862			
	CYN4	0.842			
Professional efficacy	PE1	0.810	0.886	0.912	0.633
	PE2	0.866			
	PE3	0.728			
	PE4	0.803			
	PE5	0.773			
	PE6	0.786			
Self-efficacy	SEL1	0.842	0.843	0.894	0.678
	SEL2	0.824			
	SEL3	0.796			
	SEL4	0.832			
Resilience	RES1	0.851	0.862	0.906	0.706
	RES2	0.860			
	RES3	0.843			
	RES4	0.808			
Optimism	OPT1	0.796	0.827	0.886	0.659
	OPT2	0.815			
	OPT3	0.840			
	OPT4	0.797			
Hope	HOP1	0.829	0.763	0.863	0.677
	HOP2	0.810			

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	HOP3	0.830			
Second-order construct					
Personal resources (PR)	Self-efficacy	0.851	0.848	0.897	0.685
	Resilience	0.820			
	Optimism	0.830			
	Hope	0.810			
Work engagement (WE)	Vigor	0.800	0.703	0.897	0.685
	Dedication	0.803			
	Absorption	0.772			
Job burnout (JBO)	Emotional exhaustion	0.711	0.717	0.836	0.631
	Cynicism	0.807			
	Professional efficacy	0.858			

Table 2 presents discriminant validity was assessed using the Fornell–Larcker criterion, which requires the square root of the AVE for each construct to be greater than its correlations with other latent variables. The results indicated that Heterotrait–Monotrait (HTMT) ratios remained below the threshold of 0.9 for both first- and second-order reflective constructs [63]. Furthermore, based on 5000 bootstrap samples, none of the HTMT confidence intervals included the value of 1 at a 5% significance level [52]. These findings confirmed that each construct was statistically distinct, thus establishing discriminant validity [66].

Table 2.
Discriminant validity.

	ABS	**CYN**	**DEDI**	**EE**	**HOP**	**OPT**	**PE**	**RES**	**SELF**	**VIG**
ABS	*0.827*									
CYN	0.144	*0.851*								
DEDI	0.497	0.232	*0.827*							
EE	0.146	0.368	0.223	*0.821*						
HOP	0.631	0.178	0.663	0.065	*0.823*					
OPT	0.607	0.236	0.520	0.242	0.698	*0.812*				
PE	0.082	0.635	0.200	0.500	0.149	0.390	*0.795*			
RES	0.589	0.183	0.527	0.183	0.687	0.665	0.372	*0.841*		
SELF	0.531	0.416	0.497	0.330	0.731	0.747	0.434	0.694	*0.824*	
VIG	0.548	0.256	0.652	0.237	0.551	0.464	0.156	0.496	0.409	*0.832*

Note: ABS- absorption, CYN- cynicism, DEDI- dedication,
EE- emotional exhaustion, HOP- hope, OPT- optimism, PE- professional efficacy,
RES- resilience, SELF- self-efficacy, VIG- vigor
The square root of the AVE in *italic.*

4.4. Structural Model

The authors utilized bootstrapping with 5000 samples for its robustness in estimating confidence intervals for total and specific indirect effects on test hypotheses. This statistical resampling technique involves generating multiple bootstrap samples, estimating coefficients from each, and ranking these estimates to establish the desired confidence intervals. In the context of statistical hypothesis testing, a coefficient is deemed statistically significant if the absolute value of its t-statistic exceeds the critical value for a two-tailed test. These critical values are specified as 1.65 at the 10% significance level, 1.96 at the 5% significance level, and 2.57 at the 1% significance level, according to Nguyen, et al. [67].

Table 3 presents the results of hypothesis testing. The first column presents the path relationship between the independent variable, mediating variable, and dependent variable. The second column shows the path coefficient (β), showing the extent to which the independent variable is associated with the outcome between the personal resources of ground employees and their work engagement and burnout. The third column presented the results of t-value statistics. The fourth column shows that the results of a 95% confidence interval, range low to upper, do not contain zero. The fifth column lists three decisions drawn from the hypothesis testing.

Table 3.
Summary of PLS-SEM results.

Path	β	t-statistics	95% confidence interval		Support	f^2
			LCL	UCL		
Dependent variable: Job burnout						
Personal resources	-0.872	16.783	-0.965	-0.792	H2 supported	0.826 (large)
Work engagement	0.793	14.100	0.705	0.889	H3a supported	0.683 (large)
	-	-	-	-	H3b rejected	-
R^2: 47.8% of the variance of job burnout is explained by personal resources and work engagement.						
Mediate variable: Work engagement						
Personal resources	0.658	16.450	0.586	0.718	H1 supported	0.765 (large)
R^2: 43.4% of the variance of work engagement is explained by personal resources.						
Contribute to Personal resources						
Self-efficacy	0.857	45.116	0.819	0.883	-	2.761 (large)
Resilience	0.832	37.829	0.789	0.862	-	2.242 (large)
Optimism	0.833	34.261	0.785	0.866	-	2.272 (large)
Hope	0.784	24.936	0.720	0.827	-	1.597 (large)
Contribute to work engagement						
Vigor	0.820	36.577	0.755	0.851	-	2.058 (large)
Dedication	0.799	25.675	0.738	0.842	-	1.768 (large)
Absorption	0.756	18.888	0.673	0.807	-	1.333 (large)
Contribute to job burnout						
Emotional exhaustion	0.724	16.041	0.634	0.785	-	1.103 (large)
Cynicism	0.770	19.067	0.688	0.824	-	1.457 (large)
Reduce Professional efficacy	0.878	34.042	0.825	0.912	-	3.370 (large)

The study reported R-squared values of 0.434 for work engagement and 0.478 for burnout, both of which exceeded the threshold of 0.1 required for minimum explanatory power, as established by Dang, et al. [64]. This indicates that the model adequately explains the variance in these constructs, as evidenced in Table 4. Examining the individual structural paths, personal resources were found to have a significant positive relationship with work engagement (β = 0.658, t = 16.450), thereby supporting hypothesis H1. Additionally, personal resources exhibited a significant negative relationship with burnout (β = -0.872, t = 16.783), which supported hypothesis H2. Furthermore, a significant positive relationship was observed involving work engagement (β = 0.793, t = 14.100), leading to the acceptance of hypothesis H3a. However, hypothesis H3b was rejected because the observed relationship was positive, contrary to the hypothesized negative relationship.

By focusing on the effect size, f^2 of all direct effects, all obtained at the large effect size of the direct effects from personal resources to job burnout of 0.826, from work engagement to job burnout of 0.683, and from personal resources to work engagement of 0.765. Additionally, the Q^2 values were all larger than 0, all obtained Q^2_{JBO} of 0.291 and Q^2_{WE} of 0.264 and this implies that the model in this study is predictively relevant [60].

Table 4.
Hypothesis testing for indirect effects.

Hypothesis	Relationship	β	t-statistics	95% confidence interval		Remark	Conclusion
				LCL	UCL		
H4	PR→WE→JBO	0.522	8.239*	0.416	0.622	Supported	Partial mediation

A specific mediating relationship is considered as significant when there is a significant t value as well as a bias-corrected confidence interval without a zero in between. Based on Table 4 above, it is seen that personal resources (β= 0.522, t= 8.239) possessed a significant indirect effect on job burnout,

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through work engagement as the mediator. Therefore, H4 hypothesis of indirect effects generated from this study was supported.

Table 1.
Direct, indirect, and total effects of personal resources, work engagement on job burnout.

Antecedent	Direct effect	Indirect effect route and magnitude	Total effect
Personal resources	PR→JBO -0.872*	PR→WE→JBO 0.658 x 0.793 = 0.522*	-0.350*

Table 5 shows a significant direct effect of personal resources on job burnout (β= –0.872, t= 16.783), as well as a significant indirect effect through work engagement (β= 0.522, t= 8.239). The total effect was calculated as (β= –0.350, t=6.906). Given that both the direct and indirect effects are statistically significant, this pattern indicates partial mediation. Thus, work engagement partially mediates the relationship between personal resources and job burnout. Our final research model with path coefficients as well as the explained variance is exhibited in Figure 1.

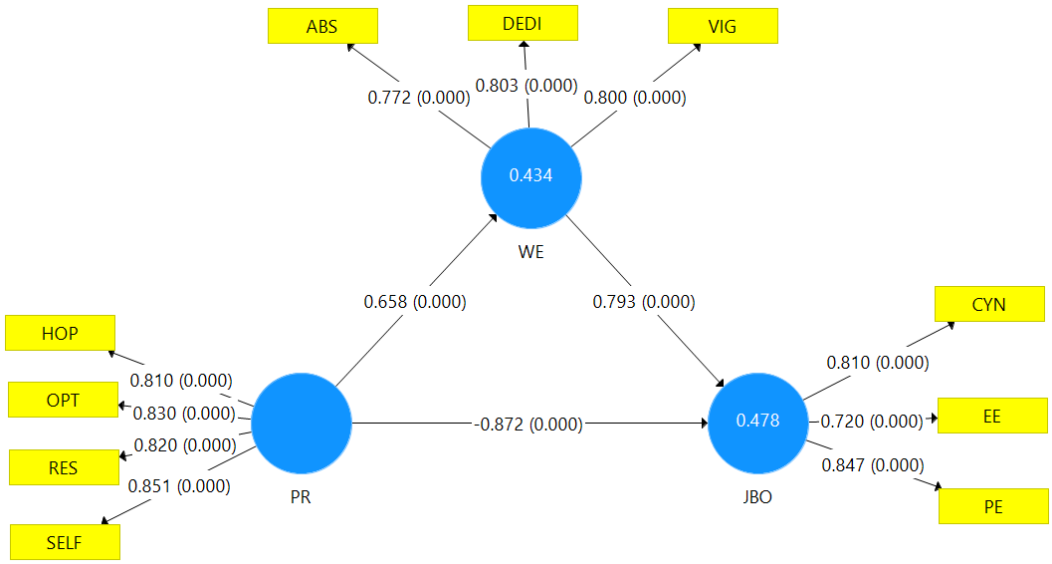

Figure 1.
Hypotheses testing result.

5. Discussion and Conclusion

This study explores how personal resources and work engagement influence job burnout among Vietnamese ground employees, while also assessing the mediating effect of work engagement in this dynamic, with PR, WE and JBO as a second-order variables. The results indicate a notable negative impact of personal resources and burnout (β= -0.872; t = 16.783), supporting hypothesis H2 and corroborating findings from previous research [8, 29]. In demanding work settings, excessive workloads can foster negative thinking, depleting personal resources. Thus, nurturing these resources is vital for ground employees as they counteract workplace stressors [68]. Personal resources act as a shield against burnout by strengthening coping strategies, elevating work engagement, encouraging positive work attitudes, instilling hope, and enhancing self-confidence for tackling difficult tasks. Furthermore, personal resources enable ground employees to preserve a clear self-perception and resilience amid ongoing challenges. By investing in the development of personal resources, organizations can empower their employees, maintain a positive outlook, and reduce the risk of burnout.

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On the other hand, personal resources were found to be positively and significantly related to work engagement (β=0.658, t=16.450), where H1 was supported. This means that when the personal resources increase, the higher work engagement the ground employees feel, and vice versa when the personal resources decrease, the lower the work engagement will be. Individuals with high self-efficacy would usually have an optimistic view which would subsequently lead to higher work engagement [69]. Demands of the work environment (e.g. time pressure, long working hours, positive emotions) deplete personal resources, potentially causing burnout, whereas job resources reduce personal resource consumption, facilitate goal attainment, and promote personal growth. Ground employees with high personal resources adopt positive attitudes towards work engagement. Personal resources act as a protective resource against adverse health outcomes, such as burnout [70]. Higher self-efficacy facilitates reasonable goal setting and enhances an individual's willingness to engage actively in their work [71]. Moreover, the results of this study showed that the relationship between work engagement and burnout is positively significant (β=0.793, t=14.100), supporting hypothesis H3a. This indicates that higher levels of work engagement are associated with higher levels of job burnout among ground employees. This suggests that work engagement may be beneficial only up to a certain point, beyond which it can increase the risk of emotional exhaustion and cynicism [72]. According to Nerstad, et al. [72] being highly engaged at work can create an illusion of high perceived efficacy. This occurs because highly engaged employees demonstrate personal dedication, efficacy, and energy, leading them to believe they are utilizing their full potential at work [73]. Therefore, managers are advised to manage their expectations of highly engaged employees carefully. Lobo [74] shows that encouraging a healthy balance between work, home, and leisure, as well as limiting overtime, are crucial strategies to support this balance. Additionally, individuals with high levels of engagement should be recognized and prevented from working overtime or taking on additional responsibilities. While some leaders may view overtime and exceeding targets as positive outcomes, the findings of this study caution against using engagement as a means to motivate employees without providing adequate compensation.

The Conservation of Resources (COR) theory offers insight into how individuals manage their resources in demanding circumstances. According to this theory, ground service employees, when working in a challenging and tiring work environment, will attempt to maintain, protect, and enhance their resources. The theory posits that when employees feel the possibility of losing resources, they will take protective actions, which may explain the high levels of personal resources and work engagement in some individuals. Furthermore, possessing and effectively using personal resources allows them to cope with job-related risks and demands, maintaining their motivation. Conversely, those who experience job burnout may not have sufficient resources [75]. This view link burnout to work environments where personal resources are inadequate to cope with stress [76]. Finally, COR theory underscores the resilience and vulnerability of ground service workers, emphasizing the vital role of resource management in their occupational well-being.

In an aviation setting, personal resources are critical for enhancing ground employees' well-being by mitigating burnout and fostering work engagement, as demonstrated by their significant relationship. Ground services companies should implement targeted interventions to cultivate these protective resources and maintain an optimal balance between the demands of work and resources to prevent burnout and promote engagement. Continuous assessment of personal resources, coupled with training for supervisors to provide effective support, is essential to foster a people-centered organizational culture, while fair compensation and a supportive work environment are vital for strengthening these resources through effective human resource management practices.

6. Limitation and Further Studies

The study demonstrated a negative relationship between personal resources and job burnout. It further established that work engagement mediates this relationship, serving as a mechanism through which personal resources influence job burnout. In its conclusion, the research extends the understanding of how personal resources affect job burnout and offers practical implications for

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managerial practices aimed at preventing and reducing burnout among ground employees. This is particularly significant in the aviation industry, as it contributes to reducing human error and ensuring flight safety. Although the topic has solved the stated research objectives, there are still some limitations: First, the research is only conducted with the survey subjects who are employees working at the ground service company in Vietnam with a non-probability sampling method. So, the research results can hardly be highly representative. Therefore, further research should use the probability sampling technique with sampling frame extension to increase the representativeness of the study. Second, this study is not interested in control variables, such as gender, age, education level, and income. Hence, future researchers can explore these effects on burnout.

Institutional Review Board Statement:

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee of Malaysia University of Science and Technology, Malaysia (Reference # MREC/AS/19/25/008), dated August 19, 2025. Informed consent was obtained from all participants prior to their involvement in the study.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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