

Psychological Impact on the Public Susceptible to Online Scams

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To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v14-i5/21324>

DOI:10.6007/IJARBSS/v14-i5/21324

Published Date: 18 May 2024

Abstract

This study delves into the nuanced interplay of direct and indirect relationships between depression, anxiety, emotional exhaustion, and susceptibility, with low internal control acting as a mediator in the context of online scams among the working adult population. Centralizing on the Conservation of Resources (COR) theory, data collection involved the administration of a meticulous survey questionnaire, yielding a robust dataset of 306 clean responses. Employing the sophisticated analytical capabilities of SmartPLS 4, the findings illuminate low internal control as a pivotal determinant, wielding the most substantial influence on intention while concurrently showcasing the lowest performance score. The implications of these findings are extensive, suggesting targeted interventions to alleviate depression, anxiety, and emotional exhaustion as impactful strategies for fortifying internal control. This, in turn, holds the promise of reducing susceptibility to online scams within the demographic of working adults. Emphasizing practical relevance, the study underscores the significance of workplace initiatives promoting mental health, while advocating for future research endeavors to explore the multifaceted impact of emerging technologies and organizational culture on the dynamic landscape of cybersecurity. Adopting a holistic approach, the study's insights offer actionable recommendations for individuals and organizations alike, fostering the development of comprehensive strategies to elevate cybersecurity resilience within the contemporary digital workplace.

Keywords: Depression, Anxiety, Emotional Exhaustion, Low Internal Control, Susceptibility

Introduction

Online scam susceptibility among the public is a growing concern in the global context due to the increasing reliance on the internet for various activities. The ease of access to personal information and the anonymity provided by online platforms make individuals vulnerable to scams (Ebner et al., 2023). Factors such as lack of awareness, trust in online platforms, and the sophistication of scam tactics contribute to the susceptibility of the public (Sur et al., 2021). Moreover, the global nature of the internet allows scammers to target individuals from

different countries, making it challenging for authorities to track and prosecute them (Sarno & Black, 2023). Efforts to educate the public about online scams, enhance cybersecurity measures, and promote digital literacy are crucial in reducing susceptibility (Guerra & Taylor, 2021). Collaboration between governments, tech companies, and law enforcement agencies is essential to combat online scams effectively and protect individuals from financial and emotional harm (Nolte et al., 2021). In Malaysia, online scam susceptibility among the public is a significant issue influenced by various factors. Research by Nolte et al (2021) highlights the roles of age, individual difference measures, and scam-related perceptions in susceptibility to scams, particularly during the COVID-19 pandemic. Older individuals may be more susceptible due to less familiarity with online platforms and potentially lower digital literacy. Individual differences such as cognitive abilities and risk perceptions can also impact susceptibility (Alhaddad et al., 2023). Moreover, the uncertainty and fear surrounding the pandemic may make individuals more vulnerable to COVID-19-related scams (Wilson et al., 2023). Enhancing awareness through targeted educational campaigns, promoting digital literacy among all age groups, and fostering a culture of scepticism towards online offers can help mitigate online scam susceptibility in Malaysia (Yong et al., 2023). Collaboration between government agencies, consumer protection organizations, and cybersecurity experts is essential in combating online scams effectively (Singh et al., 2021). The susceptibility of online scams in Malaysia poses a significant threat to individuals, businesses, and the overall economy (Alhaddad et al., 2023). Despite the increasing awareness of cybercrimes, the prevalence of online scams continues to rise, leading to financial losses, identity theft, and psychological distress among victims (Lee et al., 2022). The unique socio-economic landscape of Malaysia, characterized by rapid digitalization and diverse online platforms, creates a fertile ground for scammers to exploit unsuspecting individuals (Ting et al., 2024). The study on the susceptibility of online scams in Malaysia is crucial for policymakers, the public, and commercial banks. Policymakers can use the findings to develop effective cybersecurity policies and regulations to combat online scams and enhance consumer protection. For the public, the study raises awareness about online scam risks and provides insights into protecting against fraudulent activities. By understanding the vulnerabilities that make individuals susceptible, the public can adopt safer online behaviors. Commercial banks can benefit by improving fraud detection systems, implementing stronger authentication measures, and providing cybersecurity education to customers. This study offers valuable information to help banks strengthen their cybersecurity defences and safeguard customers' financial assets from online scams. This study aims to assess the direct and indirect relationship between depression, anxiety, and emotional exhaustion with online scam susceptibility with internal control as a mediator.

Literature Review

Underpinning Theory

The Conservation of Resources (COR) theory (Hobfoll, 1989) provides a valuable framework for understanding the direct and indirect relationships between depression, anxiety, emotional exhaustion, online scam susceptibility, and internal control. According to COR theory, individuals strive to acquire, retain, and protect valuable resources to cope with stressors and maintain well-being. In the context of mental health factors like depression, anxiety, and emotional exhaustion, these states can be seen as depleting internal resources, leaving individuals more vulnerable to external threats such as online scams. Depression, anxiety, and emotional exhaustion can lead to resource depletion, impairing cognitive

functioning and decision-making abilities, thereby increasing susceptibility to online scams. Internal control, as a psychological resource, plays a crucial mediating role by enhancing individuals' resilience, cognitive processing, and risk assessment abilities. Strong internal control can help individuals cope with the negative impact of mental health challenges and mitigate their susceptibility to online scams. By applying COR theory to this study, researchers can examine how the preservation or depletion of internal resources influences the relationships between mental health factors and online scam susceptibility. Understanding these dynamics can provide insights into the mechanisms underlying vulnerability to online scams and the protective role of internal control in mitigating this susceptibility.

Relationship between Depression, Low Internal control, and Susceptibility

Research has shown a compelling relationship between depression and susceptibility to online scams, with internal control playing a crucial mediating role. Individuals experiencing depression may exhibit cognitive impairments, emotional distress, and impaired decision-making abilities, making them more vulnerable to online scams (Wen et al., 2022). Depression can lead to decreased vigilance, increased impulsivity, and reduced ability to critically evaluate online information critically, thereby increasing the likelihood of falling victim to fraudulent schemes. Internal control, on the other hand, refers to an individual's perception of their ability to exert control over their environment and outcomes (Ulo, 2022). Strong internal control can act as a protective factor against online scam susceptibility by enhancing cognitive processing, decision-making skills, and risk assessment abilities. Individuals with higher levels of internal control may exhibit greater resilience against the psychological and cognitive vulnerabilities associated with depression, thereby reducing their susceptibility to online scams (Nugroho & Diyanty, 2022). Understanding the mediating role of internal control in the relationship between depression and online scam susceptibility is essential for developing targeted interventions and support mechanisms to protect vulnerable individuals (McDowell, 2023). By strengthening internal control mechanisms through cognitive-behavioral interventions, emotional support, and empowerment strategies, it may be possible to mitigate the impact of depression on susceptibility to online scams and enhance overall resilience in the digital realm (Wilson et al., 2023). Thus, the following hypotheses were proposed for this study:

- H1:* There is a relationship between depression and low internal control on the online scam susceptibility.
- H2:* There is a relationship between depression and online scam susceptibility.
- H3:* There is a mediating effect of low internal control on the relationship between depression and online scam susceptibility.

Relationship between Anxiety, Low Internal control, and Susceptibility

There is a significant relationship between anxiety and susceptibility to online scams, with internal control playing a crucial mediating role. Individuals experiencing anxiety may exhibit heightened stress levels, fear, and uncertainty, leading to impaired decision-making and increased susceptibility to online scams (Boyle, 2022). Anxiety can impair cognitive functioning, reduce risk assessment abilities, and increase impulsivity, making individuals more vulnerable to fraudulent schemes in the digital environment. Internal control, which refers to an individual's belief in their ability to control their environment and outcomes, can act as a protective factor against online scam susceptibility (Hall et al., 2023). Strong internal

control can enhance decision-making skills, cognitive processing, and risk assessment abilities, thereby reducing the impact of anxiety on susceptibility to online scams (DeLiema et al., 2022). Individuals with high internal control may exhibit greater resilience against the psychological and cognitive vulnerabilities associated with anxiety, making them less likely to fall victim to online scams (Ayaburi & Andoh-Baidoo, 2023). Understanding the mediating role of internal control in the relationship between anxiety and online scam susceptibility is essential for developing effective interventions and support mechanisms to protect individuals (Cavaliere et al., 2021). By strengthening internal control mechanisms through empowerment strategies, cognitive-behavioral techniques, and stress management interventions, it may be possible to reduce susceptibility to online scams among individuals experiencing anxiety and promote greater resilience in the digital landscape (Palnieri et al., 2021). Therefore, the following hypotheses were proposed for this study:

H4: There is a relationship between anxiety and low internal control on the online scam susceptibility.

H5: There is a relationship between anxiety and online scam susceptibility.

H6: There is a mediating effect of low internal control on the relationship between anxiety and online scam susceptibility.

Relationship between Emotional Exhaustion, Low Internal control, and Susceptibility

Emotional exhaustion has been linked to increased susceptibility to online scams, with internal control playing a vital mediating role in this relationship (Lazarus et al., 2023). Emotional exhaustion, often associated with chronic stress and burnout, can lead to cognitive impairments, reduced decision-making abilities, and emotional vulnerability, making individuals more prone to falling victim to online scams (Leonardo et al., 2021). The depletion of emotional resources and feelings of overwhelm can hinder individuals' ability to critically evaluate online information, increasing their susceptibility to fraudulent schemes (Tang et al., 2021). Internal control, which reflects an individual's belief in their ability to influence outcomes and exert control over their environment, can serve as a protective mechanism against online scam susceptibility (Burns et al., 2023). Strong internal control can enhance cognitive functioning, decision-making skills, and risk assessment abilities, mitigating the impact of emotional exhaustion on susceptibility to online scams (Mann et al., 2023). Individuals with high levels of internal control may exhibit greater resilience against the cognitive and emotional vulnerabilities associated with emotional exhaustion, reducing their likelihood of being deceived by online scams (Fainstad et al., 2022). Understanding the mediating role of internal control in the relationship between emotional exhaustion and online scam susceptibility is crucial for implementing targeted interventions and support strategies (Reeves et al., 2021). By strengthening internal control mechanisms through empowerment techniques, stress management strategies, and cognitive-behavioral interventions, it may be possible to reduce susceptibility to online scams among individuals experiencing emotional exhaustion and promote greater resilience in the digital realm (Thomas et al., 2021). Hence, the following hypotheses were proposed for this study:

H7: There is a relationship between emotional exhaustion and low internal control on the online scam susceptibility.

H8: There is a relationship between emotional exhaustion and online scam susceptibility.

H9: There is a relationship between low internal control and online scam susceptibility.

H10: There is a mediating effect of low internal control on the relationship between emotional exhaustion and online scam susceptibility.

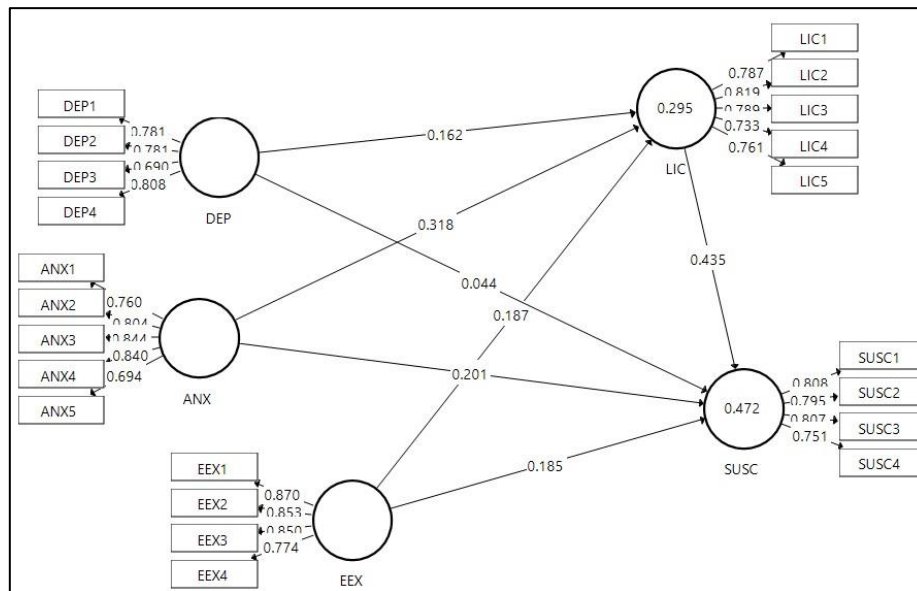


Figure 1: Research Framework

Note: DEP=Depression ANX=Anxiety EEX=Emotional Exhaustion LIC=Low Internal Control SUSC=Susceptibility

Methodology

In this research, the primary focus is on comprehensively understanding the psychological well-being of working adults aged 18 and above. Employing a causal-effect relationship study design, the unit of analysis is delimited to individual working adults, acknowledging their unique experiences and challenges in the professional realm. To delve into the intricate facets of their psychological states, a survey questionnaire serves as the primary instrument. This questionnaire is meticulously constructed Smith & Ascough (2016), incorporating measurement items for depression (4 items), trust (4 items), anxiety (5 items), emotional exhaustion (4 items), low internal control (5 items), and susceptibility (4 items). The research exclusively relies on primary data, gathered through a non-probability purposive sampling technique to ensure a diverse representation of the target population. A total of 415 survey questionnaires were distributed, yielding a response rate of 77.3%, with 321 returned and 306 datasets deemed clean for analysis. The chosen analytical approach for this study involves Structural Equation Modeling (SEM), and Smartpls4 software is employed as the analysis tool, recognized for its proficiency in handling complex SEM models (Ringle et al., 2022). This methodological framework aims to uncover the nuanced relationships between psychosocial factors and the overall well-being of working adults, contributing valuable insights to the existing literature and informing potential interventions in workplace settings.

Data Analysis

Respondents Profile

The respondents' profile analysis reveals a slightly skewed gender distribution, with males constituting 53.3% and females 46.7% of the sample. In terms of age, the majority falls within

the 31 to 50 years range, comprising 87.1% of respondents, with smaller percentages in age categories below 30 years (4.9%), 51 to 60 years (4.9%), and above 60 years (2.9%). Education-wise, 53.6% have undergraduate degrees, 32.7% hold postgraduate degrees, and 13.7% completed only secondary school. Regarding income, 52.9% earn less than RM4,850, 31.0% fall within the RM4,851 to RM10,970 range, and 16.0% report incomes exceeding RM10,971. In terms of marital status, 66.0% of respondents are married, 33.7% are single, and widows constitute a minimal 0.3% of the total. In summary, the survey sample is predominantly composed of males aged 31 to 50, with an educational background primarily at the undergraduate level. The majority have incomes below RM4,850, and a significant proportion are married, providing valuable demographic insights for the study.

Common Method Bias

Kock (2015) and Kock & Lynn (2012) introduced an inclusive methodology referred to as the collinearity test, which addresses both vertical and horizontal collinearity aspects. The identification of pathological collinearity relies on variance inflation factors (VIFs) exceeding 3.3, indicating a notable concern for common method bias within the model. Consequently, if the VIFs derived from the comprehensive collinearity assessment fall below 3.3, it can be deduced that the model remains unaffected by common method bias. As outlined in Table 1, the VIFs resulting from the overall collinearity assessment were found to be below 3.3, confirming the absence of any common method bias issue within the model.

Table 1
Full Collinearity

	MSUSC	MDEP	MANX	MEEEX	MLIC
MSUSC		1.839	1.784	1.756	1.475
MDEP	1.681		1.340	1.647	1.665
MANX	1.766	1.451		1.811	1.783
MEEEX	1.270	1.304	1.324		1.326
MLIC	1.398	1.726	1.707	1.736	

Measurement Model

In this investigation, we adopted the methodology recommended by Hair et al. (2017) to assess each measurement in both the first and second order, facilitating the identification of items with loadings below the 0.7 threshold. The analyses of construct reliability and validity unveiled that the Average Variance Extracted (AVE) for all constructs ranged from 0.587 to 0.702, surpassing the 0.5 benchmark, thereby indicating well-established convergent validity Hair et al (2017) (Table 2). Furthermore, the composite reliability for all constructs exceeded 0.7, falling within the range of 0.850 to 0.904. Additionally, Cronbach's alpha values for all constructs were greater than 0.7, varying from 0.765 to 0.857 (Table 2). To ensure discriminant validity, the initial step involved the evaluation of cross-loadings, ensuring appropriate representation and measurement of respective constructs (Table 3). Subsequently, the Heterotrait-Monotrait (HTMT) ratio was employed for further assessment, adhering to the recommended criterion for examining discriminant validity in Variance-Based Structural Equation Modeling (VB-SEM) (Henseler et al., 2015). Table 4 presented the HTMT ratios, original sample, and 95% confidence intervals, affirming compliance with the HTMT threshold of 0.85. The bias-corrected and accelerated bootstrap confidence intervals were all

below 1, strengthening confidence in the distinctiveness of constructs and their ability to measure different facets of the phenomenon under investigation.

Table 2

Construct Reliability & Validity

Constructs	CA	CR	AVE
ANX	0.850(0.813, 0.880)	0.892(0.868, 0.912)	0.625(0.571, 0.675)
DEP	0.765(0.716, 0.812)	0.850(0.824, 0.878)	0.587(0.537, 0.641)
EEX	0.857(0.823, 0.886)	0.904(0.883, 0.922)	0.702(0.654, 0.746)
LIC	0.837(0.799, 0.868)	0.885(0.861, 0.904)	0.606(0.554, 0.654)
SUSC	0.801(0.761, 0.838)	0.870(0.847, 0.891)	0.625(0.582, 0.672)

Notes: 97.5% Confidence Interval, CA=Cronbach Alpha CR=Composite Reliability AVE=Average

Variance Extracted

Table 3

Cross Loadings

	ANX	DEP	EEX	LIC	SUSC
ANX1	0.760	0.478	0.251	0.311	0.298
ANX2	0.804	0.417	0.314	0.372	0.399
ANX3	0.844	0.600	0.369	0.506	0.510
ANX4	0.840	0.467	0.312	0.387	0.417
ANX5	0.694	0.462	0.258	0.312	0.352
DEP1	0.450	0.781	0.342	0.333	0.336
DEP2	0.384	0.781	0.260	0.253	0.313
DEP3	0.474	0.690	0.248	0.361	0.300
DEP4	0.568	0.808	0.309	0.356	0.349
EEX1	0.376	0.345	0.870	0.295	0.413
EEX2	0.365	0.303	0.853	0.309	0.388
EEX3	0.241	0.283	0.850	0.310	0.313
EEX4	0.304	0.341	0.774	0.332	0.352
LIC1	0.421	0.400	0.317	0.787	0.554
LIC2	0.402	0.352	0.252	0.819	0.482
LIC3	0.316	0.315	0.276	0.789	0.432
LIC4	0.361	0.289	0.295	0.733	0.475
LIC5	0.395	0.303	0.301	0.761	0.455
SUSC1	0.484	0.401	0.371	0.562	0.808
SUSC2	0.413	0.340	0.351	0.443	0.795
SUSC3	0.422	0.349	0.356	0.473	0.807
SUSC4	0.278	0.235	0.309	0.473	0.751

Table 4

Heterotrait-Monotrait(HTMT) Ratios

Constructs	ANX	DEP	EEX	LIC
DEP	0.752(0.657, 0.842)			
EEX	0.442(0.310, 0.570)	0.466(0.312, 0.609)		
LIC	0.563(0.433, 0.665)	0.527(0.396, 0.640)	0.437(0.311, 0.560)	
SUSC	0.596(0.479, 0.692)	0.533(0.389, 0.661)	0.526(0.385, 0.647)	0.748(0.660, 0.825)

Note: A two-tail percentile bootstrap test at 5% confidence interval (2.5%, 97.5%) with 5,000 sub-samples was performed

Structural Model

In this research, the assessment of the structural model adhered to the methodology delineated by Hair et al (2017), concurrently examining pathway coefficients (β) and coefficients of determination (R^2). The Partial Least Squares (PLS) method was applied, utilizing 5000 subsamples to determine the significance level of path coefficients. The outcomes of hypothesis tests for confidence intervals, encompassing the path coefficients (beta), corresponding t-statistics, and p-values, are elaborated in Table 5. This meticulous analysis provides valuable insights into the significance and robustness of the relationships among the variables within the structural model. The hypotheses testing results, detailed in Table 5, provide a nuanced analysis of each hypothesis, emphasizing Beta coefficients, T-statistics, P-values, and decisions. For H1, suggesting a connection between Depression and Low Internal Control, the Beta coefficient of 0.162, T-statistics of 2.571, and P-value of 0.010 indicate strong support for the hypothesis. Conversely, H2, positing a relationship between Depression and Susceptibility, is not supported, as evidenced by a Beta coefficient of 0.044, T-statistics of 0.693, and a non-significant P-value of 0.488. Moving to H3, Low Internal Control significantly mediates the relationship between depression and Susceptibility, the Beta coefficient of 0.070, T-statistics of 2.429, and P-value of 0.015 confirm the support for this complex relationship. For H4, proposing a relationship between Anxiety and Low Internal Control, the substantial Beta coefficient of 0.318, accompanied by a T statistic of 4.988 and a remarkably low P value of 0.000, strongly supports the hypothesis. Moving to H5, investigating the association between Anxiety and Susceptibility, the Beta coefficient of 0.201, T statistic of 3.359, and a P value of 0.001 provide robust evidence, leading to a decisive endorsement of the hypothesis. Similarly, in H6, Low Internal Control significantly mediates the relationship between Anxiety and Susceptibility and is strongly supported by a Beta coefficient of 0.138, a T-statistic of 4.131, and a P value of 0.000. For H7, postulating a connection between Emotional Exhaustion and Low Internal Control, the Beta coefficient of 0.187, T-statistics of 3.323, and P-value of 0.001 provide compelling evidence, leading to the decisive support for the hypothesis. H8, exploring Emotional Exhaustion and its relation to Susceptibility, also stands supported, with a Beta coefficient of 0.185, T-statistics of 3.099, and a P-value of 0.002, reinforcing the robustness of this association. Moving to H9, which examines the link between Low Internal Control and Susceptibility, the substantial Beta coefficient of 0.435, T-statistics of 8.476, and an impressively low P-value of 0.000 underscore

the strength of this relationship, leading to unequivocal support for the hypothesis. Lastly, H10, Low Internal Control significantly mediates the relationship between Emotional Exhaustion and Susceptibility and is strongly supported by a Beta coefficient of 0.081, T-statistics of 3.027, and a P-value of 0.003.

Table 6 offers a comprehensive overview of the effect sizes measured independently of the sample size, following Cohen's criteria (1992): small (0.020 to 0.150), medium (0.150 to 0.350), or large (0.350 or greater). The observed effect sizes spanned from small (0.002) to large (0.253). Intrinsic Value Inflation Factor (VIF) values, detailed in Table 6, remained below the more lenient threshold of 5, with the highest value recorded at 1.838. This level of collinearity facilitates meaningful comparisons of sizes and interpretation of coefficients within the structural model. A notable degree of explained variance for the endogenous construct is evident, with an R² value of 0.472 (Figure 1). Regarding the mediator, the model accounted for approximately 29.5% of the variance in the structure, as indicated by an R² value of 0.295.

The model's inference and managerial suggestions were evaluated via out-of-sample predictive analysis using the PLSpredict method (Shmueli et al., 2016, 2019). Table 7 reveals superior Q² predictions (>0) by PLS-SEM over naive mean predictions, while PLS-SEM's consistently lower RMSE values than linear model (LM) benchmarks underscore its predictive prowess. Additionally, the root mean square error (RMSE) values of PLS-SEM predictions were consistently lower than those of the linear model (LM) prediction benchmark in nine out of nine instances, underscoring the predictive prowess of the proposed model as depicted in Table 7. Hair et al (2022) introduced the Cross-Validated Predictive Ability Test (CVPAT), and Lienggaard et al (2021) utilized a CVPAT and PLSpredict analysis. Table 8 confirms PLS-SEM's superior predictive capabilities, with lower average loss values compared to indicator averages and LM benchmarks, supporting its enhanced predictive performance.

Ringle and Sarstedt (2016); Hair et al (2018) proposed Importance Performance Map Analysis (IPMA) to assess latent variable significance and effectiveness in explaining acceptance, as detailed in Table 9. The overall impact on susceptibility was most pronounced for low internal control (0.435), followed by anxiety (0.339), emotional exhaustion (0.266), and depression (0.114), indicating their relative importance in adoption. Emotional exhaustion scored highest (67.543), while low internal control had the lowest score (61.030) on a 0-100 scale, reflecting better performance by emotional exhaustion and lower achievement for low internal control. Despite ranking third in susceptibility importance, low internal control displayed the lowest performance. These results suggest prioritizing activities to improve low internal control among working adults, potentially enhancing overall susceptibility to online scams.

Table 5

Hypotheses Testing Results

Hypotheses	Beta	T Statistics	P Values	2.50%	97.50%	Decision
H1: DEP -> LIC	0.162	2.571	0.010	0.030	0.278	<i>Supported</i>
H2: DEP -> SUSC	0.044	0.693	0.488	-0.065	0.178	Not Supported
H3: DEP -> LIC -> SUSC	0.070	2.429	0.015	0.016	0.127	<i>Supported</i>
H4: ANX -> LIC	0.318	4.988	0.000	0.170	0.432	<i>Supported</i>
H5: ANX -> SUSC	0.201	3.359	0.001	0.097	0.327	<i>Supported</i>
H6: ANX -> LIC -> SUSC	0.138	4.131	0.000	0.074	0.210	<i>Supported</i>
H7: EEX -> LIC	0.187	3.323	0.001	0.075	0.290	<i>Supported</i>
H8: EEX -> SUSC	0.185	3.099	0.002	0.064	0.307	<i>Supported</i>
H9: LIC -> SUSC	0.435	8.476	0.000	0.322	0.524	<i>Supported</i>
H10: EEX -> LIC -> SUSC	0.081	3.027	0.003	0.032	0.133	<i>Supported</i>

Table 6

Effect Sizes (f²) & Variance Inflation Factor (VIF)

	f ²	VIF
ANX -> LIC	0.084	1.695
ANX -> SUSC	0.041	1.838
DEP -> LIC	0.022	1.685
DEP -> SUSC	0.002	1.722
EEX -> LIC	0.040	1.223
EEX -> SUSC	0.051	1.273
LIC -> SUSC	0.253	1.418

Table 7

PLSpredicts

Indicators	PLS-RMSE	LM-RMSE	PLS-LM	Q ² _predict
LIC1	0.633	0.639	-0.006	0.207
LIC2	0.634	0.647	-0.013	0.167
LIC3	0.681	0.689	-0.008	0.121
LIC4	0.698	0.713	-0.015	0.145
LIC5	0.632	0.638	-0.006	0.166
SUSC1	0.624	0.630	-0.006	0.262
SUSC2	0.627	0.642	-0.015	0.201
SUSC3	0.682	0.697	-0.015	0.210
SUSC4	0.749	0.760	-0.011	0.098

Table 8

Cross-Validated Predictive Ability Test (CVPAT)

	Average loss difference	t-value	p-value
LIC	-0.246	4.590	0.000
SUSC	-0.122	3.616	0.000
Overall	-0.184	4.661	0.000

Table 9

Importance-Performance Map Analysis (IPMA)

Constructs	Total Effect	Performance
ANX	0.339	66.609
DEP	0.114	66.591
EEX	0.266	67.543
LIC	0.435	61.030

Discussion

The study's findings illuminate the intricate connections between psychological well-being and susceptibility to online scams among working adults, underscoring the paramount role of low internal control as a key determinant. With the highest influence on susceptibility (0.435) and the lowest performance score (61.030), low internal control emerges as a critical focal point for targeted interventions. Strategies aimed at mitigating depression, anxiety, and emotional exhaustion can serve as effective means to bolster internal control and reduce vulnerability to online scams. Addressing emotional exhaustion, a prevalent occupational hazard involves implementing organizational measures that foster a supportive work environment. Employers can introduce stress management programs, encourage open communication channels, and promote a culture that values employee well-being. Additionally, initiatives to improve work-life balance and flexibility can contribute significantly to reducing emotional exhaustion, thereby fortifying individuals against online scam susceptibility. Combatting anxiety requires a comprehensive approach encompassing cognitive-behavioral techniques, stress reduction programs, and mindfulness practices. Employers can play a pivotal role by offering stress management workshops, creating awareness about coping mechanisms, and integrating mindfulness initiatives into the workplace culture. Individuals, on the other hand, can proactively engage in mindfulness exercises, fostering emotional resilience and decreasing susceptibility to anxiety-related online scams. Mitigating depression involves multifaceted interventions. Employers can implement mental health support programs, destigmatize seeking professional help, and encourage a workplace atmosphere that prioritizes psychological well-being. Individuals can adopt lifestyle changes, engage in social activities, and seek therapy to address depressive symptoms effectively. Collectively, these strategies contribute not only to enhancing internal control but also to fostering mental well-being among working adults. By prioritizing and implementing these measures, organizations can create resilient and empowered workforces, substantially reducing susceptibility to online scams and cultivating a healthier and more secure work environment.

Theoretical Implications

The findings of the above study hold significant theoretical implications for the Conservation of Resources (COR) theory, shedding light on the dynamics between psychological resources and susceptibility to online scams among working adults. According to COR theory, individuals strive to acquire, protect, and maintain valuable resources, and the study's identification of low internal control as a central determinant aligns with this framework. The results suggest that low internal control can be perceived as a critical psychological resource within the work context, influencing susceptibility to online scams. This extends the application of COR theory beyond traditional workplace stressors to encompass the digital realm, emphasizing the importance of psychological resources in navigating the complexities of the online

environment. Moreover, the study's exploration of the relationships between depression, anxiety, emotional exhaustion, and online scam susceptibility contributes to our understanding of resource dynamics within the COR framework. It highlights the vulnerability of individuals with depleted psychological resources, showcasing the relevance of COR theory in explaining the impact of resource deficits on susceptibility to online scams. The study's emphasis on targeted interventions to address mental health issues as a means to enhance internal control aligns with COR theory's proposition that resource investment and acquisition are crucial for maintaining well-being. It suggests that bolstering psychological resources, such as internal control, through interventions can potentially act as a protective factor against online scam susceptibility. These theoretical implications emphasize the adaptability and relevance of COR theory in understanding resource dynamics in the modern, technology-driven workplace, paving the way for future research and intervention strategies in both the occupational and digital realms.

Contextual Implications

The findings of the above study carry significant contextual implications, particularly for the workplace environment and broader efforts to enhance cybersecurity awareness and resilience among working adults. The identification of low internal control as a central determinant of susceptibility to online scams suggests that interventions targeting this psychological resource could prove instrumental in mitigating cyber threats. Workplace initiatives aimed at fortifying internal control through stress management programs, organizational support, and work-life balance enhancements are crucial contextual implications for fostering a secure work environment. Additionally, the study underscores the importance of considering mental health as a critical factor in the context of cybersecurity. Employers and organizations can benefit from recognizing and addressing the psychological well-being of their workforce as an integral part of cybersecurity strategies. Initiatives promoting mental health, stress reduction, and coping mechanisms can contribute not only to the overall well-being of employees but also to creating a more secure and resilient workforce in the face of evolving cyber threats. Furthermore, the study suggests that cybersecurity awareness and training programs should extend beyond traditional technical aspects to include psychological factors. Educational efforts should incorporate information on the psychological aspects of online scam susceptibility, emphasizing the importance of maintaining robust internal control to navigate the digital landscape securely. This contextual shift in cybersecurity awareness programs aligns with the evolving nature of digital threats and the need for a holistic approach that considers both technical and psychological dimensions in building a cyber-secure workforce and environment.

Practical Implications

The practical implications drawn from the above study offer actionable insights for both individuals and organizations aiming to enhance cybersecurity resilience among working adults. To mitigate susceptibility to online scams, individuals can adopt targeted strategies to bolster their internal control, such as participating in stress management programs, embracing mindfulness practices, and seeking professional help to manage mental health effectively. These practical steps align with the study's emphasis on enhancing psychological resources to fortify defenses against cyber threats. For organizations, implementing workplace initiatives prioritizing employee well-being, including stress management workshops and creating a supportive work environment, can contribute to a more resilient

workforce. Recognizing the role of mental health in cybersecurity, companies should integrate mental health support programs into their wellness initiatives. This dual approach fosters employee well-being and strengthens the organization's cybersecurity posture by addressing the psychological factors influencing susceptibility to online scams. Furthermore, the study suggests tailoring cybersecurity training programs to encompass technical aspects and the psychological dimensions of online scam susceptibility. By incorporating information on maintaining robust internal control and promoting mental health within cybersecurity awareness training, organizations can empower employees with a comprehensive skill set to navigate the digital landscape securely. These practical implications underscore the importance of a holistic and proactive approach to cybersecurity, intertwining mental well-being and technical proficiency for a resilient and secure workforce.

Suggestions for Future Study

Building on the insights gained from the above study, several avenues for future research emerge. Firstly, exploring the effectiveness of targeted interventions aimed at enhancing internal control and reducing susceptibility to online scams warrants investigation. Assessing the long-term impact of stress management programs, mindfulness initiatives, and mental health support on both psychological well-being and cybersecurity resilience could provide valuable insights. Additionally, further research could delve into the role of organizational culture in influencing employees' internal control and susceptibility to online scams. Understanding how organizational practices and values contribute to or mitigate psychological factors related to cybersecurity could guide the development of tailored interventions. Furthermore, investigating the impact of technological advancements, such as artificial intelligence and machine learning, on the evolving landscape of online scams is crucial. Exploring how emerging technologies may influence the psychological dynamics of susceptibility and the effectiveness of traditional interventions is essential for staying ahead of cyber threats.

Conclusion

This study underscores the pivotal role of low internal control as a determinant of susceptibility to online scams among working adults. By emphasizing the interconnectedness of mental health and cybersecurity, the findings highlight the importance of targeted interventions for individuals and organizations. Practical strategies, such as stress management programs and mindfulness initiatives, can enhance internal control and fortify defences. Moreover, the study suggests a holistic approach to cybersecurity training, integrating both technical and psychological dimensions. As the digital landscape evolves, these insights pave the way for future research and practical initiatives that prioritize psychological well-being to foster a resilient and secure workforce.

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