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Factors Affecting the Perceived Safety Culture among Security Personnel in Philippines: An Integration of Protection Motivation Theory and the Expectation Confirmation Theory

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Abstract

The prevalence and increasing demand for security personnel in the Philippines stem from their historical role in safeguarding premises, the economic disparities that heighten the need for private security, and the rising crime rates that challenge public safety resources, which all contribute to the profession's demanding working conditions that severely influences their well-being, resulting in lapses in ensuring safety. This study aims to identify statistically significant variables affecting the Perceived Safety Culture (PSC) mindset and behavior of security personnel tasked with protecting assets and properties in the Philippines and examines Job Security, Safety Motivation, and Risk Perception as root factors while integrating Protection Motivation Theory (PMT) and the Expectation Confirmation Theory (ECT) and the variables under both theories, using partial least squares structural equation modeling (PLS-SEM). The data was gathered through online and onsite surveys utilizing convenience sampling, garnering 615 valid respondents, composed of licensed security personnel from various security agencies in the Philippines. Results revealed that all hypothesized variable relationships were significant, except for Job Security, which has an insignificant relationship with Perceived Vulnerability. The relationship between Perceived Safety Culture and Satisfaction has the highest beta coefficient (ß= 0.720, p= 0.000), making it the strongest relationship in the model. It suggests that Satisfaction further reinforces the Perceived Safety Culture, enabling security personnel to perform safety-related behaviors more effectively. These findings can help organizations refine their policies and training programs by prioritizing the three root factors identified in the model, as it eventually strengthens the safety culture among security personnel.

Keywords
Security Personnel, Perceived Safety Culture (PSC), Protection Motivation Theory (PMT), Expectation Confirmation Theory (ECT), Partial-Least Squares Structural Equation Modeling (PLS-SEM).

1. Introduction
The work of security personnel is primarily associated with ensuring the safety of both public and private institutions by protecting valuable assets of businesses and activities that focus on defensive rather than offensive roles (Ayeo-eo, 2019; Jovanović et al., 2019; Baluca et al. 2021). This work setting entails a big responsibility of preventing any damage for both citizens and the security personnel themself from risky behaviors considering that 60% of security personnel experienced exposure to harmful and violent behaviors, concluding that the security guard's work is classified as a high-risk domain for violent contact, requiring continuous monitoring to ensure safety serve as the "eyes and ears" of police which intimidates and threatens individuals planning to commit a crime (Herrmann et al. 2020; Kammersgard 2021; Catalbas & Lactuan, 2024). At the same time, developing countries, like the Philippines, also require preventive and reactive measures against crime due to their vulnerability to crime and the influence of economic conditions, such as a 22.4% poverty rate and 3.1% unemployment rate (NEDA 2024; Nikkei Asia 2023). A positive correlation was discovered between poverty factors and unemployment rates to crime, triggering the rise of criminal activity with increasing poverty gap and severity index, resulting in the Philippines having 1600 security agencies nationwide (Anser et al. 2020; Smartscraper, 2024; Sugiharti et al. 2023).

Despite the widespread need for security, the complex work demands of security personnel, which include prolonged working hours and night shifts while constantly requiring attention and being exposed to risk, may cause potential lapses in ensuring safety. Security measures may be affected by the complex demands of the profession, combined with prolonged working hours and night shifts, resulting in an excessive workload that heightens the risk of burnout as a response to chronic occupational stress, which negatively impacts job engagement, performance, and safety participation (Hui et al. 2022; Jovanović et al. 2020; Veljković et al. 2021). Siddesh & Ravindra (2020) concluded that occupational stress is common among security guards, with 74% experiencing moderate occupational stress; hence, effective work stress management is necessary. Security personnel also commonly work for more than 8 to 12 hours per day, which is 75% more likely to acquire burnout syndrome, a finding that security agencies must investigate (Veljković et al. 2021). Night shifts tend to reduce security guards' visual motor skills and alertness, both of which are essential to assuring safety (Helmhout 2022). Considering security guards' work demands and qualifications, analyzing the factors influencing their perception of safety culture is vital to maintaining a secure environment.

1.1 Objectives
The study aims to identify statistically significant variables affecting the safety culture mindset and behavior of security guards assigned to protecting assets and properties in the Philippines through structural equation modeling, integrating behavioral theories such as the Protection Motivation Theory and Expectation Confirmation Theory.

2. Literature Review
Studies on perceived safety culture are more commonly conducted in high-risk industries to enhance individual safety practices, strengthen safety management, and promote effective safety reporting among workers, however, there have been limited studies evaluating the perception of safety culture specifically within the security personnel profession (Berglund et al. 2023). Most studies focused on security personnel revolve around exploring the physical effects of occupational stressors on security guards (Jovanović et al. 2020). Considering this, there are still only a few studies conducted on how these stressors would affect the security guards mentally, such as their exploring factors affecting their intention to quit (Nagpaul et al. 2022).

This research seeks to extend these efforts to the security personnel profession in the Philippines, given the country's widespread demand for security personnel and the unique challenges they face in ensuring safety. The researchers have developed a conceptual research framework for the study consisting of ten latent variables: three root factors, namely Job Security (JS), Safety Motivation (SM), and Risk Perception (RP); two variables from Protection Motivation Theory, namely Perceived Severity (PS) and Perceived Vulnerability (PV); four variables from Expectation Confirmation Theory, namely Expectation (EX), Perceived Performance (PP), Confirmation (CN), and Satisfaction; and the dependent variable, Perceived Safety Culture (PSC).

Protection Motivation Theory (PMT) is a theoretical framework for evaluating human behavioral reactions to threats, assessing an individual's risk, delineating the factors that prompt individuals to safeguard themselves and react to perceived health risks and how people subsequently embrace protective behaviors or measures (Hedayati et al., 2023). Previous studies in various fields utilized the PMT to analyze the factors influencing safety behaviors. Ryu et al. (2023) employed the PMT to study whether protection motivation influences restaurant patrons' intention to engage in self-protective behaviors during the COVID-19 Pandemic. The theory can also be employed in the context of security personnel because of its usage in examining safety from previous studies and its application to the overall work environment of the sector.

The Expectation Confirmation Theory (ECT) defines how an individual's satisfaction is influenced and how satisfaction is related to continuous usage or intention in the context of user and consumer satisfaction (Guo 2022). The ECT was used to analyze safety behaviors from prior studies in many domains. For example, Tsai et al. (2020) applied the theory to develop consumer behavioral patterns on their ongoing intention to obtain food safety information on social media. The ECT also applies to the context of security personnel because of its usage in safety and its purpose, which includes expectations and performance. This is because occupational stress and burnout lead to decreased performance and unsafe behavior among workers in high-risk working conditions, including security guards, which is critical in their work area (Arpat & Bertan 2019; Hui & Hui-Wen 2022). Thus, the security personnel expect these risks, controlling danger and encountering distressing incidents in addition to the conditions stated (Jovanović et al. 2020).

Job security, safety motivation, and risk perception have been shown to influence safety behavior and performance but do not belong to the two chosen behavioral theories. Studies have demonstrated that job security and insecurity majorly impact employee safety behavior, particularly safety compliance and participation (Yi et al. 2021; Zhang et al. 2021). Subramaniam et al. (2023) have also found that safety motivation at work was demonstrated to predict nurses' safety behavior and that the component plays a mediating role in the relationship between safety leadership and nurses' engagement and compliance with safety protocols. Moreover, multiple studies have defined risk perception as a predictor of safety behavior and performance (Handoko et al. 2022; Wei & Kuo 2023). The aforementioned factors were integrated into the theoretical framework and will be studied to determine how they all relate to the factors under PMT and ECT.

3. Methods

3.1 Participants

The focus of this study was on licensed security personnel working across various industries in the Philippines. These professionals often endure demanding work schedules, with over 90% working more than 8 hours daily. Moreover, the study utilized a minimum sample size of 500 due to the large number of constructs used in the research, which is particularly suitable when using SEM (Hair & Alamer 2022). A total of 738 respondents participated, sourced nationwide with assistance from security agencies. After screening for eligibility and response quality, 615 valid responses from licensed security personnel were analyzed. The study gathered data on their sex, age, years of experience, workplace location, type of workplace, work shift schedule, working hours, salary, and satisfaction level with their employer.

Table 1. Respondents' Descriptive Statistics (N=615)

Characteristics	Category	N	%	Characteristics	Category	N	%
Sex	Male	478	77.72	Age	21 - 30 years old	208	33.82
	Female	137	22.28		31 - 40 years old	247	40.16
Years of Experience	1 month to 11 months	30	4.88		41 - 50 years old	125	20.33
	1 year - 5 years	258	41.95		51 - 60 years old	35	5.69
	5 years and 1 month - 10 years	198	32.2	Workplace Location	Region I – Ilocos Region	9	1.46
	10 years and 1 month - 15 years	68	11.06		Region II – Cagayan Valley	18	2.93
	15 years and 1 month - 20 years	34	5.53		Region III – Central Luzon	23	3.74
	20 years and 1 month - 25 years	14	2.28		Region IV-A – CALABARZON	35	5.69
	25 years and 1 month - 30 years	13	2.11		MIMAROPA Region	4	0.65
Type of Workplace	Banks / ATMs	27	4.39		Region V – Bicol Region	28	4.55
	Public Venues	259	42.11		Region VI – Western Visayas	47	7.64
	Educational Institutions	87	14.15		Region VII – Central Visayas	11	1.79
	Residences	90	14.63		Region VIII – Eastern Visayas	12	1.95
	Offices / Worksites	97	15.77		Region IX – Zamboanga Peninsula	6	0.98
	Healthcare Facilities	55	8.94		Region X – Northern Mindanao	2	0.33
Work Shift Schedule	Morning shift	215	34.96		Region XI – Davao Region	6	0.98
	Afternoon shift	36	5.85		Region XII – SOCCSKSARGEN	3	0.49
	Night shift	74	12.03		Region XIII – Caraga	2	0.33
	Rotating shifts	277	45.04		NCR – National Capital Region	396	64.39
	Not working in shifts	13	2.11		CAR – Cordillera Administrative Region	7	1.14
Working Hours	Up to 8 hours	57	9.27		BARMM – Bangsamoro Autonomous Region	6	0.98
	Between 8 to 12 hours	436	70.89	Satisfaction Level	Very Satisfied	232	37.72
	Over 12 hours	122	19.84		Satisfied	297	48.29
Salary	Less than minimum wage (< Php 12,000)	44	7.15		Neutral	80	13.01
	Minimum wage (Php 12,000 - 14,000)	261	42.44		Dissatisfied	3	0.49
	More than minimum wage (> Php 14,000)	310	50.41		Very Dissatisfied	3	0.49

3.2 Self-administered Questionnaire

Key workplace characteristics and impressions were intended to be measured by the survey questionnaire developed for licensed security guards in the Philippines. To be consistent with the statistical tools employed, ordinal data was used as the unit of measurement, and a 5-point Likert scale was used, with 1 denoting "strongly disagree" and 5 denoting "strongly agree." Job security, motivation to follow safety procedures, awareness of workplace risks, perceived seriousness of potential risks, perceived vulnerability to risks, expected results of safety measures, alignment of workplace conditions with previous expectations, overall job satisfaction, and perception of the organization's safety culture were among the variables evaluated.

Table 2. Study Constructs and Questions

Items	Measures/Questions	Supporting Reference
JS1	I believe that I work well when the workplace is safe from possible threats.	(Al-Harazneh, 2024)
JS2	I believe I can stay with my current job for as long as I want.	(Putri et al. 2023)
JS3	I feel satisfied with my employer's current working conditions, which adhere to Workplace Health, Safety, and Welfare regulations.	(Van Rensburg et al. 2023)
JS4	I believe that there is no current unemployment threat in my workplace.	(Putri et al., 2023; Van Rensburg et al., 2023)
JS5	I feel that my job provides me with a salary that ensures my ability to live and survive in this economy daily.	(Ehab, M. 2023; Putri et al. 2023)
JS6	I believe being a regular worker contributes to a healthy lifestyle and reduces the likelihood of long-term illness.	(Ehab, M. 2023; Van Rensburg et al., 2023)
SM1	I believe my personality helps me adhere to security standards in protecting physical assets and people.	(Hedayati et al. 2023)
SM2	I believe exposure to uncertain circumstances, such as criminal and unlawful acts, motivates me to do better.	(Ayeo-Eo, 2023; Baluca et al. 2021; Ciagala et al. 2024)
SM3	I feel certain that if I prioritize safety, people around me will do the same.	(Sharma & Aparicio, 2022)
SM4		(Ciagala et al., 2024)

SM5	I believe I am willing to participate in safety activities, provided my employer covers the expenses. I believe that I am driven to secure the surroundings when I am mentally well.	(Ciagala et al. 2024; Shore et al. 2022)
RP1	I believe that a strong presence of mind gives me a way to respond immediately.	(Nazneen et al., 2021)
RP2	I believe that the formation of my strategic response to situations is based on how I perceive the risk I encounter.	(Griesi et al., 2024)
RP3	I believe that my capability to recognize hazards can prevent security threats.	(Sharma & Aparicio, 2022)
RP4	I feel that I should plan preventive measures such as monitoring the danger zone when I see potential threats.	(Nazneen et al. 2021)
RP5	I feel a heightened sense of emotion, such as fear, stress, and frustration, when I see possible threats in the workplace.	(Lahlouh et a1. 2023)
PS1	I believe that I am informed enough about the essential preventive behaviors.	(Kim et al., 2023)
PS2	I believe I am well aware of the levels of hazards and risks in my occupation.	(Omar et al., 2021)
PS3	I believe I am resilient to health risks in my occupation.	(Lahlouh et al., 2023)
PS4	I believe most people do not have access to harmful equipment that threatens our security.	(Gantalao, 2022)
PS5	I believe my work environment is secure enough that threats will have difficulty infiltrating.	(Ciagala et al., 2024)
PV1	I believe I have the skills and judgment to respond to unexpected threats.	(Smith et al., 2023; Yaris et al., 2020)
PV2	I believe that I have access to resources and procedures that can help me manage risk exposure.	
PV3	I feel confident in my occupation and can do my job without avoiding behaviors holding me back.	(Jovanović et al., 2020)
PV4	I believe that the presence of dangerous threats is rare to make me feel exposed.	(Kammersgaard, 2019)
PV5	I believe my presence alone lessens the frequency of threats, making me feel more safe.	
EX1	I feel that my company will provide me with a safe and secure work environment.	(Ciagala et al., 2024)
EX2	I feel that the company I am working on provides me with sufficient equipment to protect me and the property I manage in case of threats.	(Bakker & De Vries, 2020)
EX3	I feel that I will receive enough promotion opportunities from my superiors because of my service.	(Jovanović et al., 2020)
EX4	I feel that I will have a manageable work schedule to balance my responsibilities and personal life.	(Jovanović et al., 2020; Veljković, 2021)
EX5	I feel that the protocols and procedures established by our supervisors for security guards in response to potential threats effectively ensure our safety.	(Sharma & Aparicio, 2022).
PP1	I believe I am physically capable of maintaining a safe environment.	(Singhania et al., 2023; Smith et al., 2023)
PP2	I believe I am equipped with the knowledge and skills to ensure environmental safety.	(Ayeo-Eo, 2023)
PP3	I believe that the training I receive effectively prepares me to respond to security threats and successfully defend properties.	(Ayeo-Eo, 2023; Jovanović et al., 2020; Smith et al., 2023)
PP4	I believe that having complete sleep will help me focus on my duties and increase my effectiveness at work.	(Helmhout et al., 2022; Jovanović et al., 2020)
PP5	I believe I manage my work stress well to focus and monitor the environment to maintain safety.	(Jovanović et al., 2020; Siddesh & Ravindra, et. al., 2020)
CN1	I am confident that I can maintain a safe environment in my workplace.	(Smith et al., 2023; Yaris et al., 2020)
CN2	I am confident in displaying my legal power and authority at work.	(Kammersgaard, 2019; Ellison & Gainey, 2020)
CN3	I am confident in managing my behavior and emotions at work.	(Yaris et al., 2020; Hui & Hui, 2022)
CN4	I am confident that I am well-equipped with enough knowledge, skills, and competency.	(Aeyo-eo, 2023)
CN5	I can confirm that I have manageable work demands such as work schedule, workload, task distribution, and work environment.	(Jovanović et al., 2020; Smith et al., 2023)
ST1	I feel fulfilled when I perform according to standards to maintain a safe environment in my workplace.	(Jovanović et al., 2020)
ST2	I feel satisfied when I am well compensated and rewarded by my company.	(Yaris et al., 2020; Nagpaul et al., 2022)
ST3	I feel well-supported when my co-workers and I effectively collaborate and communicate.	(Catalbas & Lactuan, 2024; Nagpaul et al., 2022)
ST4	I feel assured when my company exhibits fairness and transparency in its work policies and procedures.	(Nagpaul et al., 2022)
ST5	I feel satisfied when I plan healthy coping strategies for the stress and fatigue I may encounter at work.	(Jovanović et al., 2020; Yaris et al., 2020; Siddesh & Ravindra, 2020)
PSC1	I feel like I am in a workplace where the rules and regulations are provided and abided by.	(Ismail & Ramli, 2023)
PSC2	I believe I am in a workplace that takes safety incidents seriously	(Berglund et al., 2023)
PSC3	I see that our leadership team and management regularly communicate their commitment to safety.	(Lahlouh et al., 2023)
PSC4	I believe there is a strong sense of teamwork and collaboration regarding safety in our occupation.	(Berglund et al., 2023)
PSC5	I feel comfortable speaking up about safety concerns and suggestions for improving safety.	(Rahmani et al., 2023)
PSC6	I believe safety drills are taken seriously by our management and benefit our security preparedness.	(Wang et al., 2023)
PSC7	I believe wearing Personal Protective Equipment (PPE) is a standard practice that all security guards should follow.	(Shwe et al., 2021)

4. Data Collection

The researchers carried out a thorough literature analysis to lay the groundwork for the study, narrow its focus, and pinpoint any research gaps. With a focus on the perceived safety culture among Philippine security professionals, the Protection Motivation Theory and Expectation Confirmation Theory were combined to create a robust framework. 186 respondents participated in a pilot study that validated using survey questionnaires as the main instrument for gathering data. To collect data, Google Forms was used for online responses, and paper questionnaires were distributed to licensed security guards. To evaluate the validity of the model, the data was first gathered and then subjected to Partial Least Squares-Structural Equation Modeling (PLS-SEM) analysis using SmartPLS software. Thus, the researchers used the study's findings to develop conclusions and suggestions.

5. Results and Discussion

5.1 Numerical Results

Table 3. Model Fit Indices

Parameters	Values	Threshold	Suggested by
Standardized Root Mean Squared Residual (SRMR)	0.058	≤ 0.08	(Henseler et al., 2014)
Normed Fit Index (NFI)	0.744	≥ 0.70	(Yusif et al., 2020)
Variance Inflation Factor (VIF)	1.275 to 2.038	< 3.30	(Kock, 2015)

The following results assess the model's fit, and all meet the required thresholds in Table 3. For the Standardized Root Mean Squared Residual (SRMR) and Normal Fit Index (NFI), the saturated model was used as it evaluates the correlation between all constructs (Ringle et al. 2024). The SRMR of 0.058 is below the threshold of 0.08, indicating a good model fit. For further validation, the NFI of 0.744 is close to the ideal threshold value of greater than or equal to 0.9. However, an NFI above 0.70 is still acceptable since improvements are possible. Regardless, in the context of exploratory research using PLS-SEM, these metrics are secondary to the model's ability to generate useful insights and predictions about relationships in the data (Ringle et al. 2024).

5.2 Graphical Results

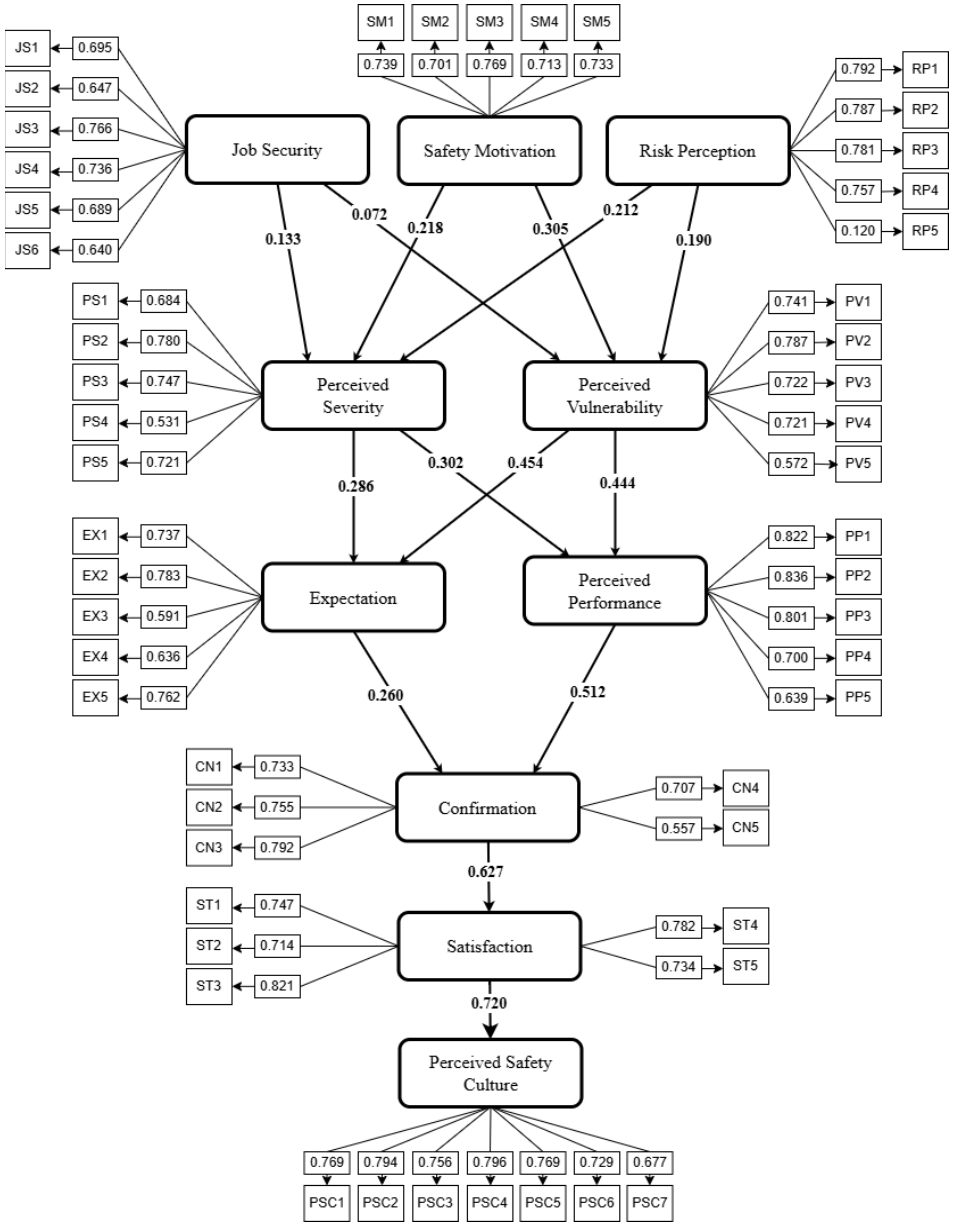

Figure 1. Initial SEM Model

The initial structural equation model (SEM) is shown in Figure 1 with indicators, loadings, and beta coefficients of the factors affecting the perceived safety culture among security personnel in the Philippines. Constructs with initial factor loadings below 0.708 were removed, which is the criterion for construct reliability (Hair & Alamer, 2022). As a result, researchers found that the relationship between job security and perceived vulnerability was insignificant, with a p-value of 0.171, exceeding the 0.05 threshold for statistical significance, at a 95% confidence level (Hair & Alamer, 2022). Therefore, hypothesis H2 must be removed from the final SEM. In service sector employees, job security positively affects employees' intention to stay, but objective aspects and factors of job security, like full-time hours and successive contracts, are insignificant to their perceived vulnerability of job safety, and a decline in job security is not necessarily associated with a decrease in the perceived vulnerability of safety among workers (Sætrevik et al. 2020).

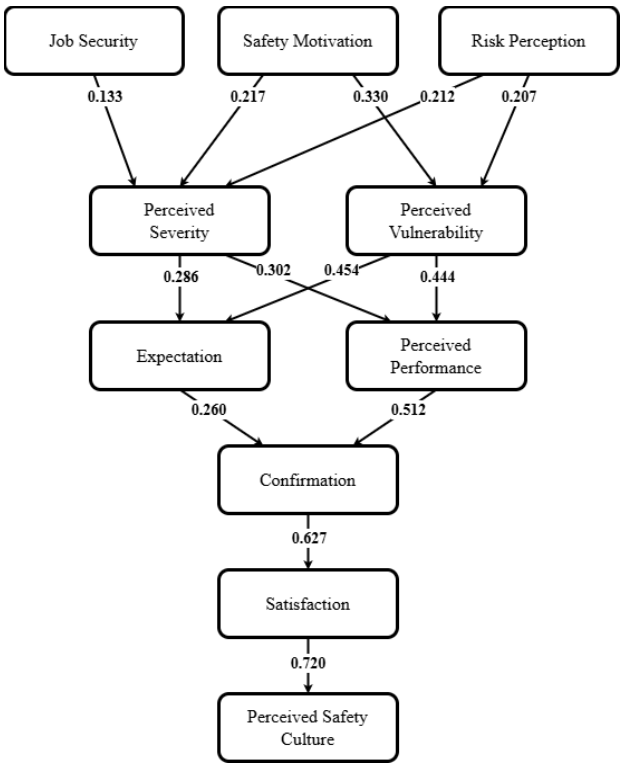

Figure 2. Final SEM Model

Figure 2 shows the final SEM, developed by removing the insignificant hypothesis H2, which represents the relationship between job security and perceived vulnerability, as well as factor loadings below 0.708. Despite these adjustments, the final SEM retains the same latent variables as the initial model: Job Security, Safety Motivation, Risk Perception, Perceived Severity, Perceived Vulnerability, Expectation, Perceived Performance, Confirmation, Satisfaction, and Perceived Safety Culture.

5.3 Proposed Improvements

The findings of this study emphasize key measures to enhance the perceived safety culture among security personnel in the Philippines, focusing on the three root factors – job security, safety motivation, and risk perception which influence a cascading effect that shapes how security personnel perceive threats within the PMT framework. This, in turn, influences their Expectations (EX) and Perceived Performance (PP) when responding to threats. Once these perceptions are confirmed (CN), they impact Satisfaction (ST), shaping the overall perceived safety culture. Considering the theoretical model developed, the root factors should be addressed and enhanced through comprehensive strategies that strengthen risk awareness while ensuring that security personnel feel supported, safe, and secure in their roles.

With that said, training and development must be prioritized through workshops, scenario-based drills, and emergency response exercises. Emergency preparedness should also be reinforced with coordinated drills and quarterly safety audits to ensure compliance with security protocols. These trainings enhance security guards' risk perception because they are now pre-exposed to threatening situations, enabling them to accurately assess threats, while also strengthening their safety motivation by encouraging them to perform necessary safety measures once the threat has been assessed. Ensuring visible security measures, such as the provision of personal protective equipment (PPE), installing surveillance systems, and enforcing strict access controls, also enhances their perception of risk. As they become more capable of protecting themselves, these measures encourage proactive safety behaviors and strengthen their overall commitment to maintaining a safe environment.

Safety and security threats concern not only the physical hazards of security personnel but also the work environment, which is connected to their sense of job security. Thus, mental health support and job stability must be prioritized through stress management programs, counseling, and improved employment benefits such as long-term contracts and flexible work arrangements. To ensure regulatory compliance, security agencies should align policies with the Occupational Safety and Health Standards (OSHS) under R.A. 11058 and appoint qualified Safety Officers to oversee workplace safety. Lastly, an incentive system should be implemented to recognize personnel who consistently follow safety protocols and demonstrate high performance. By integrating these strategies, security agencies can foster a stronger safety culture, enhance personnel well-being, and improve overall security operations, ultimately contributing to a safer working environment.

5.4 Validation

Table 4. Construct Validity

Construct	Cronbach's Alpha	rho_A	rho_C	AVE	Construct	Cronbach's Alpha	rho_A	rho_C	AVE
Confirmation	0.76	0.762	0.847	0.852	Perceived Severity	0.732	0.735	0.833	0.555
Expectations	0.704	0.707	0.835	0.629	Perceived Vulnerability	0.749	0.753	0.841	0.57
Job Security	0.773	0.786	0.853	0.592	Risk Perception	0.794	0.795	0.866	0.617
Perceived Performance	0.819	0.834	0.88	0.648	Safety Motivation	0.783	0.786	0.852	0.535
Perceived Safety Culture	0.867	0.872	0.9	0.601	Satisfaction	0.817	0.819	0.872	0.578

To assess the study's validity and reliability, the researchers used Cronbach's Alpha (CA), Composite Reliability (rho_A and rho_C), and Average Variance Extracted (AVE) to evaluate whether the survey indicators consistently and accurately measure respondent's sentiments about the factors affecting safety culture in the Philippines. Based on the results presented in Table 4, the Cronbach's Alpha values for the variables and constructs ranged from 0.704 to 0.86, aligning with the recommendation that Cronbach's Alpha values should be greater than 0.7, which also implies that the items in the scale are reliably measuring the same underlying concept of (Zhang et al., 2024). Second, the Composite Reliability (rho_C) values all fall within the 0.7 to 0.9 standard, signifying that the indicators consistently measure the same underlying construct that defines a study's rigid reliability.

Table 5**.** Heterotrait-Monotrait Ratio Results

	JS	SM	RP	PS	PV	EX	PP	CN	ST	PSC
JS										
SM	**0.661**									
RP	0.617	**0.897**								
PS	0.440	0.566	**0.559**							
PV	0.395	0.606	0.557	**0.885**						
EX	0.533	0.562	0.518	0.812	**0.887**					
PP	0.355	0.611	0.598	0.757	0.800	**0.795**				
CN	0.430	0.596	0.598	0.736	0.815	0.784	**0.841**			
ST	0.342	0.562	0.514	0.529	0.616	0.684	0.728	**0.792**		
PSC	0.397	0.519	0.521	0.585	0.622	0.724	0.687	0.764	**0.850**	

Conversely, the composite reliability (rho_A) results are in the middle of Cronbach Alpha and Composite Reliability (rho_C), providing a better measure of construct reliability (Hair & Alamer, 2022). Lastly, the average variance extracted is greater than the threshold value of 0.50, which means that constructs have a strong convergent validity (Hair & Alamer, 2022; Zhang et al., 2024). These findings highlight that the survey instrument is consistent across respondents and reliable in accurately capturing the intended variables.

In addition, one way to assess the discriminant validity of the research results is through the Heterotrait-Monotrait (HTMT) ratio. Studies suggest that an HTMT value below 0.9 indicates adequate discriminant validity between two reflectively measured constructs (Hair & Alamer, 2022). Since all HTMT ratio values in this study are below 0.9, discriminant validity is considered to be established.

6. Conclusion

The integration of Protection Motivation Theory (PMT) and Expectation Confirmation Theory (ECT) provided a comprehensive understanding of the factors influencing the perceived safety culture among security personnel in the Philippines. Through Partial Least Squares Structural Equation Modeling (PLS-SEM), the analysis of ten key latent variables—Job Security, Safety Motivation, Risk Perception, Perceived Severity, Perceived Vulnerability, Expectation, Perceived Performance, Confirmation, Satisfaction, and Perceived Safety Culture—revealed significant interrelationships, except for the link between Job Security and Perceived Vulnerability, which was found to be statistically insignificant.

Satisfaction (ST) emerged as the strongest predictor of perceived safety culture, highlighting the importance of job stability, fair compensation, and a supportive work environment in shaping safety behaviors. Expectations and perceived performance significantly influenced confirmation, which affected satisfaction, demonstrating the impact of workplace conditions on safety culture. Risk perception and perceived vulnerability also played a crucial role in fostering proactive safety behaviors, emphasizing the need for continuous risk-awareness training and hazard-prevention measures.

By validating the PMT-ECT framework in the security sector, the findings offer valuable insights for security agencies, policymakers, and occupational safety professionals. Strengthening training programs, workplace conditions, and regulatory compliance is essential to cultivating a resilient and proactive safety culture among security personnel.

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