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Causal factors of operator's safetyPerception affecting safety oriented behavior In the commercial air transport services

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Abstract

This article aimed 1) to study the causal factors affecting operator's safety perception and the safety oriented behavior for commercial air transport services, 2) to study the influence of causal factors of operator's safety perception affecting the safety oriented behavior for commercial air transport services, and 3) to develop a model the causal factors of operator's safety perception affecting the safety oriented behavior for commercial air transport services. A researcher collected data from interviews and online questionnaires with commercial air transport services, from May 2024 to July 2024 by collecting a sample of 420 people. The results of the analysis concluded that guidance of safety affected operator's safety perception, guidance of safety affected safety oriented behavior through operator's safety perception, guidance of safety affect operator's safety perception, guidance of safety affected safety oriented behavior through operator's safety perception, organizational safety climate affected on operator's safety perception, organizational safety climate affected safety oriented behavior through operator's safety perception, and operator's safety perception affected safety oriented behavior. An air transport service provider can adopt an approach or research framework to develop the safety competencies of its employees, ensuring that they are aware of and follow operational practices that promote safety for both the organization and its service users in the correct manner.

Keywords: Guidance of safety, Guidance of Safety, Organizational Safety Climate, Operator's safety perception, Safety Oriented Behavior

1. Introduction

The aviation industry plays a crucial role in the economic development on a global, regional, and national scale. The increasing demand for air travel has led to continuous growth in the aviation industry across all regions of the world, including Thailand. Currently, passengers or users of aviation services are becoming more knowledgeable about the services they receive. Therefore, to establish standards and build confidence among service users, as well as to ensure the safety of the country's aviation industry, businesses within the aviation sector must raise awareness among employees about the importance of safety. This awareness ensures that workers understand the significance of safety in their duties, enabling them to perform their responsibilities safely. As a result, the researcher is interested in studying how the concept of safety awareness among employees can influence behavior that focuses on safety in air transport services. Research related to the safety awareness of workers and its impact on s

The researcher collected data from air transport service providers, categorized according to the structure of the aviation industry as defined by the International Civil Aviation Organization (ICAO). This classification includes two groups: scheduled service providers and non-scheduled service providers. Data were gathered through interviews with experts and experienced professionals in the aviation and safety sectors, as well as an online survey distributed to air transport service providers. The data collection took place from May 2024 to July 2024. For the qualitative population, the sample consisted of 5 experts with experience in the aviation industry and safety. For the quantitative population, the sample comprised 420 air transport service providers, calculated based on data analysis techniques using Structural Equation Modeling (SEM).

The expected benefits are that air transport service providers can apply the guidelines to develop the safety competencies of their employees, ensuring that they become more aware and have the correct Guidance of Safety that contribute to both organizational and passenger safety. This research article presents a study based on the application of systems theory to develop and examine empirical variables that influence workers' safety awareness and safety oriented behaviors. The researcher believes that the findings of this study will be important for air transport service providers, as well as for academic benefits, such as for scholars, researchers, and students. They can use the empirical findings from this study to further develop integration and advance academic research in the field.

2. Research Objectives

1) To study the causal factors affecting operator's safety perception and the safety oriented behavior in the commercial air transport services.
2) To study the influence of causal factors of operator's safety perception affecting the safety oriented behavior in the commercial air transport services.
3) To develop a model the causal factors of operator's safety perception affecting the safety oriented behavior in the commercial air transport services.

3. Literature Review

The concepts and theories used in the research encompass the service quality, guidance of safety, organizational safety climate, operator's safety perception, and safety oriented behavior. As mentioned in the background and significance of the problem, these are the variables that define the conceptual framework. The examination of the relationships between these variables is as follows:

Hypothesis 1: The relationship between service quality and operator's safety perception

Wang et al. (2022) conducted research on the operator's safety perception of tourists in urban forest environments: focusing on image quality, the completeness of facilities, and accessibility, using urban forest case studies in Fuzhou, China.

Khassawneh and Mohammad (2021) conducted research on evaluating the relationship between human resource practices and service quality.

Su et al. (2021) conducted research on the effects of operator's safety perception, engagement, and service quality on the loyalty intentions of passengers using bus services.

Hypothesis 2: The relationship between service quality and safety oriented behavior through operator's safety perception

Deng et al. (2020) conducted a study on exploring the impact of safety atmosphere on workers' safety behavior in the operation of subway systems.

Ismail et al. (2022) studied the role of service quality as a key factor in enhancing customer behavior intentions, with a case study on the Malaysian Army Medical Centre.

Kumar and Nayna (2018) conducted research on service quality management, proposing a conceptual framework for front-line departments in the hotel industry, emphasizing the critical relationship between service quality and work behavior in the context of the hotel industry.

Hypothesis 3: The relationship between guidance of safety and operator's safety perception

Deng et al. (2020) conducted research on exploring the impact of safety atmosphere on workers' safety behavior in subway operations, highlighting the importance of the relationship between safety approaches and Operator's safety perceptions in the workplace.

Dollard (2010) conducted research on psychosocial safety climate, developing the PSC-12, which emphasizes the relationship between safety approaches and Operator's safety perceptions in the workplace.

Velayatzadeh (2022) studied the assessment of risk perception and safety climate among employees of Andishmandan Jonoob Company in 2020.

Hypothesis 4: The relationship between guidance of safety and safety oriented behavior through operator's safety perception

Mat et al. (2021) conducted a study on a conceptual framework for occupational health and safety management practices that impact the safety performance of Malaysian SMEs.

Cheng et al. (2018) studied the relationship between management practices and safety, finding that the relationship between safety approaches and work behavior is crucial for ensuring a safe and healthy work environment.
Ansah (2012) studied the relationship between the safety measures of an oil marketing company and the Guidance of Safety of employees at gas stations in the Sakon Nakhon-Takoradi area.

Hypothesis 5: The relationship between organizational safety climate and operator's safety perception
Maneechaeye and Potipiroon (2021) conducted a study on the impact of safety climate at both the flight crew and organizational levels on the safety behavior of Thai civilian pilots.
Ekonomi and Dergisi (2023) studied the perception of safe working conditions among flight attendants in Turkey, with a case study on an airline company.
Kosydar-Bochenek et al. (2022) researched the perception of safety climate among patients by healthcare professionals during the COVID-19 pandemic, conducting an international-level study.

Hypothesis 6: The relationship between organizational safety climate and safety oriented behavior through operator's safety perception
Saleem and Malik (2022) conducted a study on safety management and safety performance, exploring the connection between safety consciousness, safety climate, and responsible leadership.
Sun (2022) studied how safety climate influences safety outcomes, investigating the mediating role of psychosocial safety from a cognitive perspective.
Griffin and Curcuruto (2016) studied organizational safety climate, finding that the relationship between an organization's safety climate and work behavior is crucial for ensuring a safe work environment.

Hypothesis 7: The relationship between operator's safety perception and safety oriented behavior
Prentice and Singh (2018) conducted a study on the influence of risk perception and brand image on airline passengers' travel behavior, finding that Operator's safety perception significantly influences work behavior in the aviation industry.
Francis et al. (2022) studied passengers' perceptions of Guidance of Safety related to Bancas' engine safety measures involved in activities and tourism services in the Biliran Navy.
Platania (2020) conducted a study on the examination of OSCI in Italy, focusing on organizations and safety, as well as inventory and climate conditions.

4. Research Framework

This research employs both qualitative and quantitative methods. The researcher has established the research framework based on systems theory, summarizing the components of the system as follows: (1) Inputs, (2) Processes, (3) Outputs, and (4) Feedback.

(1) Inputs refer to the service quality, which consists of four components: 1) Reliability, 2) Assurance, 3) Tangibles, 4) Empathy, and 5) Responsiveness; guidance of safety, which consists of four components: 1) Safety Policy, 2) Safety Risk Management, 3) Safety Assurance, and 4) Safety Training; organizational safety climate, which consists of four components: 1) Management Support and Commitment, 2) Management Priority, 3) Organizational Communication, and 4) Organizational Participation and Involvement.
(2) Process refers to operator's safety perception, which consists of four components: 1) Rules and Regulations, 2) Safety Information, 3) Physical and Mental Readiness, and 4) Working Environment.
(3) Outputs refer to safety oriented behavior, which includes four components: 1) Follow the Regulations, 2) Follow the Technical Manual, 3) Using Tools and Equipment Correctly, and 4) Hazard Report.
(4) Feedback refers to safety oriented behavior, which is an output that feeds back into the service quality, guidance of safety, and organizational safety climate.

The four components are interrelated, and none can exist in isolation. A change in one component will inevitably affect the others; any deficiencies or errors in one component will lead to shortcomings in the others. The details are as follows:

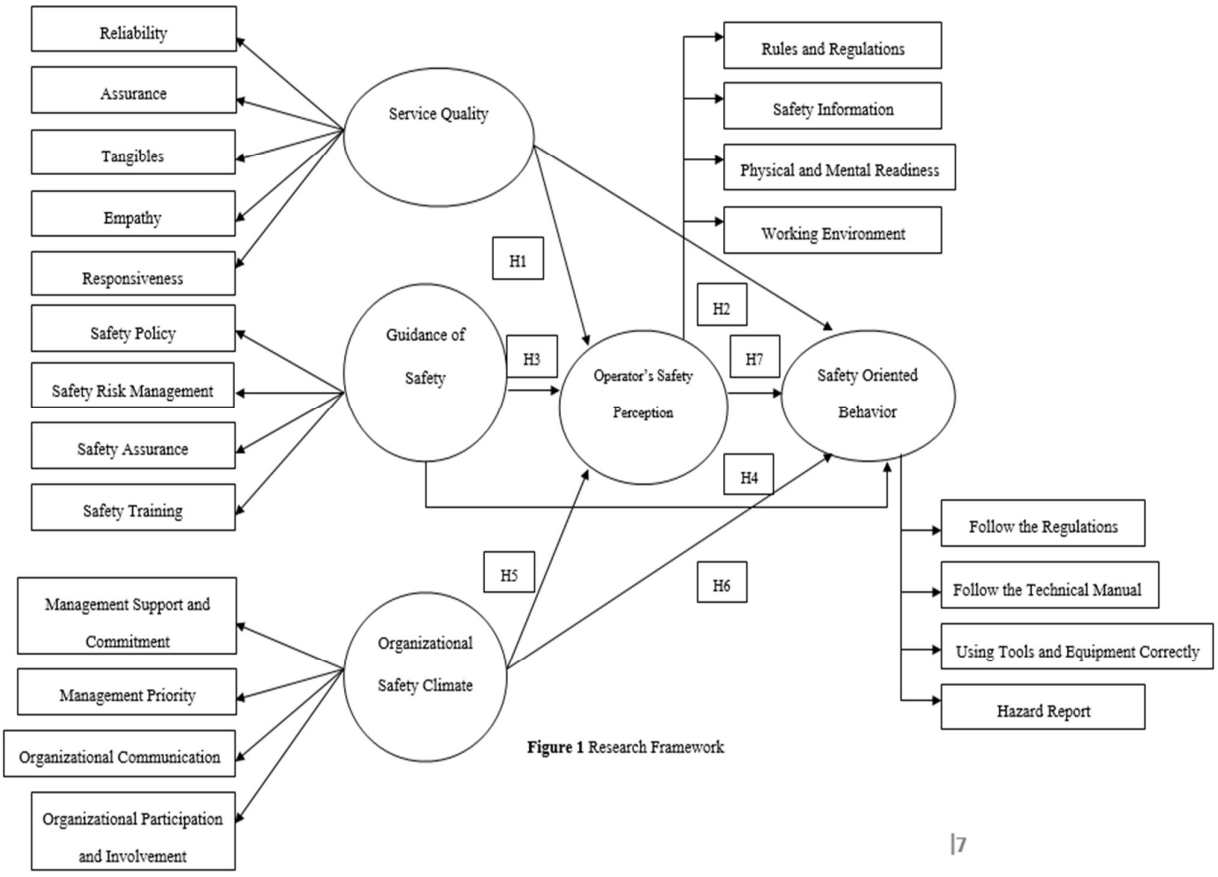

Figure 1 Research Framework

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Figure 1 Research Framework

5. Research Methodology

This research is a mixed-methods study. The research area involves data collection from air transport service providers according to the structure of the aviation industry as defined by the International Civil Aviation Organization (ICAO).

The population consists of 26 air transport service providers (Civil Aviation Authority of Thailand, 2024). The sample group consists of 420 air transport service providers, selected using Structural Equation Modeling (SEM) as the statistical selection technique. According to the research framework, there are 5 latent variables and 21 observed variables. Statisticians recommend that the sample size should be between 15 to 20 times the number of observed variables (Hair et al., 2006), which is considered an appropriate sample size for multivariable analysis. Therefore, the suitable and sufficient sample size should range from 15 x 21 = 315 to 20 x 21 = 420.

The research tools consist of two types.

1) The questionnaire consists of the following sections: Section 1 relates to the general characteristics of the organization of the survey respondents; Section 2 concerns service quality; Section 3 deals with guidance of safety; Section 4 focuses on the organizational safety climate; Section 5 pertains to operator's safety perception; Section 6 addresses safety oriented behavior.

The researcher delivered a draft of the questionnaire to 5 experts for evaluation, calculating the Item-Objective Congruence (IOC) index, which was found to be 0.97. The reliability of the research tool was also tested, with a reliability

coefficient of 0.98. This questionnaire is intended to study the causal factors of operator's safety perception that influence safety oriented behavior in air transport services.

2) Interview Questions:

- How do you perceive the overall service quality of air transport, and what factors do you think it impacts?
- Do you believe the aviation industry should consider applying guidance safety to enhance Operator's safety perception for passengers? What factors do you think this would impact?
- How do you perceive the organizational safety climate for the aviation industry as a whole? What factors do you think this would impact?
- Overall, how are service quality, guidance of safety, organizational safety climate, and operator's safety perception related to each other?
- Does your organization consider operator's safety perception in any specific dimensions, and how is this addressed?
- To change safety oriented behavior, what factors do you think have both direct and indirect impacts?
- Do you think operator's safety perception influences your safety oriented behavior? If so, how?

The researcher collected data through in-depth interviews conducted between May 2024 and July 2024. The data was then analyzed and synthesized, followed by descriptive narration and content analysis to develop the model derived from the quantitative aspect.

6. Research Results

Objective 1	**Research Findings**
Service Quality	The respondents' opinions on the overall service quality were at a high level. When examining each aspect separately, all aspects were rated highly. Specifically, the quality of tangibles was rated the highest, followed by trust and empathy, reliability, and employee responsiveness.
Guidance of Safety	The respondents' opinions on guidance of safety were at a high level overall. When examining each aspect separately, it was found that guidance of safety was rated the highest, followed by safety assurance, which was also rated highly. The availability of easily accessible and understandable safety information was rated highly, as was safety risk management and safety training, both of which were rated at a high level.
Organizational Safety Climate	The respondents' opinions on the overall organizational safety climate were at a high level. When examining each aspect separately, it was found that management support and commitment were rated the highest, followed by organizational participation, which was also rated highly. Management priority and organizational communication were both rated at a high level as well.
Operator's Safety Perception	The respondents' opinions on operator's safety perception were at a high level overall. When examining each aspect separately, it was found that rules and regulations were rated the highest, followed by the working environment, which was also rated highly. Physical and mental readiness, as well as safety information, was both rated at a high level.
Safety Oriented Behavior	The respondents' opinions on safety oriented behavior were at a high level overall. When examining each aspect separately, it was found that following the technical manual was rated the highest, followed by using tools and equipment correctly, and reporting hazards, all of which were rated highly. Following regulations was also rated at a high level.

Objective 2	**Research Findings**

Service Quality (SQ)	The direct positive influence on operator's safety perception (OSP) was found to be 0.17, which is statistically significant at the 0.05 level.
Service Quality (SQ)	The direct positive influence on safety oriented behavior (SOB) was found to be 0.19, which is statistically significant at the 0.05 level.
Guidance of Safety (GS)	The direct positive influence on operator's safety perception (OSP) was found to be 0.40, which is statistically significant at the 0.05 level.
Guidance of Safety (GS)	There is an indirect positive influence on safety oriented behavior (SOB) through operator's safety perception (OSP), with a direct influence size of 0.31, which is statistically significant at the 0.05 level.
Organizational Safety Climate (OS)	The direct positive influence on operator's safety perception (OSP) was found to be 0.40, which is statistically significant at the 0.05 level.

Organizational Safety Climate (OS)	There is an indirect positive influence on safety oriented behavior (SOB) through operator's safety perception (OSP), with an indirect influence size of 0.31, which is statistically significant at the 0.05 level.
Operator's Safety Perception (OSP)	There is a direct positive influence on safety oriented behavior (SOB), with a direct influence size of 0.78, which is statistically significant at the 0.05 level.
Service Quality (SQ), Guidance of Safety (GS), and Organizational Safety Climate (OS)	There is an indirect positive influence on safety oriented behavior (SOB) through operator's safety perception (OSP), with indirect influence sizes of 0.13, 0.31, and 0.31, respectively, all of which are statistically significant at the 0.05 level.

Objective 3: The research findings revealed that the development of the model based on confirmatory factor analysis and synthesis led the researcher to name the model of operator's safety perception affecting safety oriented behavior as the Operator's Safety Perception for Safety Oriented Behavior Model (OSPSOB Model).

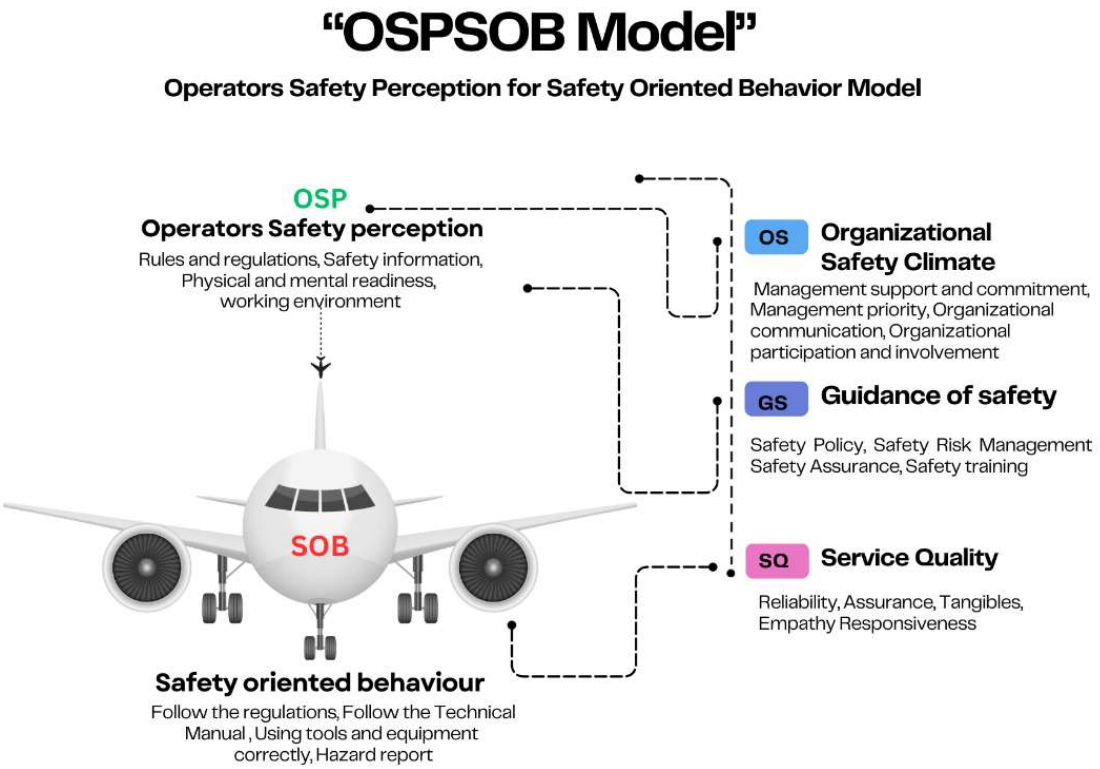

Figure 2 Operator's Safety Perception for Safety Oriented Behavior Model

7. Conclusion

The article highlights the significant role of the aviation industry in the economic development at the global, regional, and national levels. The increasing demand for air travel has led to continuous growth in the aviation sector across all regions of the world, including Thailand. However, ensuring safe and efficient operations requires that passengers and users of aviation services have a deeper understanding of the services they receive. To build trust and create standards in the industry, as well as ensure the safety of aviation operations in the country, businesses within the aviation sector must raise awareness among their employees about Guidance of Safety. This will help ensure that workers understand the importance of safety in their tasks and perform their responsibilities in a safe manner.

The researcher collected data through online surveys and in-depth interviews with air transport service providers. The analysis results concluded that guidance of safety affected operator's safety perception, guidance of safety affected safety oriented behavior through operator's safety perception, guidance of safety affect operator's safety perception, guidance of safety affected safety oriented behavior through operator's safety perception, organizational safety climate affected on operator's safety perception, organizational safety climate affected safety oriented behavior through operator's safety perception, and operator's safety perception affected safety oriented behavior. An air transport service provider can adopt an approach or research framework to develop the safety competencies of its employees, ensuring that they are aware of and follow operational practices that promote safety for both the organization and its service users in the correct manner.

8. Discussion

The results from Objectives 1 and 2 indicate that:

- Service quality and operator's safety perception: service quality significantly affects operator's safety perception at the 0.01 statistical significance level. When employees perceive the service system as reliable and dependable, it enhances their confidence in workplace safety. Additionally, when employees see that the company is committed to maintaining safety and prioritizes a well-managed work environment (e.g., clean workplaces, standardized equipment), it fosters a sense of care and personal attention, which in turn increases their confidence in safety and encourages safer work behaviors. This finding aligns with Zeithaml et al. (1996).
- Service quality and safety oriented behavior through operator's safety perception: service quality also impacts Safety oriented behaviors through Operator's safety perception at a statistical significance of 0.01. High service quality indicates good operational standards, which boosts employees' confidence that they are working in a safe environment supported by the organization. A strong perception of reliability and safety encourages workers to adhere strictly to safety regulations, reducing accident risks and improving work efficiency, as supported by Lytle and Timmerman (2006).
- Guidance of safety and operator's safety perception: clear and comprehensive Guidance of Safety significantly affect Operator's safety perception at a 0.05 statistical significance level. Effective communication of safety policies and efficient risk management contribute to employees' confidence that the organization is focused on risk reduction and accident prevention. Regular, thorough training enhances employees' skills and confidence in working safely, resulting in a positive attitude toward safety measures and strict adherence to safety protocols. This aligns with Zohar (1980).
- Guidance of safety and safety oriented behavior through operator's safety perception: guidance of Safety play an important role in promoting Safety oriented behaviors through Operator's safety perception at a 0.01 statistical significance level. Clear communication of safety policies and effective training programs help employees develop the knowledge and confidence needed to perform safely. Adherence to safety regulations reduces accident risks and fosters Safety oriented behaviors in all work activities, in line with Neal and Griffin (2006).
- Organizational safety climate and operator's safety perception: The organizational safety climate significantly impacts Operator's safety perception at the 0.01 statistical significance level. A strong safety climate reflects the organization's commitment to promoting and managing safety. When employees perceive strong support for safety from management and colleagues, it enhances their confidence in safety measures and influences their Safety oriented behavior. This finding is consistent with Kines et al. (2010).
- Organizational safety climate and safety oriented behavior through operator's safety perception: A positive safety climate in the organization also enhances safety oriented behavior through Operator's safety perception at a 0.01 statistical significance level. Support from management and involvement in safety-related decision-making help employees feel confident in the safety measures implemented by the organization. This sense of involvement and organizational commitment leads to more active participation in maintaining a safe

work environment, reducing accident risks, and promoting safety behaviors. This finding is consistent with Zohar and Luria (2005).

- Operator's safety perception and safety oriented behavior: operator's safety perception significantly influences their safety oriented behavior at a 0.01 statistical significance level. Workers who perceive a high level of safety are more likely to strictly follow safety standards and procedures, reducing accidents and improving work efficiency. This positive Operator's safety perception encourages employees to report hazards and adhere to safety procedures, contributing to the creation of a safety culture within the organization. This aligns with Christian et al. (2009).

The findings also lead to the development of a causal model illustrating the relationships between Operator's safety perception and Safety oriented behaviors among aviation workers. This model can be further applied to improve Guidance of Safety and work environments in the aviation industry.

9. Research Contribution

The research findings offer academic insights into the causal factors affecting the perception of safety among aviation workers, which in turn influences safety oriented behaviors in air transport services. The results help to better understand the relationships and impacts of various factors related to workers' Operator's safety perception and Safety oriented behavior. These findings can be used to further develop and expand academic studies in this area, as well as to apply these insights to other academic fields in the future.

10. Recommendation

In future research, it would be valuable to further test the causal model of operator's safety perception and safety oriented behavior to examine its alignment with empirical data. Additionally, future studies should explore other important factors that may contribute to workers' operator's safety perception and behavior, as there are still many variables not yet studied. For example, factors such as organizational culture, quality of work life, and organizational commitment could also influence operator's safety perception and behavior in ways not yet deeply explored. Moreover, analyzing data at regional or national levels could offer more comprehensive insights. This could involve studying a variety of aviation organizations and comparing data from different countries, which would help to understand cultural differences, safety management practices, and other factors that might affect workers' operator's safety perception and behavior. Cross-national comparisons could provide a broader perspective and increase the accuracy of findings when applying them in diverse settings. Another interesting avenue for future research is the application of digital technologies to enhance safety. Investigating the use of real-time safety tracking systems, online learning platforms, and safety-monitoring equipment could improve the efficiency of safety management. These technologies might help reduce costs and speed up the implementation of safety protocols, contributing to more effective safety practices and better overall management of aviation workforce safety.

References

- Ali, F., Ryan, K., & Hussain, K. (2016). Creative tourists' experiences, memories, satisfaction, and behavioral intentions. *Journal of Travel & Tourism*, 33.
- Ansah, E. W. (2015). Relationship between safety measures of oil marketing companies and safety practices of fuel service station attendants in Sekondi-Takoradi Metropolis.
- Brown, B. K., Subramaniam, C., & Ali, H. (2017). Inclusive leadership, safety climate, and safety behavior: A proposed framework. *HRMARS*, 7(2).
- Bugayko, D., & Dmytro. (2019). Analysis of the aviation safety management system by fractal and statistical tools. *Transport*, 44(4), 41-60.
- Chang, C. H., & Thai, V. V. (2016). Do port security quality and service quality influence customer satisfaction and loyalty? *Routledge*.
- Chi, C.-F., Lin, Y.-C., & Yi, C.-H. (2022). The development of a safety management system (SMS) framework based on root cause analysis of disabling accidents. *International Journal of Industrial Ergonomics*, 92.
- Civil Aviation Authority of Thailand. (2018). *Development plan for U-Tapao as an aviation hub*. Civil Aviation Authority of Thailand. Retrieved from https://www.caat.or.th/th
- Civil Aviation Authority of Thailand. (2023). *Air transport statistics for Q4 of 2023: Passenger numbers in Thailand*. Civil Aviation Authority of Thailand. Retrieved from https://www.caat.or.th

- Kesjamrat, S. (2021). *Aeroflot Flight crash*. Beartai. Retrieved from https://www.beartai.com/buzz/viral/866185
- Kumar, A., & Nayna, N. (2017). Service quality management: A conceptual framework for front office departments in hotel industry. *MAIMS Journal of Management*, 46.
- Lynn, D. G. (2019). The power of structure: The strategic safety plan. *Professional Safety*, 64(3), 51-54.
- Ministry of Tourism and Sports. (2023). *Tourism statistics for the first quarter of 2023*. Ministry of Tourism and Sports, Thailand. Retrieved from https://www.mots.go.th
- Stiehl, E., & Forst, L. (2018). Safety climate among nontraditional workers in construction: Arguing for a focus on construed external safety image. *Scientific Solutions*, 28(1), 33-56.
- Stiehl, E., & Forst, L. (2021). Safety climate among nontraditional workers in construction: Arguing for a focus on construed external safety image. *Scientific Solutions*, 28, 33-54.
- Tavisin, S. (2024, March 1). *Aviation Hub: Regional transport hub development plan*. Civil Aviation Authority of Thailand. Retrieved from https://www.caat.or.th/th
- Teemteebrat, S. (2007). *Basic aviation safety*. Tip Wisut Company.
- Thianukool, K. (2023). *Pushing the aviation industry in EEC to create an ecosystem connecting 10 businesses*. Prachachat. Retrieved from https://www.prachachat.net/economy/news-1370476
- Uçanok Tan, B. (2023). Effects of materialist values and work centrality on organizational citizenship behaviors. *SAGE Open*, 13(4).
- Vieira Neto, A. S., Marra Neto, A., Oliveira, P. S. P., Saxena, R. N., Carvalho, R. N., Frajndlich, R., & Paiva, R. P. (2007). Experience of IPEN-CNEN/SP in the execution of the first phase of safety culture enhancement.
- Zohar, D. (2013). Safety climate: Conceptualization, measurement, and improvement. *OUP Uncorrected Proof – First Proofs*.