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## Relationship Between Workplace Isolation, Age and Turnover Intention amongst Malaysian Seafarers



**Abstract:** - The study was carried out for the Malaysian Seafarers those having intention to quit their current career as a seafarer by discovering the relationships between the Workplace Isolation (WI) with the Turnover Intentions (TOI) concept and further to examine the moderation effect of age category over the correlation that showed significant relationships. Three sub workplace isolation elements are also tested (Social Isolation, Physical Isolation, and Informational Isolations) were assessed using the dimensional Impacts of Workplace Isolations. The P – E Fit Theory is then applied. All the measurements were collected from a sample of 400 registered Malaysian seafarers. There is a growing concern about shortage of Seafarers, particularly in Malaysia. This dissertation intends to clarify that being and feeling isolated is the main reason for these Seafarers to leave the seafaring career. This study also examines the seafarers age category as the moderating effects between the Workplace Isolation towards turnover intention among the seafarers in Malaysia. Moderation is divided in two distinct subgroups of ages. This study will help employers or the shipping companies in Malaysia to find solutions to this problem faced by the Seafarers by recommending certain measurers to counteract against turnover intention of the Seafarers.

**Keywords:** Informational Isolation, Physical Isolation, Seafarers, Social Isolations, Turnover Intention

### INTRODUCTION

The seafaring profession is experiencing rapid growth, particularly in Malaysia, a country with a rich history in merchant sailing. However, many individuals, especially Malaysian seafarers, lack sufficient awareness about the seafaring career and its associated benefits. Despite the efforts made by local maritime companies, there remains a gap in understanding. This research aims to examine the factors influencing seafarers' intentions to leave the shipping industry, focusing on social isolation, physical isolation, and information isolation as age-related factors.

Seafarers often spend extended periods at sea with limited interaction with their families and in confined environments, exposed to engine room conditions like noise, vibration, and heat (Sampson, 2013). This challenging scenario contributes to the industry's high turnover rate due to the considerable distance between their homes and workplaces. To maintain a skilled Malaysian workforce and ensure local crewing of Malaysian ships, it is imperative to enhance efforts in retaining seafarers.

The changing landscape of work locations has evolved over the years, with an increasing number of employees working remotely or in non-traditional office settings (Cooper & Kurland, 2002a). The topic of turnover or turnover intentions has been extensively studied in organizational behavior (Price, 2001), and analyzing turnover intent is considered valuable in predicting and comprehending real-world outcomes (Schyns, 2007).

The shortage of qualified Malaysian seafarers has persisted for years, posing a challenge to Malaysia's flourishing shipping industry (Osnin, 2004). Despite recruiting and training efforts in Malaysia (Khalid et al., 2010), there is still an insufficient number of seafarers to adequately crew all Malaysian vessels. This has led companies to continue relying on expatriate seafarers for their Malaysian ships.

### OBJECTIVES

The aim of this study is to analyze how workplace isolation influences turnover intentions among Malaysian seafarers, specifically considering the moderating effect of age in the context of their relationship with their employers. Additionally, the study aims to provide an analysis of the alignment between the needs of individual seafarers and the capabilities of ship-owners to cater to those needs. This analysis aims to create strategies that discourage Malaysian seafarers from seeking alternative employment opportunities.

1. Assess the extent to which workplace isolation impacts turnover intentions among Malaysian seafarers.
2. Examine the influence of each dimension of workplace isolation—social isolation, physical isolation, and informational isolation—on turnover intentions among Malaysian seafarers.
3. Explore the moderating role of age in the relationship between workplace isolation and turnover intentions among Malaysian seafarers.
4. Investigate how age acts as a moderator between each dimension of workplace isolation (social, physical, informational) and turnover intentions among Malaysian seafarers.

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## RESEARCH QUESTIONS

The research questions relating to this study are:

1. What is the impact of workplace Isolation and the dimensions on the Turnover Intentions amongst the Seafarers?
2. How does the age factor of local seafarers influence the relationship between workplace isolation (including its dimensions) and the likelihood of turnover intentions?

## RESEARCH HYPOTHESIS

The researcher verified the hypotheses by aligning them with the research objectives, the findings from documentation exploration, and the research framework. In accordance with the conceptual model, the following hypotheses (H) were formulated for the study:

H1 : There is a substantial correlation between workplace isolation and turnover intentions.

H1a : Social isolation displays a substantial correlation with turnover intentions.

H1b : Physical isolation demonstrates a significant correlation with turnover intentions.

H1c : Informational isolation exhibits a significant correlation with turnover intentions.

Previous research has highlighted the significance of age as a vital demographic factor that both directly influences and moderates behavioral intent. (Chung, Park, Wang, Fulk, and McLaughlin 2010). In this context, the inclusion of age as a moderating variable has been suggested to enhance the explanatory capacity of turnover intentions (Venkatesh, Morris, Davis & Davis, 2003). Age has been identified as a pivotal moderator in their model. Their findings indicate that the relationship between TOI expectancy and WPI is more pronounced among younger employees. Conversely, older individuals are influenced to a greater extent by their determination to prolong their tenure in the work environment. Consequently, the hypothesis posits that the interplay of age on the WPI-TOI relationship is moderated as follows:

H2 : Age group moderates WPI – TOI relationship in a way that it is stronger for younger local seafarers.

H2a : Age group moderates SI – TOI relationship in a way that it is stronger for younger local seafarers.

H2b : Age group moderates PI – TOI relationship in a way that it is stronger for younger local seafarers.

H2c : Age group moderates II – TOI relationship in a way that it is stronger for younger local seafarers.

## SCOPE OF STUDY

The overarching goal of this study is to establish a foundational framework that will serve as a basis for subsequent comprehensive investigations. The insights, findings, and resolutions derived from this research hold considerable value for the maritime industry. This study is primarily centered on Malaysian seafarers, encompassing both those currently employed and those formerly affiliated with Malaysia's maritime sector. This scope includes retired Malaysian seafarers who have transitioned away from active seafaring roles within Malaysia's leading shipping enterprises, yet remain connected to the industry in various capacities, including shoreside employment. By examining these two distinct groups—current and former seafarers—the study aims to provide the Malaysian maritime industry with tangible examples of retaining experienced and highly trained seafarers aboard their vessels. The focal objective is to understand and address the factors that contribute to the sustained presence of skilled seafarers in the industry, thereby mitigating their inclination to exit the profession.

## LITERATURE REVIEW

A seafarer refers to an individual who pursues a profession at sea, engaging in work aboard ships or vessels engaged in continuous navigation between different destinations. This profession encompasses three essential departments, namely the navigation team, the engineering team, and the catering team. The navigation team comprises officers who are assisted by deckhands, collectively responsible for the vessel's navigation. The engineering team consists of engineers supported by engine crew members, overseeing the vessel's mechanical aspects. In the catering department, there is a chief cook and a steward under the supervision of an administrative officer, ensuring the provisioning and management of onboard sustenance and facilities.

### A. Turnover Intention

Turnover intention pertains to an employee's contemplation or intention to voluntarily leave an organization, as articulated by Lambert et al. (2011). Research has illuminated notable correlations between turnover intention and various demographic factors such as gender, age, marital status, presence of dependent children, educational attainment, organizational tenure, hierarchical position within the organization, and salary (Mohammed J Almalki, 2012).

### B. Workplace Isolation

Viewed from diverse angles, employees experiencing isolation often perceive themselves as being separated by distance, resulting in limited chances for advancing in their jobs and developing their careers (Arora, 2012). At present, several leaders collaborate alongside colleagues situated across varying continents, countries, cities, and

even distinct physical locations. These team members might converse in different languages, operate within disparate time zones, and additionally, encompass diverse cultural affiliations.

**C. Social Isolation**

In a conventional office setting, employees tend to cherish social interactions, cultivating relationships within the organization and engaging in knowledge-sharing, often establishing mentor-mentee dynamics among colleagues (Arora, 2012). However, such dynamics are less prevalent in isolated work environments. Societal isolation can manifest in various forms, ranging from intentional detachment from societal connections for various reasons to instances where isolation is imposed involuntarily on fellow employees within the same setting. The choice of isolation, whether private or deliberate, can exacerbate negative human behaviors. Unmanaged isolation resulting from the cessation of social interactions is unfortunately observable. Some individuals experience psychological challenges and may remain unaware of their unintended solitude (Biordi & Nicholson, 2006).

**D. Physical Isolation**

Physical isolation refers to situations where an individual is physically solitary and detached from others, either during work or during periods of leisure in various contexts. This form of isolation pertains to instances where workers find themselves secluded from their loved ones, whether it be while they are on duty or during their off-duty moments, especially relevant for employees living apart from their families (Ahmadi, Helms, & Ross, 2000). The ramifications of physical isolation on seafarers encompass not only its impact on their psychological well-being but also its contribution to maritime incidents and the broader challenge of retaining seafarers within the industry. While the absence of family and friends can instill feelings of loneliness among seafarers, this type of isolation is not their sole experience of detachment.

**E. Informational Isolation**

While the physical separation from family and friends can induce feelings of isolation among seafarers, it's important to note that this isn't the sole facet of isolation they might experience. Another source of isolation stems from the very technology intended to alleviate this sense of detachment. Paradoxically, if seafarers are unable to access information through modern communication systems, the challenges of isolation can intensify while at sea (Arora, 2012). Even with the availability of mobile devices, using social media, email, news, communication tools, gaming, or watching videos from people on land, it can be challenging to counteract the sense of isolation while aboard a vessel.

**F. Age**

This research classifies seafarers into two age groups: younger seafarers aged 20 to 40 and older seafarers aged 41 to 60, following the categorization utilized by Yapa et al. (2014). Age is quantified in years at the time of the survey in this study. Previous research has underscored the significance of comprehending how individual attributes, like age, influence turnover intentions. This comprehension can facilitate ship owners or decision-makers in devising more efficacious strategies that cater to the distinct age dynamics among Malaysian seafarers (Morris J. & D.C., 1997).

**G. Workplace Isolation and Age Factor**

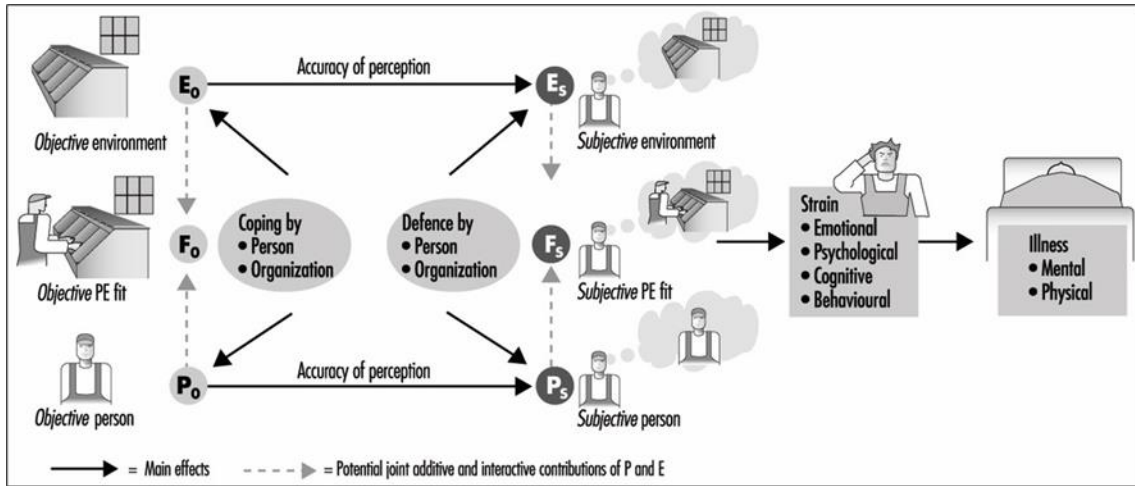
The connection between workplace isolation and turnover intention is influenced by age, with the connection being less pronounced among older workers compared to their younger counterparts. The study's results revealed that the interplay between job isolation and turnover intention was indeed moderated by age in an anticipated manner. Among younger personnel, the association is more robust compared to their older counterparts. Generational disparities can contribute to sensations of isolation within the work environment. In workplaces characterized by a broad range of age groups, individuals may encounter scenarios where they feel disconnected and inadequately informed, resulting in a sense of loneliness (Bal et al., 2008).

**H. Age Factor and Turnover Intentions**

Age has been recognized as a variable influencing intention, with a discernible inverse connection between age and turnover intention (Carbery & Garavan, 2003). Additionally, age has been pinpointed as a predictor of turnover intention, displaying a negative correlation wherein a greater age is associated with a lower inclination to consider turnover (Karatepe et al., 2006).

**I. Under Pinning Theory**

The theoretical framework underpinning this study is the Person-Environment (P-E) Fit Theory, which posits that the congruence between an individual and their work environment results in positive outcomes, while incongruence leads to negative consequences (Schneider et al., 2000). The theoretical model illustrated by French and colleagues in Figure 1 serves as the basis for addressing the conceptual aspects of the PE fit theory within this research and its application, along with the associated outcomes (Karanges et al., 2014).



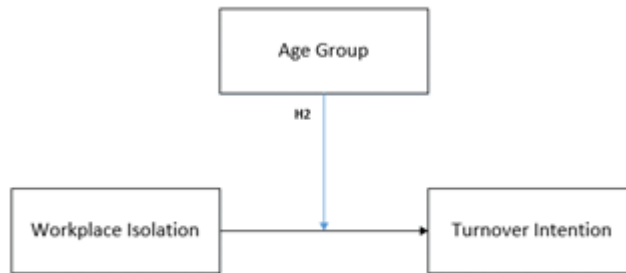
**Figure 1 Schematic of French, Rogers & Cobb's theory of (PE) fit**

Source: French, Rogers and Cobb 1974; figure adapted from Harrison 1978

P-E fit is considered a predictor of turnover intentions (Vogel, R. M., & Feldman, 2009). Additionally, it has been established that P-E Fit plays a pivotal role in influencing employee turnover expectations, with significant ramifications (Ahmad, 2012).

**J. Conceptual Framework**

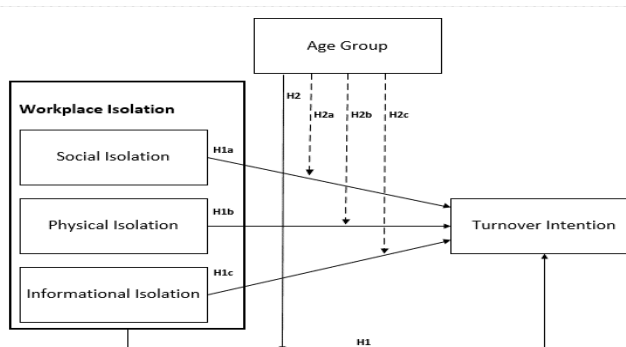
The connection, as depicted in Figure 2, delineates how age groups act as moderators, impacting the relationship between workplace isolation and turnover intentions within the context of Malaysian seafarers.



**Figure 2 Relationship with the Moderator in the Model**

Source: Developed for this study

The comprehensive conceptual model outlined in Figure 3 visually portrays the intricate interplay between age groups and their moderating influence on turnover intentions among seafarers, encompassing all three constituent aspects—namely, social isolation, physical isolation, and informational isolation.



**Figure 3 Overall research model**

Source: Developed for this study

## METHODOLOGY

### A. Population

The research sample is drawn from presently employed seafarers who have renewed their seaman cards through the Marine Department in Malaysia. These seafarers represent a diverse spectrum of ranks, spanning from the highest to the lowest positions within the crew. The selection is based on their specialized expertise in the relevant domains, rendering their inclusion unanimous. The researcher subsequently employs investigative methods to conduct an empirical analysis. The chosen population for this study consists of currently active seafarers who are engaged with any of the shipping companies registered in Malaysia.

### B. Malaysia Seafarers with Certificate of competency

From an alternative standpoint, Table 1 illustrates from 2018 to 2023, a cumulative count of 21,158 seafarers within the deck and engine departments successfully applied for and passed their oral Certificate of Competency. Of this total, 15,742 individuals were from the deck department, while the engine department accounted for 5,416 registered seafarers. It's important to note that these figures exhibit a consistent downward trend each year. Despite this assessment, the numbers remain relatively modest when considered collectively. Additionally, it's noteworthy that seafarers are mandated to renew their Certificate of Competency every five years.

**Table 1 Seafarers Certificate of Competency Application Issued 2023**

<i>Tahun Year</i>	<i>Dek / Deck</i>	<i>Injin / Engine</i>	<i>Total</i>
2022	5515	1717	7232
2021	3155	1741	4896
2020	2313	809	3122
2019	2304	548	2852
2018	2455	601	3056
<b>Total</b>	<b>15742</b>	<b>5416</b>	<b>21158</b>

*Source : (MOT, 2023)*

### C. Sampling

This study is focused on Seafarers in Malaysia who have registered or renewed their licenses with the Marine Department of Malaysia. The study encompasses both officers from the deck and engine departments, which include both senior and junior officers. The research specifically targets officers with more than 365 days (or a year) of sea experience who are currently engaged in active sailing. The study excludes cadets and those undergoing the Rating Course. To establish the present profile of seafarers serving on Malaysian vessels, a survey questionnaire was distributed to over 200 Malaysian shipping companies. These companies were selected based on references such as the Malaysian Maritime Directory, the roster of members belonging to the Malaysian Association of Shipowners (MASA), and the listing of correspondence from the Malaysian Institute of Maritime Affairs (MIMA). Out of the total active seafarer population of 26,685, the researcher opted to select a sample size of 382 based on established guidelines (Krejcie & Morgan, 1970).

### D. Instrument

The questionnaire survey is employed to gather crucial data, organized into four primary sections:

- Section A primarily delves into seafarers' sentiments toward their friends and family (Russell, 1996).
- Section B addresses seafarers' intentions related to turnover (Roodt, 2004).
- Section C pertains to demographic information.
- Section D focuses on seafarers' work experiences.

The questionnaire consists of 25 questions designed for active seafarers and retired seafarers across various ranks. Several established measurement instruments have been integrated into this study, possessing established reliability and validity. However, only concise references are made to the original authors' reported Cronbach alpha reliability, which is included in this study.

**Table 2 Original Measures of Constructs**

No.	Construct	Item Quantity	Scale	Measuring Instruments
1.	Workplace Isolation	13	10 pt. Likert	Adapted from University of California Los Angeles (UCLA) (D. Russell, 1996)
2.	Turnover Intention	3	5 pt. Likert	Adapted from Turnover Intention Survey (TIS) (Roodt, 2004)

The Likert scale employed spans a range from 1 to 7, where 1 signifies 'Entirely Disagree' and 7 signifies 'Entirely Agree.' The proposed design for the Likert scale is depicted in Table 2. It has been identified that utilizing a 7-point scale yields stronger correlations with t-test outcomes (Lewis, 1993).

#### **E. Data Analysis**

SPSS (V22) is employed to analyze the impact of each variable within the model. To examine moderating effects, the SPSS process macro is utilized to assess the relationship between constructs individually across multiple groups. Statistical software platforms like SPSS provide a versatile and comprehensive statistical framework, encompassing multivariate techniques such as factor analysis, regression analysis, and discrimination analysis. Furthermore, SPSS facilitates the visualization of effects through graphical diagrams (J.J. Hox & T.M. Bechger, 1999).

#### **F. Results and Discussion**

Of the 800, only 410 replies were received. 13 questionnaires had missing values, so the final sample size was only 397.

#### **G. Descriptive Analysis**

Table 3 provides an overview of the respondents' demographic characteristics. Most participants in this study fall within the age range of 20 to 40 years, constituting 220 respondents (54.4%). Subsequently, respondents aged between 41 to 60 years account for 177 individuals, making up 45.6% of the total study participants.

**Table 3 demographic profile of the respondents**

Variable	Category	Frequency, N	Percentage
Gender	Male	387	97.5%
	Female	10	2.5%
	Total	397	100.00%
Age	20 – 40 (Young)	220	55.4%
	41 – 60 (Old)	177	45.6%
	Total	397	100.00%
Marital Status	Married	256	64.5%
	Single	136	34.3%
	Divorced/widow	5	1.3%
	Total	397	100.00%
Sailing Experience	6 months – 1 year	7	1.8%
	1 year – 3 Years	56	14.1%
	3 years – 5 years	167	42.1%
	5 years and more	167	42.1%
	Total	397	100.00%

#### **H. Reliability Test**

The Cronbach alpha coefficient serves as a reliability indicator test. For all constructs or variables, the Cronbach alpha value is expected to exceed 0.6. Ideally, the Cronbach alpha should surpass 0.7, yet considering the study's focus on human intent, an agreement can be reached that a Cronbach alpha coefficient greater than 0.6 is acceptable. Therefore, for this study, a Cronbach's alpha of 0.6 is set as the threshold. Following the elimination

of items during the pilot study, it can be deduced that all items in this study are dependable and consistent (Rex B. Kline, 2005). The reliability test results are succinctly summarized in Table 4.

**Table 4 Summary of the Cronbach’s Alpha of Each Scale**

Variable	Cronbach’s Alpha	No. of Item
SI Social Isolation	0.864	3
PI Physical Isolation	0.899	6
II Informational Isolation	0.857	4
TOI Turn over Intention	0.816	3

**I. Correlation Analysis**

One of the commonly employed reference frameworks, adhered to in this study, is referred to as "Cohen's table of effect size magnitudes" (Cohen, 1988). These guidelines establish effect size magnitudes using absolute coefficient values, regardless of the direction of their polarity. An overview matrix illustrating the correlations among these variables is presented in Table 5.

**Table 5 Pearson’s Product – Moment of Correlation Matrix**

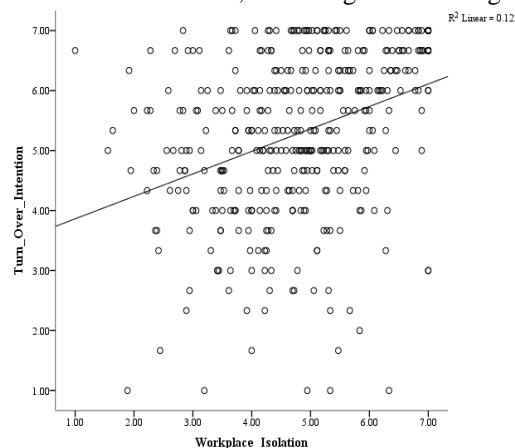
	WPI	SI	PI	II	TOI
WPI	1				
SI	.879**	1			
PI	.913**	.683**	1		
II	.879**	.618**	.767**	1	
TOI	.351**	.269**	.375**	.298**	1

*N* = 397, *WPI* = Workplace Isolation, *SI* = Social Isolation, *PI* = Physical Isolation, *II* = Informational Isolation, *TOI* = Turnover Intention

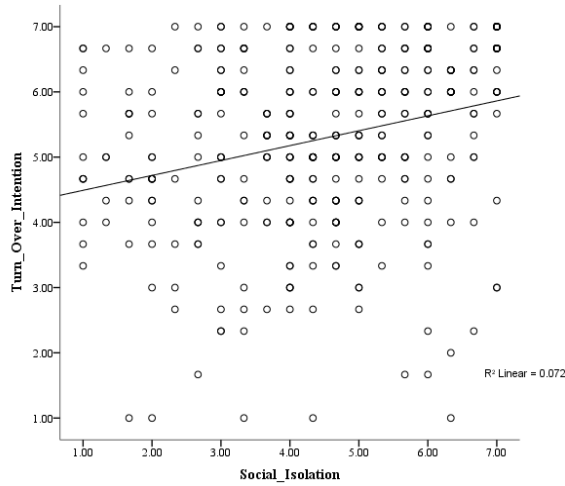
\*\**. Correlation is significant at the 0.01 level (2-tailed).*

**J. Research Question 1**

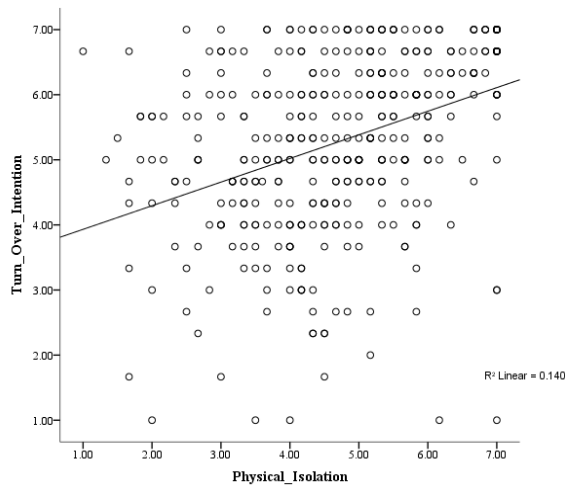
The initial research question and its corresponding hypotheses seek to establish the presence of a link between workplace isolation, its dimensions, and turnover intentions. The results indicate that workplace isolation effectively predicts turnover intention, thereby supporting H1 in figure 4. In terms of specific dimensions, social isolation demonstrates a moderate-strength relationship with turnover intention, thus affirming H1a in figure 5. Similarly, physical isolation also displays a moderate-strength relationship with turnover intention, substantiating H1b in figure 6. Furthermore, the findings reveal that informational isolation maintains a moderate-strength relationship with turnover intention, endorsing H1c as in figure 7.



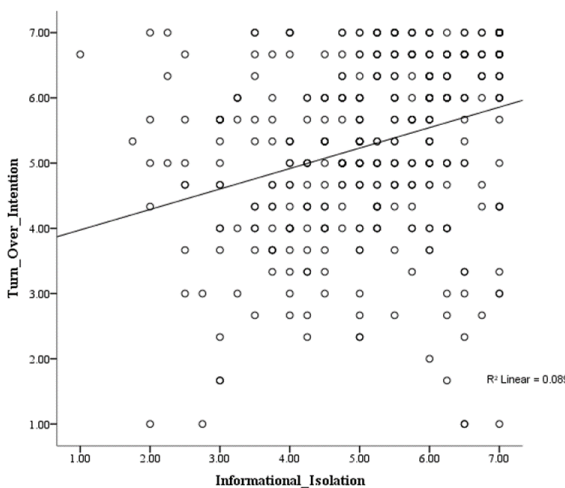
**Figure 4 Scatter Plot Predicting Workplace Isolation with Turnover Intention**



**Figure 5 Scatter Plot Predicting Social Isolation with Turnover Intention**



**Figure 6 Scatter Plot Predicting Physical Isolation with Turnover Intention**



**Figure 7 Scatter Plot Predicting Informational Isolation with Turnover Intention**

**K. Research Question 2**

The second hypothesis of this study examines how the age factor of local seafarers interacts with workplace isolation to influence turnover intentions. To test this hypothesis, a statistical procedure called "Process" in SPSS is employed to assess the relationship (F. Hayes, 2018). The graph depicted in Figure 8 clearly illustrates that the correlation between turnover intention and workplace isolation is more explicit among younger



seafarers in comparison to their older colleagues. This outcome provides support for H2. Furthermore, a closer examination of the graphs reveals that consistent with the hypothesis, the impact of social isolation on turnover intention becomes more potent with decreasing age, as evidenced by Figure 9, thus endorsing H2a. Likewise, Figure 10 highlights that younger age strengthens the influence of physical isolation on turnover intention, substantiating H2b. Additionally, as portrayed in Figure 11, the correlation between informational isolation and turnover intention becomes more robust as age decreases, thereby providing support for H2c.

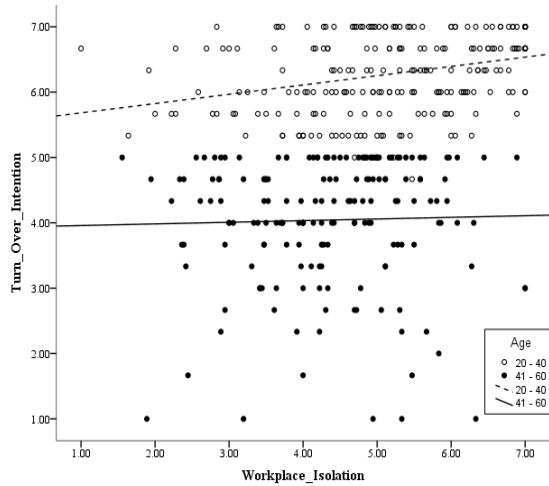


Figure 8 Moderating effect of age on the relation between WPI and TOI

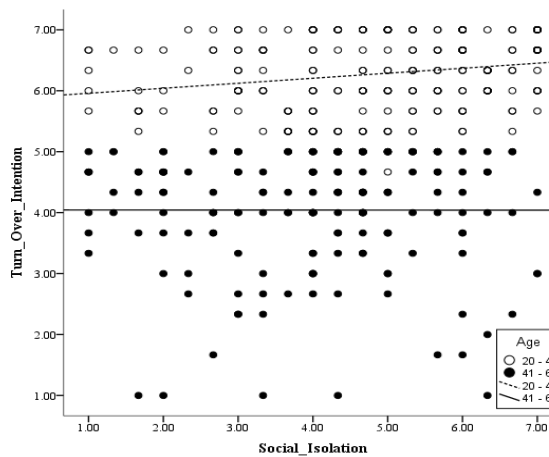


Figure 9 Moderating effect of age on the relation between SI and TOI

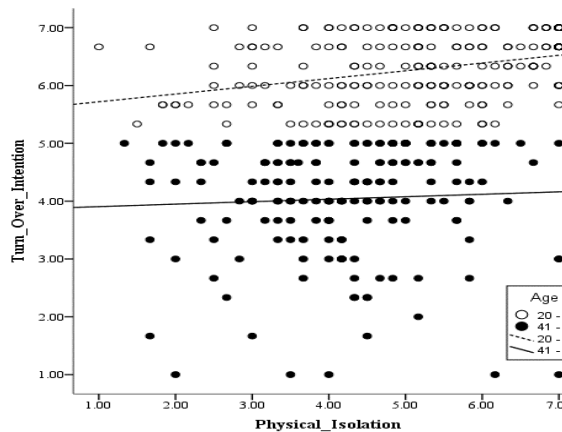
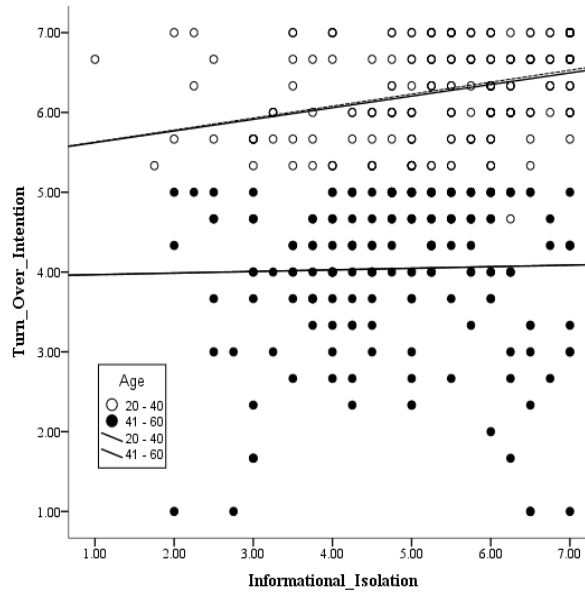


Figure 10 Moderating effect of age on the relation between PI and TOI



**Figure 11 Moderating effect of age on the relation between II and TOI**

**CONCLUSION**

Seafarers lead a dual social life stemming from two distinct spheres. The first realm encompasses life onboard a ship, where seafarers spend considerable periods—sometimes months or even years—engaged in work within a distinctive environment. This environment is marked by demanding work conditions exacerbated by harsh weather conditions. Moreover, familial relationships and living conditions differ when compared to life at home. The demarcation between work at sea and time spent ashore is often not as distinct as it is on land.

The second facet pertains to the periods when seafarers are at home. This phase should ideally be a time for them to enjoy their family life, engage in informative interactions, participate in family activities, and unwind before returning to sea. However, the reality often diverges from this ideal, with seafarers frequently experiencing various stressors in their familial circumstances. Notably, statistically significant correlations (Doğan T, Çetin B, 2009) were established between workplace isolation and turnover intention, at a significance level of  $p < .0005$ , which is below the conventional threshold of 0.05. This p-value signifies statistical significance, lending strong support to the hypothesis. Thus, it can be concluded that workplace isolation positively predicts turnover intention.

Moreover, the moderation effect of age groups was explored, revealing a strong correlation ( $r=0.8266, p<0.01$ ) between workplace isolation and turnover intentions. This underscores that the link between turnover intention and workplace isolation is more pronounced among younger seafarers when compared to their older counterparts.

Despite these findings, it is crucial to acknowledge several critical considerations. These reflections call for prudence in drawing overarching conclusions for shipping companies and provide avenues for further research. For instance, older seafarers expressed contentment in their sea careers, possibly due to their strong land-based commitments. Additionally, to better comprehend the moderating influence of age on the correlation between isolation and turnover intention, other factors such as marital status, having children, or positive life events should be considered. In total, this analysis substantiates and validates the formulated assumptions. The overview of supported hypotheses is presented in Table 6.

**Table 6 Summary of “Status of Hypothesis**

<b>Hypothesis</b>	<b>Status</b>
Workplace Isolation has significant relationship with Turnover Intentions	Supported
Social Isolation has significant relationship with Turnover Intentions.	supported
Physical Isolation has significant relationship with Turnover Intentions.	Supported
Informational Isolation has significant relationship with Turnover Intentions.	Supported

Age group moderates the relationship between Workplace Isolation with Turnover Intention of local Seafarers.	Supported
Age group moderates the relationship between Social Isolation with Turnover Intention of local Seafarers.	Supported
Age group moderates the relationship between Physical Isolation with Turnover Intention of local Seafarers.	Supported
Age group moderates the relationship between Informational Isolation with Turnover Intention of local Seafarers.	Supported

Nonetheless, it's important to note that this study's scope is limited to merchant seafarers and excludes other non-merchant seafarers. The sample size is relatively small and confined to specific Malaysian limited companies. However, the total count of registered seafarers does not exclusively indicate merchant seafarers in Malaysia.

This study underscores that the perceived Person-Environment Fit significantly influences turnover intentions among Malaysian seafarers. Workplace isolation, encompassing social, physical, and informational aspects, exhibits a substantial relationship with turnover intention. Furthermore, distinct age groups of seafarers significantly impact their intent to leave their careers. In other words, younger seafarers tend to consider leaving their careers earlier compared to their senior counterparts

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