

## The Interplay of Stress, Psychological Capital and Turnover Intentions in Indian Merchant Navy Officers

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### Abstract

Seafaring is undeniably a tough profession. Seafarer's onboard work under extremely stressful conditions that result into high turnover intentions among them and given the current and predicted future shortage of Ship Officers world-wide. The present study aimed to identify the association between stress, psychological capital (PsyCap) & turnover intentions in the context of Indian Merchant Navy Officers. A descriptive research design was used for the present study, which is cross-sectional and quantitative in nature. To realize the objective, the data was gathered using Google forms from a sample of 395 Indian ship Officers, working on Indian/Foreign flag merchant vessels and enrolled under various short term post sea courses conducted by DGS approved maritime training institutes in India. Perceived stress scale (PSS10) developed by Cohen, Kamarch and Mermelstein (1983), Psychological capital questionnaire (PCQ12) developed by Luthans *et al.*; (2007) and Turnover Intention Scale that is developed by Neilson (2013) were used to assess the Stress, PsyCap and Turnover Intentions of respondents. For the data analysis SPSS and SEM (Path Modeling) were used. The findings of data analysis stated that relationship between stress and turnover intentions is not moderated by Psychological Capital; also the stress and PsyCap reported a significant impact on the turnover intentions of respondents.

### Key Words

Seafarers, Merchant Navy, Merchant Navy Officers, Psychological Capital, Turnover Intentions and Stress.

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## INTRODUCTION

Shipping Industry is the most globalised industry and is responsible for the carriage of 90% of world trade. At present there are 1.8 million seafarers working on approximately 74000 merchant vessels world-wide. The professionals working on the ships are known as seafarers who work 24X7 to meet the demands of the world. Stress in seafaring is inevitable, seafarers experience stress emanating from physical, social and psychological factors (Rengamani, 2012; Carotenuto, 2012). A seafarer remains away from home for months and lives a limited social life with monotonous work routines and very less recreational activities. Although, 8 hours is generally considered to be an ideal period of sleep but a sailor never gets to enjoy an uninterrupted 8 hours of sleep when onboard which leads to disturbed circadian rhythm, sleep deprivation and fatigue. In any sector, stress is one of the most important factors that disturbs the workforce. Studies have revealed that existence of high level of workplace stress negatively impacts the physical and mental health (Goetzel *et al.*, 1998). Also the job demands for seafarers onboard impacts certain psychological issues such as turnover intentions, job dissatisfaction and mental health problems like stress, depression and in extreme cases suicides (Iversen, 2012 and Mellbye and Carter, 2017). Various authors reported the existence of stress in seafarers (Oldenburg & Jensen, 2019a; Haka, Borch and Jensen, 2011; Mcveigh *et al.*, 2019; Oldenburg & Jensen, 2019b; Oldenburg and Jensen, 2019c; Xiao *et al.*, 2017) which needs to be addressed. According to one study, more than 60% of seafarers were found under stress, where deck officers were most mentally stressed and deck ratings were physically stressed (Oldenburg and Jensen, 2019b). A strong association has been found between employees stress and their intentions to leave the profession (Applebaum *et al.*, 2010). Currently the world is facing a shortage of 26240 Ship officers and it is predicted that by 2026 there would be a shortage of 89510 ship officers (BIMCO Manpower Workforce Report, 2021). The problem of shortage of ship officers is a matter of global concern. There are two known best ways to curb employee's turnover intentions: either decreasing the cause of stress or increasing the resilience to stress. It is believed that Psychological capital (PsyCap) constituting self efficacy, resilience, hope and optimism is a significant positive psychological trait that plays an important role in gaining resilience against stress and thereby

developing favorable mind-set towards one's job (Luthans *et al.*, 2008). According to the results of the study done by Jensen (2012) and Avey *et al.*, (2009) psychological capital is said to have significant & negative effect on stress and turnover-intentions of employees. As PsyCap is trainable (Luthans, Avey and Patera, 2008; Bandura, 1997; Seligman, 1998; Masten and Reed, 2002; Snyder, 2000) and various organizational sectors especially the Marine sector which is facing the shortage of Ship Officers, for more than a decade can gain much from the synergistic effects of this variable therefore researcher used Psychological Capital as a moderator in the Indian Context to analyze its impact on the variables under study which is also suggested by Celik (2018).

## **REVIEW OF LITERATURE**

### **Psychological Capital**

Psychological Capital popularly known as “PsyCap” has been identified as a positive psychological trait which is described as having the self-confidence to take and accomplish a challenging task ( Self-Efficacy); Perseverance towards one's goal and when required redirecting the path towards goal (Hope); making affirmative attributions of succeeding at present and in the future (Optimism); and when weighed with problems, bouncing back from adversities to achieve the goal (Resilience) (Luthans *et al.*, 2007). Study done by Matsui and Onglatco (1992) revealed that employees with high self efficacy experience less stress. Seligman (1998) stated that optimistic person see future as an opportunity and view adversity as a temporary setback and therefore experience less of strain and anxiety. Similarly Snyder *et al.* (1991) reported that Hope give positive support to employees in stressful situations also hope act as a protection against the feeling of vulnerability and unpredictability (Snyder, 2000). Resiliency acts as a buffering agent in promoting the well being of employees (Luthans, Smith & Palmer (2010) by combating stress (Tugade and Fredrickson, 2004) and increasing employee's job satisfaction, work performance and organizational commitment (Youssef & Luthans, 2007 and Luthans, *et al.*, 2007). “Psychological Capital” is a super construct according to Luthans, Avolio & Youssef (2007), that incorporates its four dimensions (Hope, Resilience, Self-Efficacy, Optimism popularly known as “HERO”) synergistically, which means PsyCap as a whole is greater and better than sum of its individual parts.

## Psychological Capital vs Turnover Intentions

Turnover Intention is a conscious action or decision of an employee to leave the organization in near future (Appolis, 2010 and Bhat, 2014). Turnover can be voluntary or involuntary where voluntary turnover means loss of employee by resignation. As such, the concept of voluntary turnover would apply to the present study. Since, the excessive attrition rate has led to the shortage of ship officers world-wide. Research results have shown that the employees who are high on Psycap exhibits high job satisfaction (Luthans *et al.*, 2007). For example Bergheim *et al.*, (2015) reported that higher level of job satisfaction was associated with high level of psychological capital among maritime workers. Kim & Lee (2011) stated that high job satisfaction results into lower turnover intentions among Korean Seafarers. Also Nielsen (2013) found an inverse association between the job satisfaction & intentions to leave, which indicates the negative influence of PsyCap on turnover intentions (Avey *et al.*, 2010). A study by Avey *et al.*, (2009) further confirmed the negative impact of PsyCap on employee's turnover intentions. Likewise Avey *et al.*, (2011) observed the existence of negative association between the Psychological capital and Turnover intentions through their meta analytic view. The results were further supported by the studies done by Yan *et al.* (2021) and Dhiman and Arora (2018) confirming an inverse relation between PsyCap and the Turnover Intentions. On the basis of literature reviewed the following Hypothesis was formulated :-

**H<sub>1</sub>** : There exist a negative and significant relationship between Psychological capital and Turnover intentions of Indian Merchant Navy Officers.

Since, Psycap impacts both stress & turnover intentions (Luthan & Jensen, 2002; Luthans *et al.*, 2007; Youssef & Luthans, 2007; Avey *et. al.*, 2009; Avey *et. al.*, 2010). Stress impacts Turnover intentions (intentions to quit) (Applebaum *et al.*, 2010 and Chen *et al.*, 2010) and as PsyCap moderated the positive association between stress and turnover intentions in the studies conducted by Rehman & Mubasher (2017) and Fajrin *et al.*,(2020). Therefore in the support of these findings it is hypothesized :

**H<sub>2</sub>** : Psychological Capital moderates the positive relationship between Stress and Turnover Intentions.

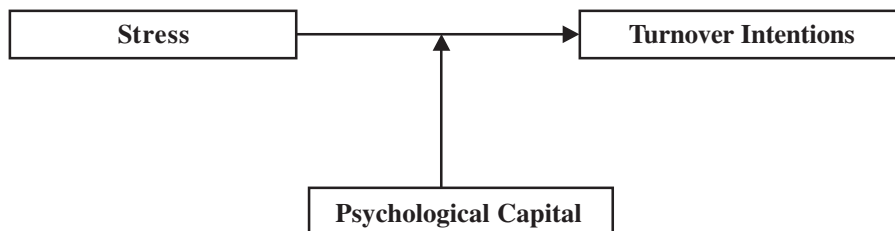
### Stress Vs. Turnover Intentions

Owing to the peculiar nature of seafaring profession, seafarers when onboard go through a variety of physical and psycho-social stressors which includes: separation from family, fatigue, less recreational activities, sleep deprivation, multinational crew and loneliness (Jepsen, Zhao and Leeuwan, 2015; Oldenburg and Jensen, 2012; Carotenuto *et al.*, 2012 and Oldenburg, Hogan & Jensen., 2013;). According to Lodde *et al.*, (2008) Seafarers experience high stress due to heavy work-load and low decision latitude. Ship Officers onboard experience more stress than non officers due to Separation from family and time pressure followed by long working hours (Oldenburg *et al.*, 2009). Among Ship officers, Deck Officers experience more of stress due to psychological strain and engine officers experienced more of stress due to harmful physical environment onboard (Rengamani and Charith, 2015). It has been seen that high stress attracts higher dissatisfaction and leads to higher intentions to quit among employees (Applebaum *et al.*, 2010 and Chen *et al.*, 2010). Fajrin *et al.*, 2020 also stated that there exists a positive and significant association between the stress and turnover intention. Similarly Studies conducted by Paille (2011) and Yinfah *et al.* (2010) also concluded that stress and turnover intentions are significantly and positively correlated. In this sense Hypotheses 3 was formulated based on the research findings.

**H<sub>3</sub>** : There exist a positive and significant relationship between stress and turnover intentions of Indian merchant navy Officers.

On the basis of review of literature stated above a model was developed which has been presented in Figure 1

**Figure 1**  
**Conceptual Model of the Research**



**Source** : Researcher's Survey

## RESEARCH METHODOLOGY

### Sampling and the Data Collection Technique

Population for the present research comprised of Indian merchant navy officers, who are presently working on Indian/Foreign Flag vessels. There are approximately 88000 Indian ship Officers world-wide. The sample size was determined based on the formula given by Yamane (1967). Using simple random sampling technique the data was collected from the 10 randomly selected maritime training institutes located across India (3 were from south, 4 from north, 2 from west and 1 from eastern zone) providing short term post sea courses to the Officers from August 2021 to March 2022. Responses of 395 officers were taken for final analysis of which 98.7% (n = 390) were male officers and 1.3% (n = 5) were female officers, 78% of respondents were below the age of 40, 64% of respondents were married. 20.5% (n = 81) were senior engine officers (Chief engineer, 2<sup>nd</sup> engineer), 23.3% (n = 92) were senior deck officers (captain, Chief Officer), 19.8% (n=78) were junior engine officers (3<sup>rd</sup> engineer, 4<sup>th</sup> engineer) and 36.5% (n = 144) were junior deck officers. The study was cross sectional and used descriptive research design.

Before initiating data collection process the permission for the same was duly obtained from the Directors/Principals of the maritime training institutes from where the data was collected also the respondent's participation to the online based survey was completely voluntary.

### Measures

**1. Psychological Capital :** The Psychological capital questionnaire (PCQ12) given by Luthans *et al.*, (2007) was employed to assess the PsyCap of the respondents. The sample items PCQ includes "I feel confident presenting information to a group of colleagues" and "I'm optimistic about what will happen to me in the future as it pertains to work". 7 point likert scale (strongly agree = 7 to strongly disagree = 1) was used to score the given items. The reliability, validity of the PsyCap scale was evaluated through Confirmatory factor analysis using AMOS software. Second order factor model of PsyCap was taken due to its good psychometric properties (CR = .70, AVE = 0.54,  $\alpha$  = 0.69).

**2. Turnover Intention :** Turnover intention scale (3 items) developed by Neilson (2013) was used to assess the turnover intentions of respondents. An example of turnover intention scale item is "I wish to move to an onshore job within next 12 months" which was measured using 7 point likert scale that ranged from strongly agree to strongly disagree. Strongly agree was scored '7' and

strongly disagree was scored '1'. The scale had previously been used by Olaniyan (2016) and Neilson (2013) and showed good internal consistency of  $\alpha > 0.70$ . For the present study the scale reported Cronbach's  $\alpha = .83$ .

**3. Stress :** The stress of respondents was assessed using Perceived Stress Scale (PSS10) developed by Cohen, Kamarch and Mermelstein (1983) and adapted in the context of merchant navy for the present study. The sample items from the scale include "During my last sail, I felt that I was unable to control the important things in my life" and "During my last sail, I felt nervous and "stressed", the stated items were measured on 7 point likert scale where Strongly agree means 7 and strongly disagree means 1. The positively phrased items of the scale were coded reversed to arrive at final score. The 10-items perceived stress scale was found reliable ( $\alpha = .78$ ) in a study conducted by Cohen and Williamson (1988). For the present study PSS-10 reported good internal consistency of Cronbach's  $\alpha = .79$ .

## RESULTS

### Measurement Model (CFA) - Results

The results of measurement model confirmed the existence of construct's reliability and its validity, as Average variance extracted was  $\geq 0.54$  and Composite Reliability was  $\geq 0.70$ . All the items of the questionnaire were found statistically significant and correlated with their underlying factors at a level above 0.69 ( $p < 0.001$ ). Diagonal values in bold ( $\sqrt{AVE}$ ) given below in Table 1 signifies the existence of discriminant validity of constructs.

**Table 1**

**Mean, Standard Deviation, Correlation Coefficients, Reliability & Validity Outputs**

Variables	M	SD	CR	AVE	$\lambda$	1	2	3
1. Stress	4.15	1.57	0.88	0.65	.69 to .92	<b>0.81</b>		
2. Turnover Intentions	3.65	1.83	0.89	0.73	.79 to .90	0.37***	<b>0.87</b>	
3. Psychological Capital	5.77	0.76	0.70	0.54	.72 to .75	-0.58***	-0.43***	<b>0.73</b>

\*\*\*  $p < 0.001a$

The model of the research (Figure 1) was tested for its goodness of fit. The value of model fit indices given below in Table 2 signified a good model fit as the final model (with second order PsyCap) presented a good fit to the data. Acceptable results of CFA allowed for the hypothesis to be tested.

**Table 2**  
**Model Fit Indices**

Fit Indices	Actual Value	Recommended Value
$\chi^2/df$	2.48	<.3
RMSEA	.05	<.08
CFI	.93	>.90
NFI	.93	>.90
TLI	.92	>.90

Source : Researcher's Survey

### Structural Equation Path Modeling - Hypothesis Testing

Data analysis was done using structural equation path modeling to check the hypothesized relationship between the constructs.

The results of analysis revealed that PsyCap ( $M = 5.77$ ,  $SD = 0.76$ ) had a negative and significant impact on turnover intentions of respondents ( $\beta = -.47$ ,  $p 0.001$ ). Hence the hypothesis  $H_1$  : There exists a negative and significant relationship between Psychological capital (PsyCap) and turnover intentions of respondents is fully supported.

The moderating role of PsyCap in the relationship of stress and turnover intention of respondents was examined using path modeling and the results revealed that Psychological Capital did not moderate the positive association found between stress & turnover intentions rather the impact of interaction term (PsyCapXStress) on Turnover intention is positive and significant ( $\beta = .021$ ,  $p0.05$ ) which means instead of acting as buffering agent PsyCap is exacerbating the impact of stress on turnover intentions. Hence, the hypothesis ( $H_2$ ) is not supported and results contradicts the findings of Rehman and Mubasher (2017) and Fajrin *et al.*(2020).

The relationship between stress ( $M = 4.15$ ,  $SD = 1.57$ ) and turnover intention ( $M = 3.65$ ,  $SD = 1.83$ ) was also examined, the result found a significant and positive ( $\beta = .13$ ,  $p0.05$ ) association between stress and turnover intentions of Indian merchant navy Officers resulting in acceptance of hypothesis  $H_3$ , which means with increase in the level of stress the turnover intentions increases.

The result of path model indicated that Psychological Capital, Stress and interaction effect of both predictor variables explained 11% of variance in turnover intentions of respondents.



## DISCUSSION

The main objective of this study was to evaluate the moderating role of PsyCap on the relationship between stress & turnover intentions. In addition, the association between stress, turnover intentions and PsyCap was also observed. The findings indicated that the majority of Indian merchant navy officers perceive themselves to be under stress and as such, the results found a positive and significant association between stress and turnover intentions which are in line with the findings of Fajrin *et al.*, (2020); Applebaum *et al.*, (2010) and Chen *et al.*, (2010) indicating that the presence of stressors onboard positively influence the turnover intentions of marine officers. The effect of PsyCap (Psychological Capital) on the turnover intentions of respondents was examined and it was found that the direct effect of PsyCap on the dependent variable (turnover intention) was significant and negative, indicating that Indian merchant navy officers high on PsyCap ( $M = 5.77$ ) exhibit less turnover intentions ( $M = 3.65$ ). The results were consistent with the findings of Dhiman and Arora (2018); Avey *et al.*, (2010) and Celik (2018). The hypothesis  $H_2$  was tested to analyze the interaction effect (Psychological capital\*Stress) on the turnover intentions of Indian marine officers and the results revealed that PsyCap did not moderate the association between stress and the turnover intention as hypothesized, rather to some extent it exacerbated the effect of stress on respondents turnover intentions. One possible reason behind such a result could be that the officers who are high on PsyCap when exposed to multiple and frequent stressors onboard tend to have strong intentions to leave the seafaring profession. As these individuals are high on PsyCap and have a very optimistic approach towards the future, in this capacity, they may perhaps believe that a more conducive environment prevailing at shore will serve them better.

## CONCLUSION

Findings indicated that the impact of stress on turnover intentions as positive and significant and implied that the stress perceived by seafarers when on board is so high that even the officers high on PsyCap do not change their intent to quit, even though the individual impact of PsyCap on turnover intentions was reported negative which brings us to a conclusion that there is an urgent need to manage and control the stressors onboard and also as PsyCap

is trainable, companies should strive to provide PsyCap training programmes to all the seafarers for the overall development of seafarers and shipping industry as a whole.

### SCOPE FOR FUTURE RESEARCH

The present study has primarily focused on junior and senior ship officers of Indian origin and the model explained only 11% of variance in turnover intentions which means there is a need to examine other factors that are directly influencing the turnover intentions of ship officers. Future researchers should use qualitative techniques in analyzing these factors and should also work with different sets of variables to help moderate the existing positive association found between the stress and turnover intentions of Indian Merchant navy Officers.

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