

# Stress Inducing Factors and Relevant Strategies Deployed to Overcome Stress in the Aviation Industry Sector – A Systematic Literature Review and Further Research Agendas

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## ABSTRACT

Mangalore International Airport serves as Karnataka's second busiest airport. As industries become busier, the role of airport personnel becomes vital. Because they play a big part in the transportation service at the airport. When the pressure exerted by work increases it negatively affects their physical and mental health. Stress in one direction or another is felt by many people. The agenda of this review article is to scrutinize the stressors and strategies employed by staff in overcoming work-related stress. This article contains an expected ideal condition, current status, and research gap. Based on the identified research gap and its qualitative analysis using the ABCD framework, a research agenda is identified. The article also provides valuable information on the topic and, by documenting it, can assist prospective researchers.

**Keywords:** Stress, Stressors, Strategies, Mental Health.

## 1. INTRODUCTION:

Mangalore International Airport, which is serving the coastal city of Mangalore, Karnataka State, India, is an international airport. The airport was known as the Bajpe Aerodrome when former Prime Minister Jawaharlal Nehru opened it on 25 December 1951. It was then re-named Mangalore International Airport, which is credited with becoming Karnataka's second busiest airport. Flights depart regularly for major cities in the Middle East, in addition to domestic destinations. With the rise and growth of the airport industry, the workforce has also made a great deal of effort to improve the airport. Expectations grew higher, giving rise to different mental health problems. For the smooth operations within the aviation sector employees must be physically and mentally healthy. But when working in an organization where there are higher demands for performance and where an employee must meet the needs of the customers it is evident that the person will undergo stress for one or the other reason. Stress is the main cause of mental health problems among employees in the aviation industry, and the literature review highlights this concern. In order to conduct a thorough analysis and investigate the causes of employee stress, the researcher undertook this research. Stress refers to a sense of mental or physical tension which occurs due to any situation or any thought which makes us feel irritated, makes us fearful, frustrated, angry or nervous.

### 1.1 Stress:

Stress is commonly known as a person's physical reaction to a threat or demand. This can be positive in short bursts, like when it benefits you get out of danger or reach a target. But it can interfere with a person's health when stress continues for a long period of time. Stress may also lower the individual's working power. The impact of mental ill health on the person would be direct and indirect. In certain ways, people deal with stress. Specialists agree that understanding stressors and the symptoms that arise following exposure to those stressors is the first step in coping. Developing or maintaining a balanced

lifestyle having satisfactory rest, physical exercise, healthy eating, minimum intake of alcoholic beverages, and avoiding tobacco products or other guidelines.

**1.2 Stressor:**

Stressors are any conditions, situations or events that triggers your stress. Every person as a student, as a professional or as a family member will likely come across a few situations or conditions that has resulted in stress. But because of differences in perception everyone will not respond to the stressors in the same way. Some people might take this very seriously but at the same time some people may take it lightly. Aviation industry is one of the most popular industry where it demands work proficiency. While working in such an industry it is obvious that workplace stress is high. Organizational factors are the most common stressors influencing employee organizational engagement. There are various factors in an aviation industry which cause stress among the employees. Some such factors are Task demands, Leadership Style, Organizational structure, Interpersonal relations, Technological Uncertainties, etc.

**2. OBJECTIVES OF THE STUDY:**

- (1) To understand the terminological concepts in the literature related to stress induced factors in aviation industry.
- (2) To summarize previous and current works which are related to stress induced factors in aviation industry.
- (3) To identify the areas of research on stress induced factors in aviation industry.
- (4) To identify the literature that contributes to the research work on stress induced factors and relevant strategies to overcome it in aviation industry.
- (5) To identify research gap and future research agendas on stress induced factors and relevant strategies to overcome it in aviation industry with special consideration on Mangalore International Airport.

**3. METHODOLOGY OF DATA COLLECTION & ANALYSIS:**

A literature search related to the research topic was conducted using keywords Aviation Stress, Stress inducing factors in aviation industry, stress among flight crews, pilot stress, stress among ATC, stress among ground crew, stressors in the aviation industry and stress inducing factors among cabin crews. The relevant literature works were searched using google scholar research engine. 70 suitable articles were identified and were used to review the literature study.

**3.1 Related Work on Stress and Stress Inducing Factors in Aviation Industry:**

A number of studies have been conducted on stress and stressors in the aviation industry by numerous authors around the world. Some authors have done study on the stress of pilots where some have focused on Air Traffic Controllers and some on Cabin Crews, etc. These studies help the researcher to understand different areas of study in an Aviation sector and gives various ideas and motivation to move forward with the current study. In the below table various related works and contribution of authors in the related fields are discussed.

**Table 1:** Some of selected reviews on Job Stress, Techno Stress, Factors of Stress in Aviation Industry, and some measures to overcome stress

S. No.	Contribution	Reference
1	Aviation personnel need a strong, integrated, structured, multi-component peer support system. One such software is called as Critical Incident Stress Management, which is practiced (CISM). The CISM Programme now serves air traffic controllers, pilots, ground staff, and flight attendants. Aviation Industry is a High Reliability Organization that is required to run efficiently and reliably. This article explains the fundamental resources offered by these teams and describes the categories and stages of guidance needed for peer support workers working in the aviation industry on CISM teams.	Jeffrey T. Mitchell, <i>et al.</i> , (2010) [1]

2	<p>This is an empirical study of the causes of pressure forcing ATCs to leave their jobs in Taiwan. It also explores the connections among Taiwanese ATCs between turnover patterns and two significant variables, work stress and job satisfaction. For the study of the proposed relationship model, the authors apply a direction technique. The empirical findings indicate that work gratification has a major influence on the interactions amongst the causes of work stress and the trend towards revenue. In addition, the assignment of career stressors, accompanied by family variables and job satisfaction, had the most influence on the trend of turnover. As evidenced by job satisfaction, it was found that the workplace and job disputes had indirect rather than direct effects on turnover patterns. The results may provide valuable information about ATC management.</p>	Rong-Chang Jou, <i>et al.</i> , (2013) [2]
3	<p>In a developing country in Asia, have made a study to identify the relation between work stress and the well-being of employees. With relation of perceived interactions at jobs that were recurrent in character, work tension was operationalized. In terms of organizational engagement, work participation, and job satisfaction, employee well-being was operationalized. A standardized survey was used to gather data from 150 employees employed by a domestic carrier in a developing country in Asia. To analyze the results, Pearson correlation and moderated multiple regression were used. Job tension has been substantially linked to organizational dedication and job satisfaction.</p>	Muhammad Jamal, <i>et al.</i> , (1998) [3]
4	<p>Technological advancement is a source of growing productivity in the aviation market, but it is a source of stress as well. The aim of the study is to identify the association amongst technological stress and air crew efficiency as well to explore in this relationship the interactive impact of workload and equity sensitivity. The study identified different type of technology stress variables, i.e., technological complexity, technological ambiguity, and technological overburden, and identified that when crew were more hackneyed and crew were more sensitive to fairness, their unfavourable relationship with crew productivity improved. Together the results indicated role-equity like fulcrum, which in the aviation industry would maximize crew efficiency.</p>	Muhammad Aftab Alam, (2016) [4]
5	<p>The goal of this is to evaluate the influence of work-associated stress on the functioning of workers in the aviation industry. (as a case study, Nigeria Airspace Management Agency (NAMA)). The study was carried out using the staff of Muritala Mohammed International Airport (MMIA), Lagos, as the airport has distinctive characteristics of heavy traffic that make the airport's staff suffer from work-related stress.</p> <p>The findings showed that: (i) Workplace stress has a major impact on male and female workers' family lives. (ii) Stress has a beneficial effect on job growth and productivity: and (iii). There is an important direct effect of stress related to work (role conflict) and job performance. The study concluded that Work-Related Stress (Home - Interface Stress and Position Conflict) has a major effect on job performance as well as on employee-job performance. The study recommended that the organization should create supportive organizational climate for all workers rather than the use of power/autocratic and money to control</p>	Idowu, <i>et al.</i> , (2018) [5]

	administrative conduct and give opportunity for achievement and advancement for employees working for the system.	
6	In an aviation sector, in air transport ground crews play an especially important role. They are the people who are most often under work pressure. This work pressure not only affects their health but also affects their individual performance as an employee and this results in poor security measures. This study identifies various connection amongst the different sources of stress in work besides its adverse consequence on the performance. In the conclusion on the study, it clearly shows that Job stress had a negative influence the work performance of employees. Few of the coping strategies helped the workers to maintain work balance and performance.	Kuo-Shun Sun, <i>et al.</i> , (2011) [6]
7	This study examines the relationships between occupational stressors, emotional exhaustion, and intentional voluntary staff turnover. Work overload, work conflict and uncertainty were the three major reasons behind emotional exhaustion of employees. The study also confirmed that workers exposed to undergo unnecessary or long-term work stress which may cause emotionally tired when interacting with clients and that stress can lead to voluntary turnover. Air carrier organizations required to provide stress management techniques for coping and action by building a culture of stress management within the company, offering unique training programmes, establishing specific job requirements, and redesigning the physical work environment.	Ju-Eun Choa, <i>et al.</i> , (2013) [7]
8	To assess their levels of stress and fatigue, the impact of lifestyle on health, to understand the causes of stress and fatigue and to understand the mechanisms for stress coping, a total of 150 airline pilots and engineers were selected. They completed 4 questionnaires each to study this. The outcome of the research indicates that both pilots and engineers were found to be more exhausted than stressed overall. Lack of exercise and a physically demanding job profile was the most prevalent cause of stress and fatigue among engineers. It has been found that sleeping and spending time with family is the best way to alleviate tension and exhaustion. Both respondents used the problem-solving method to deal with tension more often. Finally, healthy eating habits, exercise, adequate sleep and breaks during working hours are proposed to minimize fatigue for both pilots and engineers. Positive coping mechanisms among the respondents show the airline industry's adequate preparation and follow-up.	Divya Narayanan, <i>et al.</i> , (2012) [8]
9	This study was chosen to discover Indian military airmen who use adaptive strategies. One of the secondary objectives of this exploratory research was to determine whether these modes of adaptation would vary from the models observed on pilots in previous western studies. For Indian crews, cultural differences may have enormous implications, particularly when selecting the pilots and training them. Technical issues such as aircraft performance and aircraft safety, and crew assessment may also affect. A sample of 160 Indian military pilots accepted participation. The results showed that in comparison with Western	Catherine Joseph, (2016) [9]

	aviators, the variation in stress adaptation methods in Indian aviators can be clarified as being due to a potential cultural disparity.	
10	In the aircraft situation, tension is an everyday fact. This paper contrasts the job tension of 2 Iranian airlines between athletes and non-athlete pilots. In this regard, 33 occupational stressor variables based on the spiel berger work stress questionnaire (1984) were established by analyzing previous research and interviewing with aviation experts. 19 experts accepted the validity of the questionnaire, and dependability was determined by the alpha quantity of Cronbach ( $r= 0.73$ ). In 4 airports, the questionnaires were distributed among the pilots. The autonomous T-test was used to equate workplace stress between athletes and pilots who are not athletes. The findings revealed that there are substantial differences between athlete and non-athlete pilots in organizational occupational stressors, but three are not significant differences between athlete and non-athlete pilots in managerial occupational stressors.	Hossein Hajiyousefi, <i>et al.</i> , (2015) [10]

### 3.2 Technostress & its Determinants:

Each workplace involves advanced technology while working in an organization regardless of job description, employees are faced with technostress related to work.[4] Various researchers have labelled technophobe, computer anxiety, computer stress, and so on differently. Technology stress has been described as an adaptive disability syndrome created by optimistic technological change. Stress affects people's aptitude and behavioural response that comes openly or impliedly from data technology and smog (an increasing problem in information). In the present scenario the online information has been used heavily for information scarcity and this has impacted in social and sensitive problems. Several have suggested that technological stress is caused by use of information technology (IT), moreover some other authors also described that technological stress as the result of the predictable usage of built-in data base management systems. Three variables out of five techno-stress determinants, i.e., Overload of Technology, Techno-complexity and Uncertainty of Technology shed light on the importance of technology in aviation context [11].

#### (1) Techno-overload

Technical progress contributes to the escalation of work and, as a result, it increases the work demand from the employees [12]. Techno-stress defines situations in which the technology makes employees to work faster and for longer time [11]. Among the most demanding occupations flying jobs are playing major role. The crew's workstation is like many customers on board, operating at an exceedingly high speed and elevation, continuously monitoring the device panel, bounded by complicated avionics, advanced aircraft controls, weight charts, preparation of fuel, climate limitations, anti-community flight timetables, early departures, and delayed arrivals. Moreover, with more data, employees are outdated, and production worsens. New technologies are also designed to boost employee productivity, nevertheless they are so overwhelmed by their submissions in practice that it becomes impossible to do the job.

#### (2) Techno Complexity

Routines act as "mind savers," and to ensure airworthiness, the aviation crew follow a routine [13]. Technological invention implies innovation and requires additional effort, thereby reducing the dependence of crew on routines and making the job more complicated [11]. Technical Complexity and less accessible time put excessive pressure on the crew. This forces the user to view their skills as inadequate and requires them to learn and understand different IT functionalities. Technology complexity poses several challenges, including heavier burdens, higher operating costs, lower crew efficiency and increased competitive disadvantage. They argued that the reality is that complexity is frequently a critical cost to technology adoption [14].

**(3) Techno-uncertainty**

While the transition is for the better, technical developments tend to stimulate unpredictability and uncertainty [15]. Due to frequent updates, it requires the user to continually inform himself about the new IT features and remains mentally unsettled and unsure. Despite being a key component of sustainable economic development, a high degree of uncertainty characterizes technological change. With jet engine induction, the importance of potential developments was not expected by individuals at the most prestigious scientific levels. If a new technology that enables the recent usage of copyrighted material is implemented, its monetary and societal implications are ambiguous and numerous uncertainties and nuanced perception problems arise.

The importance of an airplanes depends not only on its net advantages, but also on maximizing the efficacy of its invisible assets. It is mostly built on employee productivity [16]. Multitudes of applications put on the panel of a consumer intensify the degree of techno-stress and adversely affect efficiency, requiring long-term control steps. Studies have advised that if the offsetting effects of technological stress are not taken into account, it may seriously hinder the employee's expected productivity [11]. Thus, technological stress and crew performance are associated.

**Table 2:** Related literature reviews on stress among Pilots, Security Personnel and Medical Personnel.

S. No.	Contribution	Reference
1	In this study the author stresses that the PMI which is known as Pressure Management Indicator is more exact, informational, and briefer than the Occupational Stress Indicator which is also known as OSI in short. By using this PMI the final outcome indicates us the level of job & organizational satisfaction, organizational security, commitment, wariness stress and exhaustion. Stress scales include workload burden, relationships, professional development, management responsibility, personal accountability, household demands and day-to-day hassle. Moderator variables assess motivation, impatience, power, decision latitude and problem concentration, work balance in life and coping strategies with social support.	Stephen Williams, <i>et al.</i> , (1998) [17]
2	The goal of this research was to explore the relationship in aviation ground crews between different sources of occupational stress and work efficiency. Using structural equation modelling, the relationship between job-related stress, managing strategies and job performance (SEM) was also explored. The results of the study showed that occupational stress has an adverse effect on job accomplishment, and the mediator survives between job-related stress and job performance in the coping strategies.	K. S. Sun, <i>et al.</i> , (2010) [18]
3	Under conditions of time pressure and uncertainty, many pilots will perform successfully every day in demanding, high demand, high workload environments. The personality traits, coping mechanisms, and abilities required to cope with such tough circumstances are attributed to these competent pilots. To obtain a deeper understanding of pilot performance under stress, the present discussion will analyze existing theorizing factors that can alleviate the stress response and describe the prevalence of these variables in pilots relative to the general population. In the context of cognitive testing, consequences for staff selection and training will be addressed.	Haydee M. Cuevas, (2003) [19]

4	<p>Given the competitiveness of the airport landscape of the twenty-first century, catalyzed by the transformation of airports to multi-service and market-driven businesses, a detailed inquiry into the ingenuity of employees and their history in the airport environment is needed. Staff workload has shown an almost linear association with innovation, stabilizing at high workload levels. Basic self-assessment has proven to be an effective buffer for creative relationships about role uncertainty and time pressure, but no role and work conflict. Mindfulness, but not workload, addressed role uncertainty, role conflicts and temporal pressures, innovation linkages. To maximize the innovative performance of workers, the study results clearly demonstrate that the individual variables required to manage stressors need to be addressed.</p>	<p>Collins Opoku Antwi, <i>et al.</i>, (2018) [20]</p>
5	<p>Most studies have examined the factors that affect the efficacy of X-ray screening. It is essential, however, that specific screening tests need expertise through real-world experience, which can only be acquired over a long period of time. As a result, a potential risk to aviation safety is the high turnover of airport security screening officers. The authors examined whether workplace stress influences the intention to rotate scenarios and whether this interaction depends on job satisfaction. They also looked at whether this model of mediation is moderated by the participant's level of motivation by conducting a moderate mediation study. High workplace stress has been shown to be associated with low job satisfaction, which in turn predicts a higher turnover rate. Furthermore, among security scenarios with high self-determination motivation, the effects of such a mediation model were considerably greater than those with low self-determination motivation.</p>	<p>Eun Kyoung Chung, <i>et al.</i>, (2017) [21]</p>
6	<p>Air Medical Healthcare (AMH) professionals treat seriously ill people when they move them from remote and sometimes risky places to health centres. Over and above the “typical” stressors experienced by most health professionals, these professionals face added health and safety concerns. To analyze the relationship between job-related stressors and two mechanisms of burnout, and the regulating influence of work management and crew performance for 106 Canadian AMH practitioners, we therefore combined the safety and psychosocial health literatures. Emotional fatigue was uniquely predicted by concerns about medical conditions and obstacles to health care. Lack of perceived control over one's work after controlling for stressors was connected to fatigue and depersonalization. Some of the stressor-burnout interactions were buffered by job management and team performance.</p>	<p>Arla L. Day, <i>et al.</i>, (2009) [22]</p>
7	<p>In the present situation where there is increasing threat of terrorism in every corner of the world, the role of aviation security and the security officers is increased. More particularly the screening officers play a vital role in airport security. But there is limited research conducted on the airport security and the research focus on mental fatigue and work satisfaction of airport security is very less. This study is an attempt to fill the research gap by relating the job demand resources model.</p>	<p>Sophie Baeriswyl, <i>et al.</i>, (2016) [23]</p>
8	<p>In this study, the noise management regulations and certain rules and regulations at commercial airports are examined. In this study, by analysing the noise measurements a new noise measurement was formulated as a function of background noise levels in the environment.</p>	<p>Deborah A. Blacka, <i>et al.</i>, (2007) [24]</p>

	By considering the confounding factors, it has made to understand that those who have exposed more to a high level of aircraft noise likely to develop high stress and hypertension than the non-exposed to aircraft noise.	
9	A central component of health and mental well-being is the opportunity to function productively. Reduced efficiency in the workplace is correlated with Common Mental Illnesses (CMDs). This influence is anticipated to be highest in developing countries. In addition, occupational stress is associated with a major negative effect on mental well-being and is related with an increased risk of CMDs. The relationship between the working climate and psychological morbidity will be clarified in this study. It also addresses the evidence for the promotion of mental health and intervention research. The outcome indicates that encouragement and study on the promotion of psychological health and initiatives in developed nations to fix CMDs in the workplace environment is an urgent priority.	Prem Chopra, (2009) [25]
10	Using staggered three-wave field data from approximately 151 full-time workers, he investigated how workplace bullying results in burnout as a work-family conflict (WFC). Energy resources are required to meet work and family requirements to plan and implement strategies in a way that balances the two. Therefore, based on the principle of resource conservation, the authors assume that bullying in the workplace can result in exhaustion, which, in turn, can deplete people's energy resources and create a higher tension between work and family. The findings deliver their theories with strong support. WB was associated with burnout and WFC positively, burnout was associated with WFC positively, and the association between bullying and WFC was mediated by burnout.	Usman Raja, <i>et al.</i> , (2017) [26]

### 3.3 Critical Incident Stress Management (CISM): An Aviation Industries new action for Successful Peer Support:

In High-risk organizations (HRO) workers are subjected to intense stress or major risks to their physical and emotional well-being.[1] Aviation industry is one of such industry which is known as a High Reliability Organization (HRO); which required to run efficiently and reliably. In these occupations, extremely worrying or threatening conditions are a potential danger connected with work. For aviation staff, a robust, integrative, systemic, and multi-component peer support programme is required. The authors give a summary of one such programme which is named as Critical Incident Stress Management (CISM). The CISM programme supports air traffic controllers, pilots, ground staff, and flight attendants. Systematized as well as well-skilled CISM players will empower a high threat/high dependability organization to turn into an organization with high resilience [27].

#### (1) Aviation Vital Accidents:

Crucial incidents are occurrences that are so rare or influential that the coping skill of those who are subjected to them may be overwhelmed. A critical incident causes a strong emotional response that is often turbulent, called a disaster or sometimes a crisis reaction. Their thoughts can become disorganized and vague while people enter a state of extreme expressive distress. Exaggerated emotions can control one's responses. Errors may occur more frequently when stress levels are high, and mishap rates and individual injuries tend to climb. Mental imbalance can occur, that is, the thinking capacity of an individual is suppressed, and one's emotions escalate to a viewpoint of being almost out of command. Crisis involvement may be appropriate in certain situations to restore the balance of individual and

support him or her in solving the condition. Crisis intrusion is the effective, compassionate, and provisional support provided to those who are undergoing a time of acute distress by family associates, acquaintances, co-workers, and qualified fellow support staff [28].

**(2) Some of the Critical Aviation Accidents are:**

(1) Violent passengers, (2) Injuries to the ground crew members, (3) Turbulence, (4) Demises of passengers, (5) Severe equipment failures, (6) Deaths of co-workers, (7) Major work-related injuries to co-workers, (8) Accidental injury to an aeronautics worker or a traveler, (9) Events linking a high gradation of staff risk, (10) Extremely ill or wounded child on board, (11) Crucial airborne medicinal emergency, (12) Bullying passenger, (13) Abuse from any source during flying, (14) Aircraft damaged or disabled during flying, (15) Fire on board of an aircraft, (16) Leakage of hazardous material in an aircraft, (17) Threat from terrorist, (18) Tragedies connecting to aircraft, and (19) Aircraft crashes and Other stressful involvements [1].

**(3) What is CISM**

A strong, coordinated, systematic, multi-component emergency response program is Critical Incident Stress Management (CISM) [1]. The name of the Programme, Critical Incident Stress Management, is CISM. Following, it is possible to see the same initials, CISM, as a Programme summary - detailed, integrated, systemic, and multi-factor. CISM is flexible, realistic, and competitive. It is a system of stress management of common sense. For aviation staff members, it can do a lot to relieve anxiety and to preserve healthy standards of function. Since its establishment in the 1970s, over a thousand community organizations and services have expanded quickly to various forms of departments, associations, and services.

CISM is greatly termed as a "package" of strategically woven crisis management strategies. These are the key goals of the CISM programme: (1) Minimize the effect of a traumatic incident, (2) Promote natural healing processes in persons who have traumatic event reactions 3) Restore the adaptive function of people, groups, and organizations. Aviation industry studies and reports, from airport facilities to airlines and from ground handling workers to captains including air traffic controllers and flight assistants, indicate that excellent crisis support could be provided by paraprofessionals or friends who help friends. The CISM team responds with expertise, care, and consideration, whether it is a condition including individual bereavement, a family emergency, or an air tragedy. The tremendous importance of crisis management teams has been shown by crisis response staff. The number of support services in the coming years is expected to increase. In the lives of others, peer support personnel make a difference.

**Table 3:** Some of the related reviews on Burnout Syndrome, Work Family Tension of women workers Personnel and Ramp safety

S. No.	Contribution	Reference
1	This document highlights the research on the correlation between organizational forecasters and individual results through a psychological framework in the aviation industry based on the combination of the theory of affective events and the resource model. work submissions. As the first to analyze in quantitative terms how internal marketing contributes to creating satisfaction by improving the work-family interface of flight attendants, this study makes a new contribution. The satisfaction of cabin crews by reducing the tension between work and family may be influenced by contacts, social assistance programs and management support. However, compensation does not seem to have any effect on flight attendant satisfaction.	Au Due Tang, <i>et al.</i> , (2020) [29]
2	Literature on conflict between work and family focuses on women's perspectives and policies on organizational equality. This paper analyses the outlook of women serving for a Chinese airline. The study explores	Xiaoni Ren, <i>et al.</i> , (2011) [30]

	work-life tensions and organizational assessments of women's requirements. In the study the findings indicate that employment and family matters are the utmost potent reason of dispute for Chinese women who work in airline industry. By understanding these differences, the ethnic and social factors that make up family relationships demonstrate to be important, but also illustrate the important role played by the gender organizational culture.	
3	The aim of this study was to establish the link between burnout syndrome, Stress in work, level job satisfaction and work-family conflict, considering the following variables in a sample of air traffic controllers: age, gender, their civil status, permanence of work, type of their contract and presence or absence of children. There were significant and directly proportional differences related to job tenure and fatigue, burnout and family conflict, work stress and cynicism when measuring the dimensions of burnout	Carla Aguirre Mas, <i>et al.</i> , (2018) [31]
4	Employee commitment contributes to loyalty and psychological affection and is expressed in the form of high-level employee retention. By defining its drivers (influential variables) and working on them the degree of employee engagement can be increased. The drivers of employee engagement are known, and theories have been developed for the purpose of analysis. The study found that it's possible to bring employee satisfaction by increasing the level of workers dedication and giving importance to a few non-monetary aspects. The rational consequence of this research is that where there are economic limitations, retention can be strengthened without financial expenditure. Businesses should design good practices in the light of performance without much financial strain to retain their best talent (highly qualified and specialized human resources).	C. Balakrishnan, <i>et al.</i> , (2013) [32]
5	In modern global aviation safety, ramp safety is a major problem, and ramp workers play a key role in ramp operations. Ramp personnel normally must work under time constraints in harsh conditions relative to other employees integrally involved with the operations of an aircraft. The pain of their work makes their career a high-stress job. This research studied ramp workers in Taiwan, used the design of a stress scale questionnaire based on literature review and interviews, and conducted statistical analyses to evaluate the relationship between sources of job stress, stress coping strategies, and ramp workers' stress consequences. The study findings showed that the sources of work stress from ramp workers are positively correlated with stress management strategies; sources of work stress are positively correlated with the effects of stress; strategies for stress coping are negatively correlated with the effects of stress. The goal is to provide research results as a reference for competent aviation authorities to attach importance to the high-risk operational situation of ramp employees, to involve airline operators in	Ying-Chun Wang, <i>et al.</i> , (2013) [33]

	the management of employee stress with a view to reducing ramp accidents caused by job stress and to improving aviation safety.	
6	The Central Industrial Security Force offers protection for many critical industrial sectors of the country, including airports, and CISF workers are prepared for different periods to meet planned and unforeseen emergencies. The need for this study was to testify the psychiatric morbidity at the National Industrial Security Academy, Hyderabad, and the factors leading to stress among CISF personnel. The study findings showed that, relative to those posted in non-stressful areas, workers posted in stressful areas and constables perceived more stress and morbidity.	G. Prasad Rao, <i>et al.</i> , [34]
7	Nature-Based Solutions (NBS) bring several physical and mental advantages to passenger's as well as to employees in the aviation travel and tourism business segment.  This study explored the effect of the green atmosphere around the airport on the emotional health, standard of the airport, and loyalty generation processes of airport occupants. The study reveals that green atmospherics like NBS is drastically boosting the value of psychological health of workers and standard of the airport of the occupants, and this adds to improving their trustworthiness to the airport. Besides, the connections between the natural environment and the value of mental health seemed to be greater in the visitor group, as well as the relationship between mental health and devotion seemed to be stronger in the worker group.	Heesup, <i>et al.</i> , (2019) [35]
8	The goal of this paper is to test airport ramp employee requirements by using two cooling vest styles to determine the factor influencing the preferences for one vest over another. The results of the variance analysis disclosed the fact that the employees at the airport apron are not much convinced with the cooling vests than those who are outdoor workers. Because of usability problems of cooling vest styles for airport apron workers, this study provides realistic guidance for optimizing the designs of personal cooling vests, provided that the determining factor influences workers' choice for cooling vests.	Albert P.C., <i>et al.</i> , (2016) [36]
9	The study is made mainly survey-based, by using 2312 residents who were living near the Frankfurt Airport, to make an assessment the discomfort and disturbance of aircraft noise as well as ecological and wellbeing-related condition of life. The study also compared the various effects of experience to aircraft noise, road traffic and train noise. The study results showed a big noise annoyance than expected from the overall curves for exposure-response. The results indicate a recurrent relationship between noise and wellbeing, but in transversal studies, it cannot be tested. To get a better knowledge of the causal paths underlying the noise and health relationship, longitudinal studies would be advisable.	Dirk Schreckenber, <i>et al.</i> , (2010) [37]

10	Construction, banking, educational institutions, financial institutions, IT, call centers, and private hospitals are the various sectors in which job stress and productivity factors are studied. Workload, role uncertainty, gender discrimination and interpersonal relationships are the variables/indicators that can be identified in the current literature for studying job stress. This paper also sheds light on the meaning of the different indicators listed above. The conceptual framework, moreover, models the connection between work stress and productivity.	Bharathi T, <i>et al.</i> , (2017) [38]
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**3.4 Shift Work, Biological Rhythm & Risk Factors:**

Work which is scheduled beyond the normal time limit is i.e., 9 am to 5 pm is known as shift work. It may include early morning start of work, afternoon start of work and working at night which is normally called as night shift work [39]. Shift works normally cause a disturbance in biological patterns, disturbances in social and family life and have a detrimental effect on performance quality. But during these shifts an employee may experience disturbances in sleep, delay in shifts, psychosomatic disorders, errors in duties and some injuries may have adverse effects. Apart from this, there might be increased risk of long-term gastrointestinal, neurological, and cardiovascular conditions, and women may be weaker to shift workers schedule in relation to their family commitments [40]. It is common to have shift work within the aviation industry. Airline pilots, Cabin crew, ATC, check-in, baggage handling, and many more personnel are involved in shift works. But in this form, you also have an option to include continuous, permanent shift work which is with or without the night shift.

**(1) Sleep and the three shifts:**

If we analyze the relationship between sleep and shift work, it clearly shows that shift workers often show more sleep disturbances than day-based workers. Depending on the shift timings the results of sleep disturbance may differ. However, the night, morning and afternoon shifts and its impact on the sleep habits are briefed below [41].

**(2) Night Shift:**

Working at night is one of the major reasons for the sleepiness the individual and it is subjected to the well-established daily cycle, attributes of most physiological and psychological influences, to work at the lowest point. Essentially, in the late afternoon, alertness, productivity, and metabolism reach peak and reach the lowest point in the early morning. Sleep will also be heavily interfered with by the moment of maximum alertness, while the low point will promote sleep equally strong. It will therefore minimize the daytime sleep. The other explanation for sleepiness at night is that, compared, for example, to the day worker's 9h equivalent, standby time before the end of a night shift is extended to 20-22h. Immediately after the end of sleep, alertness begins to decline and continues for the remainder of the waking period. In addition, sleepiness would be enhanced by decreased prior sleep duration, while alertness seems very resilient against limited sleep restrictions.[42]

**(3) The morning shift:**

Usually, early wake up curbs our sleep in the early morning, and this makes the sleep short during the morning shifts. Generally, a person will not be ready for the work without having a plentiful rest. But sleep latency also has a strong day-to-day effect. It would be impossible to move ahead without the proper bedtime process before a morning shift as this would put sleep time close to the circadian Acro phase and make it hard to start sleep [43]. When a person's day to day cycle affects the early morning, waking seems to be challenging for the employees. Thus, with the circadian nadir, an early waking would coincide, and this circadian period appears to be very defensive against the cessation of sleep and seems to make it exceedingly difficult for forced awakenings [44].

Besides, the early morning waking would decrease sleep period and thus lead to sleepiness in the morning shift. This is compounded by the reality that by expanding the time spent awake by 2-3 hours, the early morning waking often adds extra sleepiness. Finally, it seems that the difficulties of having to

rise early in the morning at a difficult time are often correlated with anticipatory tension, controlling some of the SWS that would usually occur [45].

**(4) Afternoon work:**

There have been less studies exploring the impact of afternoon shifts on sleep while comparing to morning and night shifts. In general, a trend of slightly late bedtime, waking at 08:00 h and lack of napping is seen [46]. The model, however, is less homogeneous than the other shifts and the timing of sleep for the afternoon shift is more varied.

After reviewing the above study, it is identified that at nights both safety and productivity of employees is declined at night [43]. This decrease is likely to indicate a variety of fundamental variables which include reduced health condition, upset social life, reduced, and no sound sleep, and interrupted circadian rhythms. Even though the present statistical models of performance and vigilance give trouble in identifying the exact risk trends associated with the shift works system, these can be used to reduce the risk out of it.

Although current mathematical models of vigilance and presentation have difficulty in recording the exact risk trends linked with the different characteristics of shift work systems, these patterns could be utilized to try to decrease the risks related with night work. Specifically, we need to weigh the amount of repeated night shifts, the duration of night shifts and the offer of leisure's within them to reduce the overall risk of a shift system.

**Table 4:** Some of the reviews on stress among Pilots, Security Personnel and Medical Personnel.

S. No.	Contribution	Reference
1	Emotional labour is the show of anticipated feelings during service experiences by service agents. It is carried out by behaving on the surface, deep acting, or showing real emotion. Emotional work can encourage the performance and self-expression of activities, but it can also promote consumer demands that cannot be met and can cause emotional conflict and self-isolation. However, according to the theory of social identity, It is argued that some effects of emotional work are mitigated by social and personal identity and that emotional work stimulates pressure to identify with the service role. The implications of the research for microorganisms, Mesos and macro-organisations are discussed in the paper.	Blake E. Ashforth, <i>et al.</i> , (1993) [47]
2	A fundamental part of an aviation structure is aircraft maintenance. In the Reporting System in Aviation Safety, 21 percent of all recorded incidents are exhaustion-associated, and 18 percent of all collisions have maintenance issues involved. Therefore, these maintenance standards are created to blend human intelligence with organizational abilities and individual maintenance skills to enhance interaction quality and safety in aircraft maintenance operations. Fatigue is one of the known human issues contributing to blunders in maintenance. This paper analyzed the difference in psychological and physiological exhaustion in shift employees and the factors underlying line maintenance crews' fatigue. Feedback Form obtained from Taiwan's two main airlines are used to examine the underlying causes of fatigue. A variety of recommendations are given to airlines based on the study results to further boost the working mood and exhaustion of line maintenance crews.	Ta-Chung Wang, <i>et al.</i> , (2014) [48]

3	<p>The present study is carried out to analyze the pressure of pilots, air hostesses and air traffic controllers on emotional work and organizational function. A one-way ANOVA test showed that in their emotional work and organizational function, there is a significant difference on one another between three group of aircraft employees. More precisely, compared to pilots and air hostesses, air traffic controllers are monitored to have considerably greater organizational function tension, whereas air hostesses are noticed to have significantly greater emotional work stress associated to aircraft pilots and air traffic supervisors. Study findings are useful for the aircraft administration authorities to come up with various techniques to boost the stress of emotional work and managerial role.</p>	<p>Mahadevi S. Waddar, <i>et al.</i>, (2012) [49]</p>
4	<p>The intention of the present study was to obtain an indication of a) the degree to which industrial psychologists and their activities in the aircraft industry have been accepted and (b) some of the factors associated with this acceptance. A questionnaire was sent to 160 personnel executives in the aircraft industry manufacturing products for plants. Inferences are drawn on emerging patterns.</p>	<p>Joseph Tiffin <i>et al.</i>, (1956) [50]</p>
5	<p>An Efficient direction in business flight operations entails good and successful communication between flight deck and cabin crew members. This effective and clear communication is necessary not only between these two elements but also between flight crew members and other external performers such as air traffic controllers and aircraft dispatchers. Many times, we have seen that the breakdown of the information transfer procedure has led to several incidents and many fatal accidents. To improve the communication during flight operations the study suggests that research requires to move further than self-report measures.</p>	<p>Norman M. Brown, <i>et al.</i>, (2009) [51]</p>
6	<p>Several psychological, cognitive, and social variables lead to airborne interactions between crew members, and the concept of CRM has enhanced progressively more needed to achieve best possible levels of communication and safety during fly. Crew resource management means effective coordination that involves effective and efficient communication of relevant information among the cockpit, cabin crew members. To improve coordination, the potential ramifications of crew resource management were extended to online instruction sessions and concepts were even developed in the fields of dentistry and medicine.</p>	<p>Jillian Avis (2012) [52]</p>
7	<p>An increasing body of evidence indicates that mental health in a few realms is adversely affected by long work hours. Problems with mental wellbeing have shown to have a detrimental effect on work results. In the aviation sector, this result was demonstrated by the Germanwings case in 2015, in which 150 individuals deceased. Additional research into operating times and their related issues (e.g., demographic features and perceptions of cockpit sleep and fatigue) leading to pilot mental health problems is justified. A cross-sectional survey was created and distributed to commercial airline pilots exploring perceptions and</p>	<p>Anna Donnla, <i>et al.</i>, (2016) [53]</p>

	<p>experiences of fatigue. Pilots who usually reported spending more flying hours in each week were likely to inform that they are more depressed or anxious while comparing others. Work-related sleep interruptions and pilot exhaustion experiences may describe why pilots (those who usually spend long fly hours in a week) are likely to state that they are more depressed or anxious.</p>	
8	<p>Considering the effect of stress on individual being accomplishment is of theoretic and realistic significance. A person's response towards the stress forecasts their consequent execution; with a "challenge" reaction to stress that leads to better functioning than a warning reaction. Though, this assertion has not been checked in really challenging situations with professionally qualified persons. Besides, the result of task and risk reactions on attentional influence during visuomotor responsibilities is inadequately recognized. Therefore, this research was intended at examining a person's stress responses and their effect on attentional command among a cohort of commercial pilots playing a hectic flight evaluation. 16 pilots conducted a "motor failure on take-off" situation in a high-dependability flight simulator. The findings refer to earlier studies demonstrating that individual stress responses influence execution and highlight the mechanisms through which stress impacts performance.</p>	<p>Samuel J. Vinea, <i>et al.</i>, (2015) [54]</p>
9	<p>The study examined the impact on passenger discomfort during turbulence while following the direction of aircrews by the passenger may lead to the injury. The result showed that while participants were more annoyed with telephone calls, they had comparable degrees of concentration and fulfilment. Reaction moments were greater as they heard conversations in person. The conclusion is that telephone calls are no more distracting, and even face-to-face conversations can be better than traditional conversations. From a traveller compliance perspective, cell phones should be permitted and accommodated. Still, one must consider the irritation caused by phone calls.</p>	<p>Tianhua Li, <i>et al.</i>, (2020) [55]</p>
10	<p>Radiation from ecological and engineered resources is an undeniable fact of human life. Discussions on the health effects of aviation radiation exposure have been intense in recent years, and the focus seems to be primarily on airborne radiation exposure. This document addressed occupational radiation exposure issues in aeronautical operations, with a focus on workplace radiation exposure to non-ionizing radiation from TASP, building on a systematic literature review. The paper concluded that, established an assessment of the prospects occurring from the qualitative mixture of data from both experimental and epidemiological research, ATSEPs are a group of aviation specialists exposed to occupational risks.</p>	<p>Adeyinka Olumuyiwa Osunwusi (2020) [56]</p>
11	<p>The objective of this paper was to determine the threat associated with the lack of visible perception of transport category aircraft on visual approaches. Visual awareness is essential in the practice of visual methods and it is essential to study variables that may restrict human capacity to preserve visual understanding. Visual attitudes reveal pilots to complex and essential visual stimuli that need a high degree of visual</p>	<p>Shlok Misra (2020) [57]</p>

	<p>awareness to ensure the safety of operations. Shortage of crew resource control, fatigue, and lack of situational consciousness in the cockpit were analysed as significant accident factors during visual approaches during periods of high mission saturation. Some of the suggested methods discussed in the study were improved guidelines for crew resource management and task and risk supervision measures to find high-peril airports and directions that recognize flight work times, physiological aspects during operations such as Low Circadian Levels and topographical characteristics close by the airport that might persuade visual deceptions.</p>	
12	<p>The low-cost air transportation paradigm has been argued to create unacceptable levels of flight crew strain and exhaustion. Pilots were questioned by a British-registered low-cost transporter (LCC). Most expressed anxiety and tiredness. Despite its subjectivity, the testimony of the pilots shows that stress and exhaustion are problems that demand close care, not minimum because incidents such as the terrorist attacks of September 11, 2001, the 2003 Gulf War, and the outbreak of coterminous severe acute respiratory syndrome (SARS) have intensified pecuniary compressions inside the business unit. There are observations and ideas from flight crews that may support commercial aviation. It is they who produce the commodity, and not lawmakers or civil servants. A dedication to risk communication (as described by Irwin and Wynne) that emphasizes ongoing dialogical risk evaluation, and the systematic and regular use of user information is suggested to improve flight safety.</p>	<p>Simon A. Bennett (2003) [58]</p>
13	<p>Workplace hardship induces workplace tension, impacts endurance, and decreases work efficiency and well-being. This can take the lead to turnover and burnout. In male-governed workplaces, women pilots face adversity, leading to work-related stress. When dealing with stress in the workplace, resiliency may be a mitigating factor. Women remain the extreme minority in men-dominated occupations. In addition, the need to employ and retain pilots from underrepresented communities is magnified by a serious pilot shortage. The female pilots' age and work experience suggest that they can affect higher resilience. Therefore, the author concluded that the durability of female pilots is likely to be weakened by adversity in the workplace, which may take the lead to higher occupational stress, higher abrasion, and a small number of pilot participants. Initiatives intended at expanding the resilience of women aviators are essential to resolving the pilot deficiency. The results support vision into the hiring, retaining, and advancement of women in men-directed careers.</p>	<p>Stephanie Douglas <i>et al.</i>, (2020) [59]</p>
14	<p>Aviation health specialists face distinctive challenges that go further than the complexity of performing in hospitals or on the field. Many 24-hour shifts are frequently performed by suppliers, which disrupts the circadian cycle and leads to accumulated sleep deprivation. The aircraft ecosystem and the impacts of aircraft also contribute to fatigue, but air physicians ought to participate in emergent, urgent and lifesaving procedures during these overwhelming circumstances. Therefore, in this study, the objective of the Flight Risk Assessment (FAE), a specific</p>	<p>Jennifer Lee Noskera, <i>et al.</i>, (2020) [60]</p>

	measure of self-reported fatigue for serving medical personnel, was undertaken. The authors concluded that the aviation health industry is growing faster and that meaningful and dependable measures to evaluate the degree of fatigue in suppliers are indicated.	
15	The aim of this study was to ascertain whether the recognized work assignment is an autonomous indicator of cabin crew fatigue on megalong air travel at the top of the descent, and, if applicable, how much is related with cabin crew fatigue with sleep-associated reasons. The method adopted for the present study was that 55 cabin crew members showed an actigraphy and achieved a sleep/duty log to examine their sleep throughout an ULR flight. It was found that the workload justifies continued monitoring of the cabin crew as a fatigue factor. As a critical component of fatigue risk management systems, this can be achieved through the inclusion of a workload issue in fatigue reports.	Margo J. van den Berg, <i>et al.</i> , (2019) [61]
16	Aircraft flying is a complicated task that imposes pressures on many facets of a pilot's reasoning abilities. To understand the effect of these criteria on the pilot because of the multidimensional nature of the flight, many measures are necessary. Flying aircraft is a complicated assignment that requires numerous reports about heart rate variability, eye blinking, electrodermal activity, the electricity movement of the brain measured topographically and estimates of subjective mental workload. The study found that heart tests and electrodermal tests were closely related and showed changes in addition to the various flight requirements. The variation in heart frequency was less responsive than the heart rate. The function bands of the alpha and delta brain indicated substantial variations in the different requirements of the situations.	Glenn F. Wilson (2009) [62]
17	To establish the system that is influenced by components of the human aspect, the saga of the human aspect in aviation, a very enlightened and enormous quantity of job has been done. This research aims to include, keeping this in mind, a brief glimpse of aviation human factors influencing the efficacy of work in Maintenance Repair Overhaul (MRO) organizations. The starting of the report offers brief information on the progress of the human element in social psychology. It then concentrates on the components that social psychology offers for safe and smooth operations for professionals involved in aviation, such as airplane repair engineers, technicians, maintenance planners, etc. In different cases, it also illustrates the human link to social psychology. MROs' working environment is very demanding and dynamic and presents many challenges from the human factor arena. The study guides the reader to the reasons and influences that are now driving the field's reducing edge. The thesis seeks to deliver the importance of different elements of social psychology emerging from the arena of the human factor.	Kamal Jaiswal, <i>et al.</i> , (2019) [63]
18	There is a requirement to better understand consumers' behavioral reactions in a period where the transport segment is rapidly supporting to environmental harm. Theories like the Theory of Planned Behavior and the Norm-Activation Model have had some achievement in justifying pro-environmental behaviors; this paper discusses the	Lisa Davison, <i>et al.</i> , (2014) [64]

	application of these theories to air travel. It uses results from preceding approach behavior studies to obtain a more comprehensive interpretation of how prescriptive influences, personal beliefs and other psychological aspects are influenced by personal attitudes to air travel approaches and how they affect behavior. This notifies the policy reaction guidelines, emphasizing the requirement to put air travel conduct in track with other household energy-protecting activities.	
19	Fatigue is most widely cited performance deficiencies in the aviation industry, and for more than 40 years, this has been a main worry of the National Transportation Safety Board. There are several aspects that may cause to fatigue in aviation workplaces, including collective and personal factors, and time zone shifts. Because sleep and circadian processes interact to affect sleep tendency, waking attentiveness and performance, it is essential to precisely measure the impact of these factors.	Seungyoung Leea, <i>et al.</i> , (2018) [65]
20	The circadian clock adjusts slowly, if necessary, to the rapid modifications between different work calendars. This leads to misarrangement of rhythm physiological structures, such as sleep, attentiveness, accomplishment, metabolic rate and melatonin and cortisol hormones, with the required work-relaxation schedule. The results involve inadequate sleep and inadequate efficiency. Shift work presents an enhanced risk of major heart disease, cause to cancer and may lead to circadian desynchrony. Several strategies are in place for treating circadian desynchrony and accelerating circadian rearrangement.	Josephine Arendt, (2010) [66]

#### 4. NEW RELATED ISSUE :

The researcher will try to examine in depth the other related mental health issues that have an impact on the work of the employees after the data analysis and the research will have been able to understand the stress rank of the respondents and the stressors. To understand the root cause of the stress, various stressors related to work pressure and personal variables will be measured. By providing appropriate training for aviation industry staff, the stressors will be tried to reduce.

#### 5. IDEAL SOLUTION AND PRESENT STATUS :

Stress is the factor experienced by the pressure and fatigue of work, which can have a serious impact on both personal and professional life. In the field of aviation, this is more problematic, but it can endanger public life. This has been seen in many air accidents, as was recently seen in the air crash at Mangalore airport. Therefore, the ideal solution is to reduce the stress to zero in any working condition. But in practice, it is not possible. So, the stress level could be managed when the stressor could be handled by the employees with adequate training given to them.

#### 6. RESEARCH GAP :

This has been seen in many air accidents, as was recently seen in the air crash at Mangalore airport. Therefore, the optimal solution is to reduce the stressors, which is not impossible. So, the stress level could be managed when the stressors could be handled by the employees with adequate training given to them.

#### 7. RESEARCH AGENDA:

After analyzing the literature shown above, it is learned that from the top level staff (which includes Pilots, Engineers, ATC etc.) to the bottom level staff (Ground Handling staff, Baggage Handling staff, Ticketing staff etc.) in the aviation industry experience stress, Physiological exhaustion, Technology related stress, burnout etc. and to come out of this stress studies show that few strategies are applied but these are limited. In the above studies, more importance is given to study the effects or result of stress on job performance, quality of work, staff turnover, etc. This research study is intended to focus on the various stress inducing factors in the aviation industry and the strategies presently deployed by the staff and industry to overcome these stressful situations. The focus will be mainly on the study of various stressors and the tactics to face these stressors. For the purpose of this study the researcher has planned to choose respondents from the Mangalore International Airport. After a detailed study of stressors and present strategies deployed to overcome this the investigator will also attempt to introduce a stress management module and recommend it to the aviation industry with special consideration on Mangalore International Airport.

**7.1 Analysis of Research Agenda:**

As per the literature review results, it is recognized that the decrease in mental health status is going through most of the employees of the aviation industry. To mention a few reviews that address the stress faced by respondents [49], [55], [59-61], their impact on the performance of the job [54], [63], impact on the economic factors of the industry [58], the need for mental health of employees in the aviation industry [52-53], [62], and many more reviews show the significance of the research agenda.

**7.2 Proposed Research Topic:**

Based on the review and research gap, it is proposed to study the Stress inducing factors and the strategies deployed to overcome stress in the Aviation Sector with special feference to Mangalore International Airport.

**7.3 ABCD Analysis of the Research Proposal:**

ABCD analysis is an outline created in 2015 for qualitative and quantitative assessment of processes, principles, technology, concepts, and strategies [67-68]. This framework means that the system's Advantages (A), Benefits (B), Constraints (C), and Disadvantages (D) are defined. Here the drawbacks, benefits, constraints, and disadvantages of the research proposal have been described as determinant issues [69-70].

**Table 5:** Qualitative ABCD Analysis of research proposal

S. No.	Determinant Issues	Advantages	Benefits	Constraints	Disadvantages
1	Identification of stressors and level of stress	(1) To prevent stressor (2) To manage the stressor into positive energy	(1) Can manage the stressor to avoid stress (2) To avoid the stress to manifest in mind	(1) The pressure of the upper level manager	(1) Work pressure
2	Management of stress	(1) To manage the stress by various mind techniques (2) To work professionally and effectively (3) To maintain mental peace in workplace as well as home	(1) Better working condition (2) Increase in work output	(1) Cost of training of stress management	(1) Cost benefit analysis to be calculated
3	Recommendation of policy in	(1) Implementation of stress management training to the employees	(1) Better working environment	(1) Require more training	(1) Financial constraint to the

	training for stress management		(2) Reduced organizational conflicts	and specialization	management to provide training.
4	Aviation industry	(1) Economic development (2) More work output, hence more revenue (3) Increased quality service	(1) Growth and development of the industry	(1) Need to frame the policy	(1) Mental health management training made compulsory during induction

**7.4 Source line of Code:**

A tailor-made strategy for the management of mental health among the employees of the aviation industry needs to be developed. There is therefore a need for each airport to employ mental health practitioners in the industry.

**8. SUGGESTIONS TO IMPLEMENT RESEARCH ACTIVITIES ACCORDING TO PROPOSAL:**

- (1) Since stress management is especially important for improving service quality and for personal and professional growth, current research is required.
- (2) The researcher has to prepare a stress management module to regularly train aviation employees to minimize stress between them.
- (3) The hiring of mental health practitioners to handle the level of stress of workers of the aviation industry is also essential.

**9. CONCLUSION:**

Based on the review, it can be concluded that by developing and using a proper scale, the stress levels of the chosen respondents can be measured. If the stress level is greater among the respondents than a pre-defined level, the stress management programme shall be scheduled during the training provided to the aviation workers with special consideration on Mangalore International Airport.

**REFERENCES:**

- [1] Mitchell T. Jeffrey & J Leonhardt, (2010). Critical incident stress management (CISM): an effective peer support program for aviation industries. *International Journal of Applied Aviation Studies*, 10(1), 97-116.
- [2] Jou, R. C., Kuo, C. W., & Tang, M. L. (2013). A study of job stress and turnover tendency among air traffic controllers: The mediating effects of job satisfaction. *Transportation research part E: logistics and transportation review*, 57(1), 95-104.
- [3] Jamal Muhammad & Shanaaz Preena (1998). Job Stress and Employee Well-Being Among Airline Personnel in an Asian Developing Country. *International Journal of Stress Management*, 5(2), 121-127.
- [4] Alam Muhammad Aftab (2016). Techno-stress and productivity: Survey evidence from the aviation industry. *Journal of Air Transport Management*. 50(1), 62-70.
- [5] Omolayo Grace, Idowu, (2018). Effect of Work-Related Stress on Job Performance in Aviation Industry: *Dissertations Publishing*, 13806233 Kwara State University (Nigeria), 1-82.
- [6] Sun Kuo-shun, Hawjeng Chiou, (2011). Aviation ground crews: Occupational stresses and work performance: *African Journal of Business Management*, 5(7), 2865-2873.
- [7] Cho J, Choi H, Lee W. (2013). An Empirical Investigation of the Relationship Between Role Stressors, Emotional Exhaustion and Turnover Intention in the Airline Industry. *Asia Pacific Journal of Tourism Research*, 19(9), 1023-1043.
- [8] Narayanan Divya, Rajan R. Patil, (2012). An Assessment of Stress, Fatigue and Coping Strategies Among Airline Engineers and Pilots. *Public health Research series*, 1(1), 101-107.

- [9] Joseph Catherine, (2016). Stress Coping Strategies in Indian Military Pilots-Preliminary Observations. *International Journal of Aviation, Aeronautics, and Aerospace*, 3(4), 1-18.
- [10] Hajiyousefi Hossein, Hassan Asadi & Afsar Jafari, (2015). The Analysis of Occupational Stressors among Pilots; Exercise, as a strategy to Increase Flight safety. *International journal of Sport studies*, 5(12), 1263-1274.
- [11] Tarafdar Monideepa, Qiang Tu, and T.S. Ragu-Nathan (2011). Impact of Technostress on End-User Satisfaction and Performance. *Journal of Management Information Systems*, 27(3), 303–334.
- [12] Green Francis & Steven McIntosh (2001). The intensification of work in Europe. *Labour Economics*, 8(2), 291–308.
- [13] Sinclair-Desgagne Bernard & Antoine Soubeyran (2000). A Theory of Routines as Mindsavers. *Scientific Series*, (No. 2000s-52).
- [14] Fauscette Michael & Randy Perry (2014). Simplifying IT to Drive Better Business Outcomes and Improved ROI: Introducing the IT Complexity Index; *White Paper*, 2-14.
- [15] Rafferty Alannah E., Mark A. Griffin (2006). Perceptions of Organizational Change: A Stress and Coping Perspective. *Journal of Applied Psychology*, 91(5), 1154 –1162.
- [16] Roelofsen Paul (2002). The impact of office environments on employee performance: The design of the workplace as a strategy for productivity enhancement: *Journal of Facilities Management*, 1(3) 247-264.
- [17] Williams Stephen & Cary L. Cooper, (1998). Measuring Occupational Stress: Development of the Pressure Management Indicator. *Journal of Occupational Health Psychology*, 3(4), 306-321.
- [18] Sun K.S. & Y.S. Lee, (2010). A study of occupational stress of aviation ground crews. *IEEE International Conference on Industrial Engineering and Engineering Management*, 1401-1405.
- [19] Cuevas H. M. (2003). The Pilot Personality and Individual Differences in the Stress Respons: *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 47(9), 1092–1096.
- [20] Antwi, C. O., Fan, C. J., Aboagye, M. O., Brobbey, P., Jababu, Y., Affum-Osei, E., & Avornyo, P. (2019). Job demand stressors and employees' creativity: a within-person approach to dealing with hindrance and challenge stressors at the airport environment. *The Service Industries Journal*, 39(3-4), 250-278.
- [21] Chung Eun Kyoung, Yeseul Jung & Young Woo Sohn, (2017). A moderated mediation model of job stress, job satisfaction, and turnover intention for airport security screeners. *Safety Science*, 98(1), 89-97.
- [22] Day, A. L., Sibley, A., Scott, N., Tallon, J. M., & Ackroyd-Stolarz, S. (2009). Workplace risks and stressors as predictors of burnout: The moderating impact of job control and team efficacy. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, 26(1), 7-22.
- [23] Baeriswyl Sophie, Andreas Krause & Adrian Schwaninger (2016). Emotional Exhaustion and Job Satisfaction in Airport Security Officers – Work–Family Conflict as Mediator in the Job Demands–Resources Model. *Frontiers in Psychology*, 7(663), 1-13.
- [24] Black A. Deborah, John A. Black, Tharit Issarayangyun, Stephen E. Samuels (2007). Aircraft noise exposure and resident's stress and hypertension: A public health perspective for airport environmental management: *Journal of Air Transport Management*, 13(5), 264-276.
- [25] Chopra Prem (2009). Mental health and the workplace: Issues for developing countries. *International Journal of Mental Health Systems*, 3(1), 1-9.
- [26] Raja, U., Javed, Y., & Abbas, M. (2018). A time lagged study of burnout as a mediator in the relationship between workplace bullying and work–family conflict. *International journal of stress management*, 25(4), 377-390.

- [27] Everly George S., Raymond B. Flannery, Jeffrey T. Mitchell (2000). Critical Incident Stress Management (CISM): A Review of the Literature: *Aggression and Violent Behavior*, 5(1), 23–40.
- [28] Mitchell, J. T., & Hopkins, J. (1998). Critical Incident Stress Management: A new era in crisis intervention. *Traumatic Stress Points*, 6(12), 10-11.
- [29] Tang Au Due, Man-Ling Chang, Tsu-Hui Wang & Cheng-Hao Lai (2020). How to create genuine happiness for flight attendants: Effects of internal marketing and work-family interface. *Journal of Air Transport Management*, 87(1) 1-9.
- [30] Ren Xiaoni & Deborah Foster (2011) Women's experiences of work and family conflict in a Chinese airline: *Asia Pacific Business Review*, 17(3), 325-341.
- [31] Mas Aguirre Carla, Agustina Gallo, Alexander Ibarra, Jose Carlos Sanchez Garcia, (2018). The relation between work stress and burnout syndrome in a sample of Chilean air traffic controllers. *Ciencias Psicológicas*, 12(2), 239-248.
- [32] Balakrishnan C., D. Masthan, V. Chandra (2013). Employee Retention Through Employee Engagement - A Study at An Indian International Airport; *International Journal of Business and Management Invention*, 2(8), 9-16.
- [33] Wang Ying-Chun, Ning-Yu Yen (2013). A Study on the Relationship among Job Stress Sources, Stress Consequences, and Stress Coping Strategies of Airport Ramp Workers in Taiwan: *The Asian Conference on the Social Sciences 2013, Official Conference Proceedings*, 440-448.
- [34] Rao, G. P., Moinuddin, K., Sai, P. G., Sarma, E., Sarma, A., & Rao, P. S. (2008). A study of stress and psychiatric morbidity in the central industrial security force. *Indian Journal of Psychological Medicine*, 30(1), 39-47.
- [35] Han, H., Olya, H. G., Untaru, E. N., Ispas, A., Kim, J. J., & Kim, W. (2020). Impact of airport green atmospherics on mental health value, image, and loyalty among visitors and workers. *Business Strategy and the Environment*, 29(3), 1186-1198.
- [36] Chan P. C. Albert, Y. Yang, Michael C.H. Yam, Edmond W.M. Lam, J.Y Hu (2016). Factors affecting airport apron workers' preference on cooling vests. *Performance Enhancement & Health*, 5(1) 17-23.
- [37] Schreckenber Dirk, Markus Meis, Cara Kahl, Christin Peschel & Thomas Eikmann (2010) Aircraft Noise and Quality of Life around Frankfurt Airport. *International journal of environmental research and public health*, 7(9), 3382-3405.
- [38] Bharathi, T., & Gupta, K. S. (2017). Job stress and productivity: A conceptual framework. *International Journal of Emerging Research in Management & Technology*, 6(8), 393–398.
- [39] Boivin D.B. & P. Boudreau (2014). Impacts of shift work on sleep and circadian rhythms: *Pathologie Biologie*, 62(95), 292–301.
- [40] Costa Giovanni, (1997). The Problem: Shiftwork: *Chronobiology International*, 14(2), 89-98.
- [41] Akerstedt Torbjorn (2003). Shift work and disturbed sleep/wakefulness: *Occupational Medicine*, 53(2), 89–94.
- [42] Czeisler, C. A., Weitzman, E., Moore-Ede, M. C., Zimmerman, J. C., & Knauer, R. S. (1980). Human sleep: its duration and organization depend on its circadian phase. *Science*, 210(4475), 1264-1267.
- [43] Folkard Simon and Philip Tucker, (2003). Shift work, safety, and productivity: *Occupational Medicine*, 53(2), 95–101.
- [44] Koller M, Kundi M, Stidl H-G, Zidek T, Haider M, (1993). Personal light dosimetry in permanent night and day workers: *Chronobiology International*, 10(2), 143-155.

- [45] Akerstedt Torbjorn, Goran Kecklun, & Anders Knutsson, (1991). Spectral analysis of sleep electroencephalography in rotating three-shift work: *Scand J Work Environ Health*, 17(5), 330–336.
- [46] Wright Jr. K. P., Richard K. Bogan, & James K. Wyatt (2013). Shift work and the assessment and management of shift work disorder (SWD): *Sleep medicine reviews*, 17(1), 41-54.
- [47] Ashforth, B. E., & Ronald H. Humphrey (1993). Emotional labor in service roles: The influence of identity. *Academy of Management Review*, 18(1), 88–115.
- [48] Wang Ta-Chung, Lu-Han Chuang (2014). Psychological and physiological fatigue variation and fatigue factors in aircraft line maintenance crews. *International Journal of Industrial Ergonomics*, 44(1), 107-113.
- [49] Waddar S. Mahadevi (2012). Emotional Labour and Organizational Role Stress: A Study of Aircraft Employees: *Global Business Review*, 13(3), 383-392.
- [50] Tiffin, Joseph & Weld Prevratil (1956). Industrial psychology in the aircraft industry. *American Psychologist*, 11 (5), 246–248.
- [51] Brown M. Norman & Charles R. Moren (2003). Background Emotional Dynamics of Crew Resource Management: Shame Emotions and Coping Responses. *The International Journal of Aviation Psychology*, 13(3), 269-286.
- [52] Avis Jillian (2012). The Social and Psychological Aspects Behind Flight: *Undergraduate Sociology Journal*, 1(1), 1-12.
- [53] O'Hagan Anna Donnla, Issartel J, Nevill A & Warrington G. (2017) Flying into Depression: Pilot's Sleep and Fatigue Experiences Can Explain Differences in Perceived Depression and Anxiety Associated with Duty Hours. *Workplace Health & Safety*, 65(3), 109117.
- [54] Vine J. Samuel, Liis Uiga, Aureliu Lavrica, Lee J. Moore, Krasimira Tsaneva-Atanasovad and Mark R. Wilson (2015). Individual reactions to stress predict performance during a critical aviation incident; *Anxiety, Stress & Coping*, 28(4), 467–477.
- [55] Li Tianhua, Brooke E. Wheeler Debbie S. Carstens (2020). Examining the Impact of Overhearing In-Flight Cell - Phone Calls on Passenger Safety; *International Journal of Aviation, Aeronautics, and Aerospace*, 7(2), 1-15.
- [56] Osunwusi Adeyinka Olumuyiwa (2020). Occupational Radiation Exposures in Aviation: Air Traffic Safety Systems Considerations. *International Journal of Aviation, Aeronautics, and Aerospace*, 7(2), 1-28.
- [57] Misra Shlok (2020). Analyzing the Threats of the Failure of Visual Awareness during a Visual Approach for Transport Category Aircraft. *International Journal of Aviation, Aeronautics, and Aerospace*, 7(2), 1-28.
- [58] Bennett A. Simon (2003). Flight crew stress and fatigue in low-cost commercial air operations - an appraisal: *Int. J. Risk Assessment and Management*, 4(2/3), 207-231.
- [59] Douglas Stephanie & Linda M. Pittenger (2020). Adversity in Aviation: Understanding Resilience in the Workplace for Female Pilots. *The International Journal of Aerospace Psychology*, 1-15.
- [60] Nosker Lee Jennifer, Allen Cornelius, Maureen Lassen, Tahlia Bragg & Jenn Killeen (2020). Fatigue in Aeromedicine: A Validity Study of the Flight Risk Assessment; *The International Journal of Aerospace Psychology*, 30(1-2), 69-75.
- [61] van den Berg, M. J., Signal, T. L., & Gander, P. H. (2019). Perceived workload is associated with cabin crew fatigue on ultra-long range flights. *The International Journal of Aerospace Psychology*, 29(3-4), 74-85.
- [62] Wilson Glenn F. (2002). An Analysis of Mental Workload in Pilots During Flight Using Multiple Psychophysiological Measures. *International Journal of Aviation Psychology*, 12(1), 3-18.

- [63] Jaiswal Kamal., S. Dalkilic, S. Verma and B. Singh, (2019). Aviation MRO: A Case Study of Social Psychology Elements of Human Factor Affecting Work Performance, *Advances in Science and Engineering Technology International Conferences (ASET)*, 1-10.
- [64] Davison Lisa, Clare Littleford & Tim Ryley (2014). Air travel attitudes and behaviours: The development of environment-based segments. *Journal of Air Transport Management*, 36(1), 13-22.
- [65] Leea Seungyoung & Jin Ki Kim (2018). Factors contributing to the risk of airline pilot fatigue. *Journal of Air Transport Management* 67(1), 197–207.
- [66] Arendt Josephine (2010). Shift work: coping with the biological clock. *Occupational Medicine*, 60(1), 10–20.
- [67] Aithal P. S. (2016). Study on ABCD Analysis Technique for Business Models, business strategies, Operating Concepts & Business Systems. *International Journal in Management and Social Science*, 4(1), 98-115.
- [68] Aithal, P. S., Shailashree, V., & Kumar, P. M. (2015). A new ABCD technique to analyze business models & concepts. *International Journal of Management, IT and Engineering*, 5(4), 409-423.
- [69] Aithal, P. S. (2017). ABCD Analysis as Research Methodology in Company Case Studies. *International Journal of Management, Technology, and Social Sciences (IJMTS)*, 2(2), 40-54.
- [70] Kumari Pavithra, & Aithal, P. S. (2020). Growth & Fate Analysis of Mangalore International Airport – A Case Study. *International Journal of Case Studies in Business, IT, and Education (IJCSBE)*, 4(2), 71-85.

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