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ASSESING PERFORMANCE MANAGEMENT PRACTICE ON FLIGHT SAFETY: THE CASE OF ETHIOPIAN AIRLINES FLIGHT OPERATIONS

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS DEGREE IN BUSINESS LEADERSHIP (MBL)

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Approval Sheet

This is to certify that the thesis entitles *"**Assessing Performance Management Practice on Flight Safety: The case of Ethiopian Airlines Flight Operations"**,* submitted to Addis Ababa University in partial fulfillment of the requirements for the award of the Degree of Master of Business Leadership (MBL) is a work carried out by Kassahun Amenu Tiyiti complies the regulations of the university and meets accepted standards.

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Declaration

I declare that the project entitled “Assessing performance management practice on flight safety: the case of Ethiopian Airlines Flight Operations” is my original work and all the sources of materials used for the work have been duly acknowledge to the best of my knowledge.

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ABBREVIATIONS AND ACRONYMS

ET	Ethiopian Airlines
HF	Human Factor
PIC	Pilot in Command
PD	Practical Drift
PMP	Performance Management Practice
PMS	Performance Management system
SIC	Second in Command
SPSS	Statistical package for social sciences
PES	Performance Evaluation System
Captain	A pilot in charge of a flight or Pilot in command
First Officer	A pilot second in command of the airplane also called co-pilot
KSA	Knowledge, Skill and Attitude

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Abstract

The aim of this study was to assess and describe performance management practice on flight safety. The study was conducted at Ethiopian Airlines Flight Operations department. It was designed using descriptive research to use both quantitative and qualitative data. Data was collected primarily through survey questionnaires and analyzed descriptively using SPSS in conjunction with respondent's opinions and reviewed literature. The results of the analysis were presented using percentage and frequency charts, bars and tables. Respondents mean and standard deviations were employed to interpret the data.

The major findings of the research indicated that the performance management practice shows it has a positive relation with flight safety. Higher percentages of flight crews believed that they clearly understood the purpose of performance management. PMPs have clarity among the crews. The respondents response on Meaningfulness of PMS shows neutral and disagreed on Specificity, Acceptance and Fairness, and Openness of PMPs. They also responded PMPs lack safety focus and they feel that they are pressured to accomplish tasks and forced to accept duties while fatigued, which compromise safety, to satisfy performance evaluation requirements. Lastly, the research found that PMPs has no effect on improving flight safety.

Finally, based on the study findings it was concluded and recommended that features of performance management system has to be revised so that it becomes strong in influencing the employees' performance and safety. Accordingly, it was recommended ET Flight Operations has to improve on meaningfulness, specificity, acceptance and fairness, openness and to give due attention on safety during PMPs. It was also recommended that more research has to be done on the area to identify more factors that influence safety and performance of flight crews.

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Chapter One

Introduction

1.1 Background of the Study

Airline business is a safety critical business where incidents and accidents can be catastrophe. Once accidents or incidents happened, it attracts global attention and create negative image on the airline reputation and economy. Despite the implementation of safety management system and the use of advanced technologies, accidents and incidents still occur in the aviation industry (IATA, 2019, p.6). According to IATA Safety Report (2019), there were 53 accidents in 2018, which resulted in 523 fatalities. The report indicates that while frequency of accidents decreased over the past decade, the number of fatalities remained stable. This necessitates the implementation of effective performance management system in airline industries. “Effective performance management practice have been identified as the critical components of flight safety…Performance management can help identify potential safety hazards, monitor employee performance, and provide feedback to employees to improve their performance.” (Smith, and Wiegmann, 2011, p.465). According to ICAO (2013) Safety Manual, performance management is a critical component of safety management system. Therefore, good performance management practices are very important to identify potential safety hazards, monitor employee performance and provide feedback to employees to improve their performance.

Performance management system is a way of improving employee productivity and efficiency in particular and the organization in general. It improve employee’s competency. Modern businesses rely on their employees' productivity and competitiveness, says Aguinis (2009). According to Aguinis (2009), a performance management system is a continual process for recognizing, evaluating, and improving an individual's or a team's performance while also coordinating it with the strategic objectives of the company. When it comes to aviation industry, performance management practices aid organizations to develop safety culture among employees. As the proper implementation of performance management system has paramount importance, its improper implementation has its own consequence. Poorly implemented

performance management system create dissatisfaction, resentment and result in employee's inefficiency and turnover (Smither & London, 2009).

There are arguments surrounding the effectiveness of performance management practices on flight safety. Some claim that performance management system can improve flight safety which makes sure that flight crews have the required skills, knowledge and attitudes to carry out their duties safely. Others argue that performance management practice can lead to concentration on achieving objectives at the expense of safety, fostering a culture that values efficiency at the expense of safety. According Parker & Lawrie (2009), PMPs can lead to an overemphasis on productivity at the expense of safety. "Performance management can also have unintended consequences on safety, particularly when performance targets are set too high or unrealistic. In this situation, employees may feel pressure to cut corners or to take risks in order to meet the targets, which can increase the likelihood of errors and accidents." (weigmann and Shappell, 2001, p16). Reason (2008) also argue that performance targets can become an end by themselves. In some instances, the targets may be seen as the means by which success is achieved. But in others, the target becomes the actual goals, and any means to reach them are considered legitimate. This can lead to a focus on meeting targets at the expense of safety.

Ethiopian Airlines, the biggest airline in Africa, has adopted performance management system and safety management system in order to continually improve flight safety. Hailemariam (2018), found in his study that Ethiopian Airlines' safety management system is aligned with international safety standards and includes effective safety performance management practices. However, there is lack of understanding regarding how performance management practices affect safety in the airline in general. Therefore, taking account the scholars' debate, this paper intends to assess the performance management practice effect on flight safety.

1.2 Statement of the Problem

According to literatures, today's technological advancement has created aircraft systems more reliable and majority of accidents or incidents happen due to human error. Although humans have enough flying skills and knowledge, there are factors that detract them from this skill. "In the early days of flight, approximately 80% of accidents were caused by the machine and 20% error was caused by human error. Today that statistics has reversed. Approximately 80% of airplane accidents are due to human error and 20% are due to machine (equipment) failure."

(www.boeing.com/commercial/aeromagazine/articles/qtr_2_07/article_03 _2.html). This is attributed to human factor which occurs for a variety of reasons. International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA) all suggest that airlines to evaluate pilot performances rationally for advanced training and management. However, even if there is a wide range of performance management practices in aviation industry, the concern remains about improving flight safety. "Despite the adoption of a range of performance management practices, safety remains a major challenge for aviation industry" (Helmreich, 2017, p1). According to Taneja & Ranganathan (2020) PMPs can improve employee performance and organizational outcomes, but their impact on safety is less clear. Ethiopian Airlines has established performance management system to improve its organization and employee performance and safety over time. However, this performance management practice on safety is not well understood in the context of Ethiopian Airlines Flight Operations. Therefore, the aim of this research paper is to assess the effectiveness performance management practice of Ethiopian Airlines on safety of flight.

1.3 Research Questions

The intent of the study is to analyze the below research questions.

1. What's the current performance management practice of ET Flight Operations for pilots?
2. What is the relationship between performance management practice and safety of a flight in Ethiopian Airlines?

1.4 Objectives of the study

1.4.1 General objectives

The general objective of the study was to assess the current performance management practice of Ethiopian Airlines Flight Operation and its effect on safety of a flight.

1.4.2 Specific objectives

The following points are specific objectives of the research paper.

1. To evaluate the practice of performance management system of ET Flight Operation.
2. To determine the relationship between performance management practice and flight safety in ET.

1.5 Significance of the study

The research paper will contribute to knowledge on the effect of performance management practices on safety of flight in airline industry. It will also help Ethiopian Airlines to recognize areas of performance management practice parts that needs improvement in order to improve performance management practice and flight safety.

1.6 Scope of the study

The scope of the study area is limited to performance management practices of Ethiopian Airlines Flight Operations on flight safety. It is bounded to assesses only selected performance management practices among the best performance management practices identified by Aguinis (2009, p. 29-34) and different scholars. These are Clarity, Meaningfulness, Specificity, Acceptability and Fairness, and Openness, and Lack of Safety Focus. They are considered for the study due to the fact that their discrepancies observed in the current performance management practice of Ethiopian Airlines Flight Operations. Besides, they are deemed important due to their impact on safety of flight.

1.7 Limitation of the study

The limitations of the study include time constraints and availability of reference materials. It is also restricted to how Ethiopian Airlines flight crews see the actual performance management practice that the airline has put into place. Therefore, summary of the study solely based on ET flight crews perceptions of the current performance management practice rather than the intended performance management system in place by the airline. Primary data was gathered from individual samples of flight crew. As a result, the conclusions are only applicable to the organization that is the subject of the study.

Chapter Two

Related Review of Literature

2.1 Introduction

In the airline industry, performance management is a crucial component of ensuring efficiency and flight safety. Effective performance management systems is a way of improving organization effectiveness and can help to identify and address potential safety risks and hazards while promoting and reinforcing safe flight behaviors and procedures. Armstrong and Baron (2021), performance management is the process of improving organizational effectiveness by aligning the performance of people with the strategic objectives of the organization. This literature review seeks to present overview of performance management practice and their effect on flight safety, and also to review pertinent studies on performance management practices and flight safety in the airline industry.

2.2 Performance Management System (PMS)

Performance management is the process of management that aligns organization resources, employees and systems to attain organizational and individual goals efficiently and effectively. PMS is a set of processes and practices designed to link individual and team objectives to the organization's overall mission and strategy, to monitor and evaluate performance against those objectives, and to provide feedback to employees and their performance" (Armsrtrong and Baron, 2021, p.1). It includes a set of practices that are molded to improve employee performance, monitor progress towards goals, and provide feedback to employees.

Components of PMS

1) **Goal setting:** goal setting the process of setting clear and specific goals that are aligned with the organization's mission and strategy.
2) **Performance measurement:** it involves designing measuring metrics and performance indicators to measure progress towards goals.
3) **Performance feedback:** performance feedback incorporates providing regular feedback to employees on their performance, including strengths and areas for improvement.
4) **Performance appraisal**: performance appraisal includes evaluating employee performance at a regular interval.

5) **Performance improvement:** it includes identifying areas that need improvement and designing plans to address them.

2.3 Performance Management Practice (PMP)

Performance management practice is the practices used to monitor and enhance employee performance in organization. According to Kumar and Bhatia (2018), performance management practices (PMPs) are a means and tools used to monitor employee performance and enhance corporate outcomes. PMPs are part of performance management system. According to DeNisi (2000), Performance management is defined as a range of practices an organization engages in to enhance the performance of a target person or group with the ultimate purpose of improving organizational performance.

In the context of the aviation industry, performance management practices are essential for assuring flight safety while meeting performance targets set by the organization. Taneja and Ranganathan (2020), explains PMPs as "a set of systematic and continuous activities that are designed to monitor and improve the performance of aviation personnel and organizational units responsible for ensuring safe and efficient operations." Salas et al. (2008), further iterates "Effective performance management practices can promote safe behaviors and procedures, while identifying and correcting potential hazards and risks" (p. 197).

2.3.1 Performance Management Practice Key Concepts

The following are some key concepts regarding the performance management practices used in the aviation sector:

1. Performance expectations

The standards and objectives that employees are expected to accomplish in organizations are referred to as performance expectations. According to Taneja and Ranganathan (2020), clear and specific performance expectations are essential for enhancing safety performance in the aviation industry.

2. Feedback

The information given to employees regarding their performance (KPI) result is referred to as feedback. Positive behavior can be reinforced and areas for improvement can be identified using

feedback mechanism. According to Kumar and Bhatia (2018), feedback is a critical component of PMPs in the aviation industry and can be used to enhance safety and performance.

3. Training

Providing employees the knowledge and skills they need to effectively carry out their responsibilities is referred to as training. According to Helmreich, Merritt, and Wilhelm (1999), training is an essential component of PMPs in the aviation industry, particularly with regard to crew resource management (CRM) training.

4. Performance measurement

Performance measurement is the practice of evaluating an employee's performance in relation to predetermined standards and objectives. According to Li and Huang (2021), well-defined metrics and performance measures are essential for assessing the effectiveness of safety management systems in the aviation industry.

In conclusion, Aviation personnel and organizational units are accountable for maintaining safe and effective operations, therefore performance management methods are a set of systematic and ongoing activities that are designed to monitor and enhance performance and safety.

2.3.2 Characteristics Best Performance Management System

Organization success doesn't happen by chance it needs commitment and hard work by stakeholders. Good leadership that implements thorough management practices is important for the success of organizations.

Below are characteristics of best performance management practices that are identified by Aguinis (2009, p. 29-34) are discussed below.

1. **Strategic congruence**

Performance management system should be in congruent with the organizations and each unit's strategy. That means individual goals must be aligned with the unit and organization goals.

2. **Thoroughness**

Performance management system should be thorough in four angles.

i. All employees including managers should be evaluated.

ii. All major job responsibilities should be evaluated.
iii. The evaluation must include the entire review period.
iv. Feedback should be given on positive performance aspects and those that need improvement.

3. Practicality

Performance management system should be practical that it is not complex, time consuming and expensive. The benefits of using it should outweigh the cost of implementing it. When performance management is simple and easy, it helps in making sound decisions.

4. Meaningfulness

Meaningfulness of performance management system is important in many ways.

i. The evaluation standards conducted for each **job considered must be relevant and important.** Evaluating irrelevant performance indicators for the sake of formality or office politics irritate employees and create dissatisfaction.
ii. Performance evaluation must emphasize only those functions that are under the control of the employees. Taking performance indicators that are not under the control of employees make the system meaningless.
iii. Performance evaluation must take place at regular intervals. Informal quarterly reviews are recommended.
iv. The system should provide for the continuing skill and development of evaluators.
v. The evaluation result should be used for important administrative purpose.

5. Specificity

Performance management system should provide guidance detailing what is expected of them and how they can meet these expectations. A good performance management system is specific in nature.

6. Identification of effective and ineffective performance

Identifying effective and ineffective performance of employees is important when measuring performance of employees. The system should identify effective behaviors and results from ineffective one.

7. **Reliability**

Performance management should be consistent and free of error. It should be reliable to be accepted among employees.

8. **Validity**

Performance management system should include all important aspects and doesn't include irrelevant performance aspects. The measurement shouldn't include and asses unimportant and outside the control of employees.

9. **Acceptability and fairness**

Performance management system should be fair and accepted by all participating employees. As the perception of fairness is subjective it should encompass the following four basic components.

a. Distributive justice: the perception of employees towards evaluations received relative to the performed work.
b. Procedural justice: perception of employees towards the procedures used to measure performance and how the rating is linked with rewards.
c. Interpersonal justice: the perception towards the quality of performance system design and implementation.
d. Informational justice: the perception towards fairness about performance goals and expectations, feedback received, and information given to justify administrative decisions.

10. **Inclusiveness**

Performance management system should contain feedbacks from different sources in continual basis. The performance evaluation system must involve employees in designing performance management evaluation system. It should consider the concerns of all employees affected by the system. In addition, performance evaluation of employees should be gathered from themselves before appraisal is performed. In general, it should include in planning and implementing the system.

11. **Openness**

Openness involves a continual feedback communication between the employee and supervisor. First, performance feedback is provided based on the appraisal. This helps employees informed

the continuously about the quality of their performance. Second, appraisal meeting should be conducted based in two way communications that allows employees deliver inputs without any pressure. Third, the standards should have clarity and performed in a continuous basis. Finally, the communications should be transparent, honest and factual.

12. Correct-ability

No system is immune to errors so that there should be a means of correcting errors committed during evaluation system. When employees feel that the performance evaluation doesn't represent their actual performance, there should be a mechanism through which evaluation is reconsidered and corrective action is taken as required.

13. Standardization

To make performance evaluation consistent across employees and time, the performance management should be standardized.

14. Ethicality

Performance management system should be ethical. There should not be self-interest and biasness during evaluation process. Privacy of employees should also be respected.

In summary, good performance characteristics selected for the study are: Clarity or strategic congruence, meaningfulness, Specificity, Acceptability and Fairness, and Openness. They are considered for the study due to the fact that their discrepancies are observed in the current performance management system of Ethiopian Airlines Flight Operations. Besides, they are deemed important due to their impact on safety of flight.

2.3.3 Impact of Performance Management Practices on Flight Safety

According to scholars, effective performance management procedures can significantly improve flight safety in the aviation industry. For instance, Salas et al. (2008) discovered a relationship between improved safety outcomes in airline operations and performance management approaches including crew resource management (CRM) training and error management training. Similar findings were made by Helmreich and Merritt (1998), who discovered that efficient safety management systems, such as performance management practices, were linked to lower accident rates in the aviation sector. According to Helmreich and Merritt (1998), "Effective safety management practices, including performance management practices, can help

to reduce the likelihood of accidents and improve safety outcomes in the aviation industry" (p. 194).

2.3.4 Criteria for Assessing Performance Management Practices on Flight Safety

In order to improve safety and guaranteed safe and effective operation, performance management practices (PMPs) metrics must be developed for the aviation sector. There are numerous principles for measuring the effectiveness of performance management practices in promoting flight safety in the aviation industry. With reference to Aguinis (2009) PMS best practices, and aviation performance management key concept discussed by different scholars, the following PMPs criteria's that can affect flight safety in the aviation industry is discussed below.

1. Clarity

Clarity in performance management is the extent to which performance expectations and goals are clearly communicated and understood by employees. Alignment of performance management practices with the organizations strategic objectives and individual targets should be aligned with the strategic objectives of the organization. According to Armstrong and Baron (2021), "Performance management practices should be aligned with the strategic objectives of the organization to ensure that safety goals and metrics are integrated into the overall business strategy of the airline" (p. 101).

Clear performance expectations ensure flight crews to be aware of what is expected from them. This helps them to take proper actions towards accomplishing performance targets. According to Tanega & Ranganathan (2020), clear performance expectations and well-defined goals are critical for enhancing safety performance in the aviation.

2. Meaningfulness

The degree to which performance management evaluation has meaning to employees is referred as meaningfulness. How well performance evaluation and rewards are relevant to flight crews. Meaningful performance expectations are important to keep employees motivated to do well and are ready to comply with standard operating procedures and safety conformance. "Meaningful performance expectations are essential for ensuring that employees are motivated to perform well and are willing to comply with safety procedures and regulations" (Lin, Lin, & Lin, 2021).

3. Specificity

The extent to which performance expectations and targets are defined and measured is called specificity. "Specific performance goals and well-defined metrics are essential for assessing the effectiveness of safety management systems in the aviation industry" (Li & Huang, 2021). Specific performance targets are important to make sure that flight crews have well understanding of what's expected of them so that they make every effort to attain the desired result.

4. Acceptance and fairness

Acceptance and fairness means the perception of flight crews towards performance management practices as reasonable and fair. According to Lin, Lin, & Lin, (2021), fairness and transparency in performance management practices are essential for enhancing safety culture and improving safety performance in the aviation industry. According to Armstrong and Baron (2021), "Performance management practices should be perceived as fair and acceptable by employees, with clear communication of safety goals and metrics and objective and measurable criteria for performance evaluation and rewards" (p. 102). Therefore, it is essential to motivate flight crews to operate flights well following the safety standards and regulation.

5. Openness

Openness is a communication procedure to which flight crews perceive comfortable in communicating with immediate supervisor. It also helps employees feel comfortable reporting safety incidents and raising safety concerns without fear of retribution. In the aviation industry, openness is essential for ensuring that safety incidents are reported and addressed promptly to prevent future accidents. "Openness and a willingness to learn from safety incidents are critical for enhancing safety culture and improving safety performance in the aviation industry" (Salas, Maurino, & Burke, 2015).

6. Lack of safety focus

A lack of safety focus means the extent to which performance measurement practices gives priority for performance target over safety. According to Helmreich and Merritt (1998), "Performance management practices should prioritize safety above other performance objectives, with equal or greater weight given to safety goals and metrics and separate evaluation and

recognition of safety-related performance" (p. 194). Taneja & Ranganathan (2020), a lack of safety focus in performance management practices can lead to a decline in safety performance in the aviation industry. This fosters a culture that prioritizes productivity over safety, which can increase the risk of accidents.

2.4 Flight Safety

2.4.1 Definition of Safety in Aviation Context

Safety management is a proactive way to pursue the mitigation of safety risks and improve safety performance (ICAO, 2018). According to ICAO and different manuals, safety is the prevention of unwanted events or a protection against unwanted outcomes.

The objective of safety management in the aviation industry is to prevent human injury or loss of life, and to avoid damage to the environment and to property (www. skybrary.aero/articles/safety-management-system). Safety management used by airline organizations to take counter measures before incidents or accidents happens. Aviation industries must devote resources to continually improve safety employing threat and error management. This section defines safety and describes the safety concept.

2.4.2 History of Safety Management System

“From the point of view of technology design, early space exploration in 1950s had built on the “fly-fix-fly” approach to aircraft design safety then prevalent in aviation: fly the aircraft, fix aircraft design problems after a safety mishap occurred, and continue flying the “fixed” aircraft until the next mishap, when the “fix-fly-fix” cycle would be reinitiated thus engaging in a vicious circle of sorts.” (Maurino, 2017, p. 7)

According to Maurino (2017), during early times design of aircraft systems improved after accidents or incidents claim human life and or caused damage to properties. This attitude has shifted progressively to today’s philosophy of total system era.

“The evolution of safety management within aviation has occurred in four stages, including: Technical Era; Human Factors Era; Organizational Era; and Total System Era.” (ICAO 2018)

According to Maurino (2017), the philosophies of fly the airplane then improve design shifted to human factor era where human involvement in the system got attention. Even if the airplane systems function properly and sound in its design, human mishandling of technology causes the

system inefficient. Therefore, human factors got center attention and optimization of relationship between human and machine is required.

Human factor is an approach to deal human behaviors related to performance of human operations. “It is a scientific approach that deals with what people do in operational contexts, and aims at optimizing operational human performance contributing to the safety and efficiency of aviation operations. Physiology of human factor deals with fatigue, stress, noise, temperature, pressure, vibration and similar human performance related considerations that may affect human operations. Psychology human factor branches out into social, organizational and cognitive psychology.” (Maurino, 2017, p. 7-9)

Safety used to be seen as free from incidents or accidents but now it is shifted to the concept of the lack of high severity with low frequency events.

2.4.3 Safety Management System

Safety management system is managing safety with respect to aircraft systems, human factors and business management. It encompasses identifying and assessing risks associated with system, procedure or any organization function then it will be mitigated satisfactorily. “A safety management system (SMS) is a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.” (ICAO, 2021). According to Reason (1997), SMS can help to identify and mitigate potential hazards before they lead to accidents.

There are two safety management system concepts: compliance based safety and performance based safety. Compliance and performance play a role in safety management system. “Compliance based safety relies on conforming to established requirements regarding personnel, technology, equipment and procedures as conduit to safety, and on administrative controls - inspection and audits - to provide confidence that established requirements are met, thus ensuring safety.” (Maurino, 2017, p. 11) Compliance based safety depends on complying the standards and procedures established in order to safeguard safety. It depends on system safety as a framework.

“Performance based safety is achieved by actual demonstration of safety. Under performance-based safety, the real safety concern is the effective management during operations of situations

unforeseen by planning, rather than non-compliances in and by themselves." (Maurino, 2017, p.13).Performance based safety support the actual monitoring of operations to counter unplanned encounters. Performance based safety is achieved during actual operations of flight while compliance based safety is accomplished during flight planning. Therefore, flight should be planned with the expectation of compliance during flight.

Maurino (2017) briefly explains, PD as an operational departure from the planned operational conditions. It is a slow drift between practice and performance while accomplishing flight operations. It shows why drift occurs during both conformance and performance based safety management. Practical drift occurs by line personnel's knowingly or unknowingly in order to accomplish tasks easily or due to external pressure on them. The effectiveness of work might increase by drifting from the normal performance based safety but in the long run it develops a culture of doing things without compliance to the standard operation procedures. But, accomplishing small tasks would create big vacuum in the overall safety.

2.4.4 Factors Affecting Performance and Safety

Performances of human beings are affected due to by many factors. Airliners invest their resource to train their employees in order to attain higher performance output in terms of productivity and safety (Maurino, 2017). Simulator trainings are conducted regularly to make flight crew proficient in the skill required to operate aircraft. However, having the necessary silks and knowledge human beings can make error due to mental and physical state during flight operation.

According to Salas, Maurino, and Burke (2010), human factors refer to the interplay between human performance and the surrounding environment, including the physical, organizational, and social factors that can influence performance. Human factors can impact pilot decision-making, communication, and situational awareness, all of which can have significant implications for flight safety. Humans can be fatigued physically and mentally due many factors. The working environment can put stress on humans due to reasons like noise, management pressure and working environments. A fatigued and stresses person can commit errors while accomplishing his/her duties which could have detrimental effect on safety. There are many human factors that have impact on safety but in this study stress and fatigue is considered for

their assessment on safety. According to Maurino (2017), among factors that that have greater impact on human performance and safety were discussed as follows.

1) Stress

"Stress is a state of human beings physical, mental, or emotional strain due to some external or internal strain." (skybrary.aero/articles/safety-management-system). Stress in a controlled way is useful to accomplish tasks but excessive and uncontrolled stress could lead to undesired results. There stressors which leads to stress. Stressors are different and unique which depends on the situation in which the individual exists. It could be physical fatigue, emotional upset and reactive situations in daily life. This emotional upset may be a result of in appropriate performance evaluation and KPI result.

2) **Fatigue**

Fatigue is physical and mental tiredness beyond the normal limit. It can be physiological or mental fatigue.

Physical fatigue is the weariness of the whole body beyond the limit while mental fatigue is decrease of attention and ability to work complex tasks or simple tasks with the usual speed. Loss of sleep and spending long hours on duty are some of the examples. Loss of sleep disturbs circadian rhythm which is associated with fatigue.

2.5 Empirical Review

There are limitations of research studies on the area of flight crew performance management practice and flight safety. "There is lack of empirical research that specifically examines the impact of PMPs on flight safety" (Li &Huang, 2021, p.1). However, some of the studies that are conducted on performance management practice are reviewed as follows.

According to the study conducted on Chinese aviation industries by Li and Huang (2021), PMPs, including performance measurement and employee involvement, were positively related to flight safety. The study was conducted to investigate the relationship between safety management system, PMPs, and flight safety in Chinese aviation industries. In the same manner Kumar and Bhatia (2018) reviewed literatures on PMPs in the aviation industries. They identified key PMPs that include goal setting, performance feedback, training, and employee involvement. In the

above studies performance management practice plays roles in achieving safety in flight operations.

The relation between safety management system and safety was also studied by different scholars. Lin, Lin, and Lin (2021), studied the impact of safety management system on aviation safety. It was found out that PMPs play a critical role in enhancing safety culture and improving safety performance in aviation. Goal setting, feedback and training were positively related safety performance. In Ethiopian Airlines context, there are studies which are conducted on safety management system of the company. Abeyratne (2017) examined the safety culture and management practices of Ethiopian Airlines, including safety performance management practices. The study presented that ET has a strong safety culture and effective safety management practices in place, including regular safety training and education for employees. Assefa (2016) presented a summary of the advantages and difficulties faced by Ethiopian Airlines, emphasizing ET safety management practices. According to the research, ET has an impeccable safety track and has extensively engaged into safety management systems. Ethiopian Airlines' safety management system, as well as their safety performance management procedures, has been assessed by Gebre (2017). In accordance with the study's findings, Ethiopian Airlines has a thorough and efficient safety management system in place, which includes frequent safety performance monitoring and reporting.

Hailemariam (2018) assessed Ethiopian Airlines' safety management system as well as its methods for safety performance management. The research revealed that Ethiopian Airlines' safety management system adheres to global safety norms and uses good safety performance management techniques. Tadesse (2016) with a focus on Ethiopian Airlines' safety performance management practices assessed the effect of performance management on airline safety. The research discovered that Ethiopian Airlines' safety performance management practices have contributed to their strong safety record and that their criteria for measuring safety performance are precise and in line with safety objectives.

In summary, these investigations indicate that PMPs has positive relation with flight safety. And also, it shows that Ethiopian Airlines has sound safety performance management procedures in place, such as consistent safety education and training, extensive safety management systems,

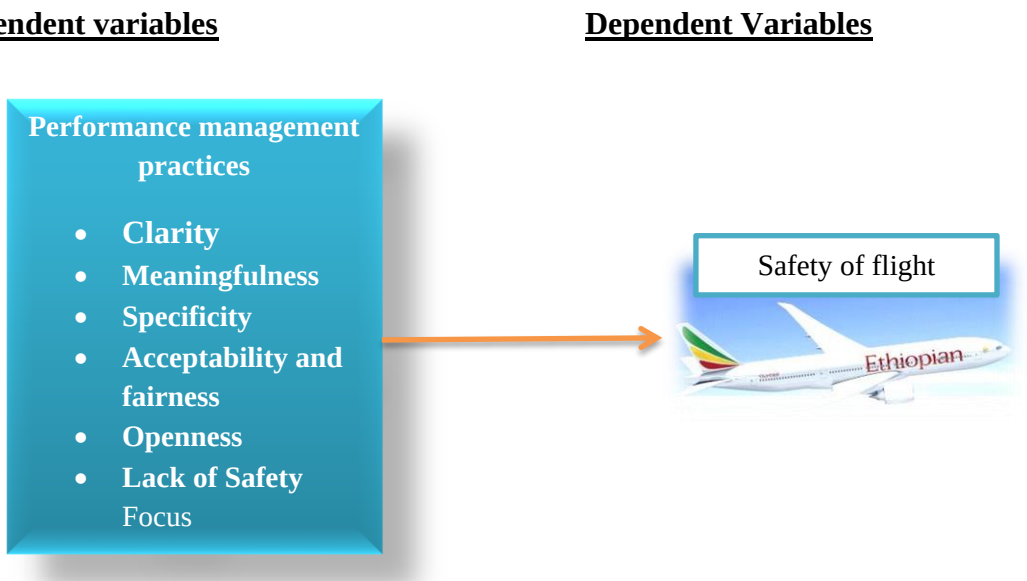
and precise safety performance measures. These procedures have helped Ethiopian Airlines maintain a high level of safety and foster a supportive safety culture.

In conclusion, the above studies presented the importance of performance management practice in ensuring flight safety in airline industries. However there are studies which addressed the PMPs of performance management system in aviation sector, it was found that there is a gap which has not addressed performance management practice of PMS on safety of flight in Ethiopian Airlines context.

2.6 Conceptual Framework

Performance management is employed to increase organization productivity through employee motivation using rewards. Well designed and implemented performance management system helps organizations to attain their objectives while improper performance management practice leads to unsafe daily activities that affect safety of a flight. Performance management practice is treated as independent variables which has an impact on the dependent variables, safety of a flight. Independent variables are those variables that arise due to performance evaluation practices. To attain a higher KPI result performance evaluation system requires pilots to use best fuel saving practices like idle reverse, flaps 25 landing, not to report sick, not taking extra fuel when necessary and other parameters. Improper usage of best fuel saving practices and parameters that do not fully reflect crew performance or KSA (Knowledge, Skill and Attitude) in to performance evaluation system might lead to operational efficiency but it may lead to unsafe operation of a flight which is not the intent of flight operations. Therefore, the below concept model is established to study the relationship between performance management practice and safety of a flight. Strategic congruence, meaningfulness, specificity, acceptability and fairness, openness/continuous feedback and lack of safety focus taken as independent variables and the effect they have on safety of a flight as dependent variable.

Figure 1: Conceptual framework model



Source: Developed by the researcher based on the literature.

Chapter Three

Research Design and Methodology

3.1 Introduction

This chapter discusses research design, approach, sampling design, source of data, data collection method and instrument, data analysis methods, validity, reliability and ethics of the study.

3.2 Research Design

Designing a research means laying out the detailed plan which gives research direction as well as methods. It is a blue print on which the research is conducted.

The employed research design was descriptive research design to investigate the impact of performance management practices on the safety of flight in Ethiopian Airlines. It includes both qualitative and quantitative data to analyze the information and make conclusions. It describes "what" is not "why". It is also quick to perform and cheaper.

3.3 Research Approach

Researcher uses different research approach to conduct their study. The three approaches to do a research are qualitative, quantitative and mixed approach. In this study mixed research approach were used in order to describe the findings in a full picture. Since the work setting of pilots is unable to gather them in one place, the survey questionnaires were sent using Google survey method and sent to their personal social media platforms.

3.4 Sampling Design

3.4.1 Target Population

Target population of this study was pilots of Ethiopian Airlines actively flying on line operations. It only considered 1200 permanently employed pilots of ET who worked more than two years in the airline.

3.4.2 Sampling Frame

This study targets a population of Ethiopian Airlines pilot. Both captains and First Officers/co-pilots are considered for this study. For the purpose of getting the whole picture for the study, the target populations of 1200 pilots are considered. First-officers or co-pilots who worked less than a year were excluded as they are not evaluated at least twice and get good experience of it.

3.4.3 Sampling Technique

The sampling technique employed in this study is a stratified random sample method. This method is recommended to divide population into a serious of strata as a representative of the population. Hence, the population job position and equipment they are flying on is used as a strata. To obtain the whole picture of pilot representation captains and first officers who work on different equipment or airplanes were be taken proportionally.

3.4.4 Sample size

The numbers of participant in the study are called sample size. The more the participants in the research means the more the research can be trusted but there is not always possible to get a very large sample size and in some cases impossible. Thus, sample size in the study will definitely affect the confidence level. A confidence level of 95% or higher is extremely good and means the results of the test can be trusted. “The method of proportional allocation under which the sizes of the samples from the different strata are kept proportional to the sizes of the strata" Kothari (2004, p.630. Therefore, sample size calculations were performed as follows.

The total number pilots as of today are 1200 of which 500 are captains and the remaining 700 are first officers or co-pilots. Since the study area requires high level of expertise and large consequence on human life, this high level of confidence is considered. Considering the work nature of pilots, a confidence level of 95% levels of confidence with variability of 0.05 were considered and used for the research.

Hence, using Taro Yemane (1967) formula a sample size was identified.

$n=N/ (1+Ne^2)$

where, n=sample size, N=the population size and e=level of precision

$n=1200/ (1+1200(0.050)^2)$

n=300

To calculate the sizes of the samples for captains and first officers, the following formula derived from C.R.Kothari (2004) were used.

ni=n*Pi

Where, i=target population strata, ni=total sample size, Pi=portion of target population in the stratum, and n=number of elements selected from stratum i.

The strata for captains and first officers were calculated as follows.

For Captains:

Pi=500/1200=0.4167=42%

ni=300*(0.4167)

ni=125 captains

For First Officers:

Pi=700/1200=58.3%

ni=300*0.58=175 First Officers or Co-pilots

3.5 Source of Data

To capture in depth information about the study subject in depth primary and secondary data were used in this study. The primary data were gathered using only survey questionnaires. This is because of the inconvenience of the working environment. The secondary data were collected from prior studies, reports of the airlines and others.

3.6 Data Collection Method

Questionnaires were prepared and distributed to sample respondents using Google survey questionnaire method. For the convenience of this study, the prepared survey questionnaires were distributed using social media platforms.

3.7 Data Collection Instrument

As discussed above, this study employed a survey questionnaire with structured and non-structured type of questionnaire. Both open and close ended questionnaires in combination with Likers scale method were prepared to measure the behavioral attitude of respondents.

3.8 Data Analysis Method

Descriptive data analysis methods were used to analyze the collected data and presented using percentages, figures and tables. A Statistical Package for Social Sciences (SPSS) was used in the analysis. A likert scale of 1 to 5 and multiple choice questionnaires were used to show the range of agreeableness. Based on literature reviews, the below table is provided for reference and interpretation of analysis result.

Table 1: Agreeableness range table

No.	Response	Mean range
1	Strongly disagree	[1 to 1.8)
2	Disagree	[1.8 to 2.6)
3	Neutral	[2.6 to 3.4)
4	Agree	[3.4 to 4.2)
5	Strongly Agree	[4.2 to 5.0)

Source: based on Sekaran (2003) and Plano Clark and Creswell (2015)

3.9 Validity and Reliability

3.9.1 Validity

The validity of data collection method should be checked before the all the questionnaires are distributed to the sample pilots. By distributing sample questionnaires to limited number of colleagues who have a good experience in the airline the validity of the data were checked. If there found to be any flaws, the questionnaires would be adjusted to keep its validity.

3.9.2 Reliability

Data collection instruments reliability were checked using ten copies of questionnaire distributed to senior captains for suggestions and their comments. Accordingly, the questionnaires were developed and disseminated to respondents.

3.10 Research Ethics

To show confidentiality and anonymity of respondents, “for educational purpose only” note was placed at the top of Google questionnaires. The cover letter of the questionnaires also describes the purpose of the questionnaires, its confidentiality and for educational usage. No information of respondents will be used against them or altered during data analysis. The sole purpose of the gathered data is to fulfill the objectives of the study purpose only.

Chapter Four

Data Analysis and Presentation

4.1 Introduction

The study attempts to assess employees' perception on performance management practice and its relation with safety of a flight. The survey was conducted on Ethiopian Airlines pilots from junior First Officer to most senior Captains. The strategic congruence, meaningfulness, specificity, openness, acceptability and fairness, and lack of safety focus of performance evaluation practice of ET were reviewed and its relations with safety were also assessed based on the respondents' response using descriptive analysis.

4.2 Response Rate

Response rate is a measure of the percentage of people who respond to a particular survey, questionnaire, or other form of data collection. A higher response rate generally indicates greater engagement and higher quality data. However, a low response rate can also be informative as it suggests potential issues with the survey design or distribution method.

A total of 295 complete and filled questionnaires have been collected and used for analysis purpose. Among the distributed questionnaires 170 were for First Officers and 125 were for Captains which makes the response rate 98.3%.

4.3 Respondents Demographic Information

The below table 3 shows, 98.5% are male and 2.5% are female. This shows most of the pilots flying for Ethiopian Airlines are male pilots. It shows a male dominated job. The respondents age distribution shown in the table are 72.3% were between age group of 30 to 39 years, 22.4% of them were less than 30 years and the remaining 5.3% were in the age group of above 50 years. This shows the airline have a younger workforce who can serve long years and aide ET in attaining it mission and objectives.

The majority of the respondent's service years were 5-10, 10-20 and 2-5 years respectively. The percentage distribution shows 34.0%, 33.6% and 29.1% respectively. The remaining 3.3% fall under the service years above 20 years. Generally 96.7 % of the pilots have served the airline 2 to 20 years. This data also shows the airline is possessing energetic and valuable human capital.

Moreover, the airline has more First Officers as compared to captains, 65.4% are First Officers and 34.6% are Captains. This is due to the fact that the airline is on a growth stage and the work nature, it requires more First Officers to be trained and become a Captain as they progress up in their career development. In addition, this paper doesn't consider foreign national captains who work for ET on a contract term. Generally, the numbers of Ethiopian national captains are smaller in number compared to the First Officers.

Table 2: Background of the respondents

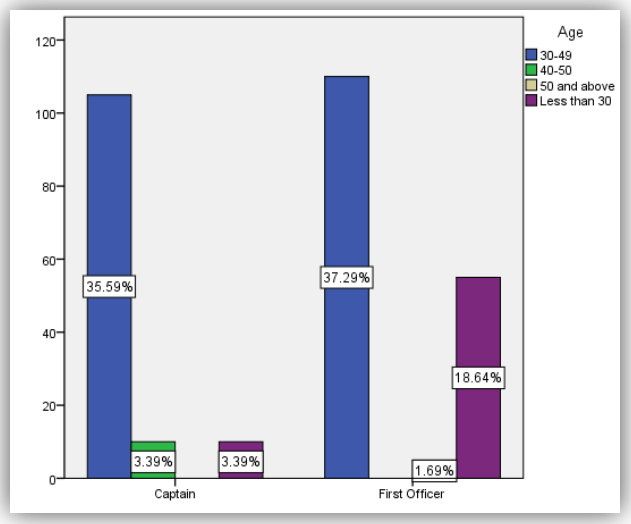
Category	**Frequency**	**Percent**
Gender		
Male	290	98.3
Female	5	1.7
Age		
Above 50	5	1.7
40-50	10	3.4
30-39	215	72.9
Less than 30	65	22.4
Service years		
above 20 year	5	1.7
10 - 20 year	110	37.3
5 - 10 year	95	32.2
2 - 5 year	85	28.8
Position in the airline		
Captain	125	42.4
Firs Officer	170	57.6

Source: Researcher survey, 2023

4.4 Demographic effect on study variables

The demographic data on table 2 shows almost all pilots are male. So there is no point to consider respondent's sex classification in the analysis. Result of the age group on Fig. 2 also shows that most of the Captains and First Officer's age lies between 30 to 39 years. Therefore, since the most captains have served more than five years and most First Officer's service years is less than 10 years. The data analysis considered age and service year's classification under the position of Captain and First Officer.

Figure 2 Respondents age and position bar chart



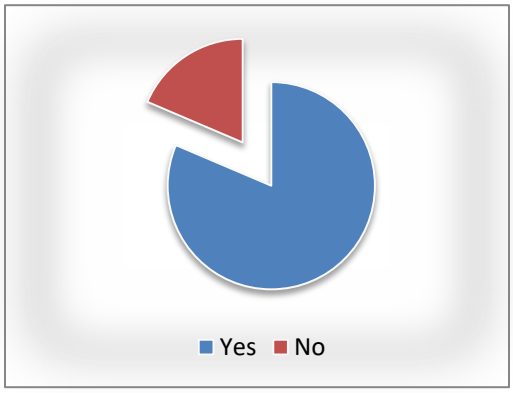
Source: Researcher survey, 2023

4.5 Analysis and Interpretation of Performance Management Practices

4.5.1 Clarity of PMP

Purpose of performance management objectives and targets should be clear among employees for the effective implementation and positive outcomes. Accordingly, ET Flight Operations strategic objectives and individual targets understanding among flight crews were analyzed from the result obtained from the questionnaires.

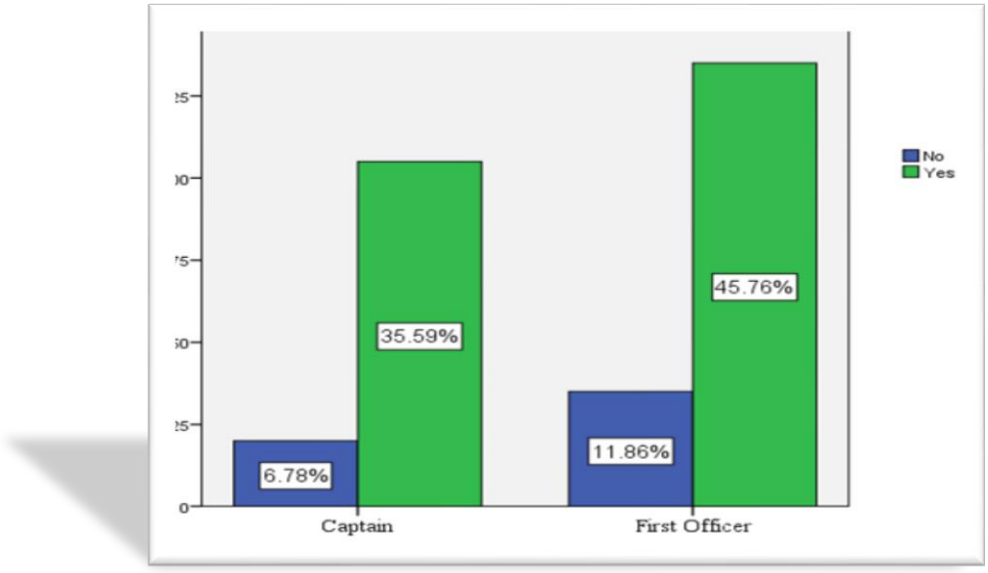
Figure 3: Summary of understanding of performance evaluation purpose



Source: Researcher survey, 2023

The above figure 3 shows 81% of respondents were clear about the purpose of performance evaluation reason. This means most respondents know the purpose and 19% of them don't know why they are evaluated quarterly every year. In terms of job title or position and awareness of the purpose of performance evaluation, both Captains and First Officer's response percentage were closer as shown below on figure 4, the percentage difference is due to their sample size difference.

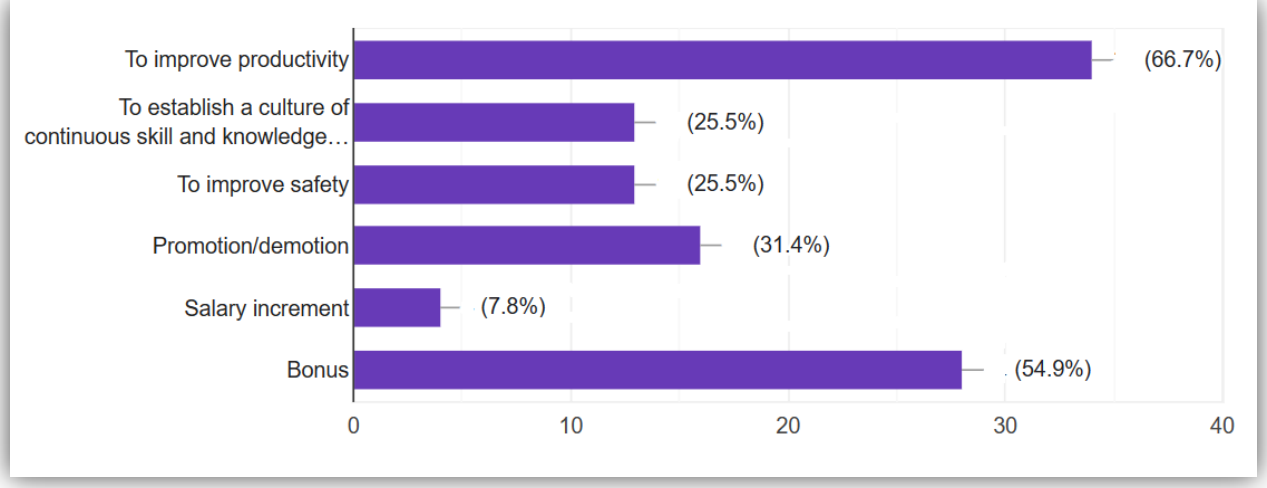
Figure 4: Summary of respondent's position versus their awareness of PMP purpose.



Source; Researcher survey, 2023

As shown below on Fig 5, majority of the respondents understood the on job performance management evaluation purpose as to improve productivity of the airline. Among the total respondents, 66.7% responded the purpose as to improve productivity and 54.9% responded the purpose as for bonus reason. The other 25.5% of respondents responded the purpose as to establish a culture of continuous skill and knowledge development and to improve safety. There were also respondents who responded the purpose as for promotion/demotion and salary reason. Among them 31.4% responded as to promote/demote and 7.8% responded as they got salary increment based on performance evaluation result. Therefore, based on the collected and analyzed result, ET pilots have a good awareness of performance evaluation purpose.

Figure 5 Summary of respondents on purpose of performance evaluation for cockpit crews



Source: Researcher survey, 2023

Flight crew response about performance management system clarity of strategy were composed and shown in the table below.

Table 3 Respondents summary on strategic congruence questions

Questions	N	Mean	Std. Deviation
I am clear with flight operations strategic objectives.	295	3.46	.70
I am clear about your job responsibilities and what is expected from me.	295	4.27	.82
My individual goal is aligned with the strategic objectives of flight operations target as well as the airline in general.	295	3.71	.85
Clarity Mean	**295**	**3.81**	**.55**

Source; Researcher survey, 2023

The above table 3 shows the strategic congruence of the system have a mean of 3.8. This shows that pilots agreed PMP has clarity and they know their responsibility, individual goals as well as the strategic objectives of flight operations and the airline in genera. In the same way, a standard deviation of 0.55 shows homogeneity of respondent's perception.

Majority of flight crew agree were clear about strategic objectives of Flight Operations, what's expected from them and their job responsibility very well. The above table shows a mean of 3.46 and 4.27 responded agreed regarding understanding strategic objectives, their job responsibility and what's expected of them, respectively. A standard deviation of .70 and .82 also shows the response was homogenous. Moreover, the flight crew response of 3.71 mean and 0.85 standard deviation indicates they know their individual goal were aligned with the organization strategic goals. Therefore, the performance management evaluation awareness among flight crew members was positive and encouraging.

From the Likert scale and multiple choice questionnaire response summary result, it can be concluded that flight crews (both Captains and First Officers) have good level of clarity on performance management purpose and its objectives.

4.5.2 Meaningfulness

Performance management practice must be meaningful in several ways to be able to get a fruitful result from flight crew performance.

Based on the response shown below in table 4, a mean of meaningfulness is 2.74. This shows flight crews belief on KPI were neutral. The response on flight operations objectives being realistic and attainable, mean 3.56 shows they do believe that it's realistic and attainable or responded positively. But, they don't believe that the performance indicators (KPI) used for evaluation purpose were complete and do reflect situations under control of the pilots only. Respondents mean of 1.92 and .77 standard deviation also shows respondents do not agree that KPI is complete and reflect situations under control of the flight crew.

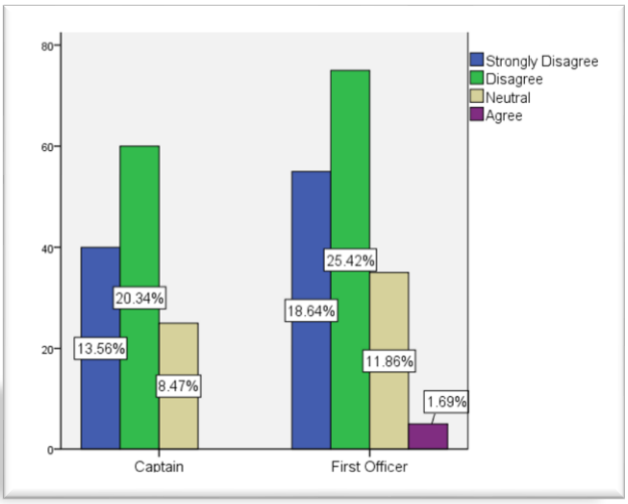
Table 4: Respondents response summary on meaningfulness

Questions	N	Mean	Std. Deviation
I believe that flight operations objective is realistic and attainable.	295	3.56	.77
I believe that the key performance indicators (KPI) are complete and reflect situations within the control of the pilots only.	295	1.92	.77
Meaningfulness	**295**	**2.74**	**.63**

Source: Researcher survey, 2023

Below bar chart figure 6 also that show that both respondents, Captains and First Officer's, disagree and strongly disagree on the completeness of KPI and its measure on situations under the control of the pilots only.

Figure 6: Summary of captains and first officer's response on KPI completeness



Source: Researcher survey, 2023

Taking the qualitative data of respondents flight crew don't think it's practical to use KPI evaluation for pilots as important factors are jumped and weights are given for issues that are applicable to office workers, not pilots.

Taking the above statements and the quantitative result, it can be concluded that, flight crew (both Captains and First Officers) believe that flight operations objectives were realistic and attainable but it's not complete and do not reflects situations under the control of the flight crews only. Generally, the response shows they are neutral on meaningfulness of PMPs.

4.5.3 Specificity

Performance system should be specific enough so that employees know the detailed guidance on what to accomplish and what is expected of them. The below collected data from respondents were analyzed to show the current performance management system specificity.

Summary of respondents on, on below table 5, shows specificity of PMPs. The mean score of 2.55 indicates that the flight crew perception towards specificity were negative. The respondents believe that they were not informed and reached on an agreement with their supervisor on standards that will be used to evaluate their work. A mean of 2.46 shows flight crews were not agreed that they were informed and reached on an agreement before performance evaluation system was implemented on them.

Table 5: Response summary of respondents on specificity

Questions	N	Mean	S.D.
I am informed and reached on an agreement with my supervisor about the standards that will be used to evaluate my work.	295	2.59	.99
I believe that the future direction of the company and department is clearly communicated to everyone.	295	2.59	.99
I am always been informed about a change in flight operations goal, and the initial goal settled by me and the chief pilot.	295	2.46	.87
Specificity Score	**295**	**2.55**	**.79**

Source: Researcher survey, 2023

The data also reveal that the future direction of the company and department, mean 2.59, was not clearly communicated with the flight crew. Besides, a response of mean 2.59 on any update on flight operations goal information to flight crew show it is not were not regularly update to flight crews. The standard deviations were .87, .99, and .99 respectively with a specificity group score of .79. This shows the data distribution among the respondents (Captains and First Officer's) were homogenous. Generally, the response shows a disagreement to specificity of the performance management evaluation practice.

In conclusion, flight crew revealed that there was lack of agreement with supervisor on standard of performance against which they are evaluated and they were also not communicated regularly for any update on the evaluation standards. Generally the response on specificity shows disagreement on specificity of PMPs.

4.5.4 Acceptability and Fairness

Performance management should be fair and acceptable to everyone. The reward system should have a true meaning to flight crews in order to encourage them for future effort and productivity.

The summary of acceptability and fairness response on table 6 depicts 2.61 mean which shows a neutral response to acceptability and fairness of the system. In similar fashion, 0.5 standard deviations indicate that the response of flight crews were not homogeneous.

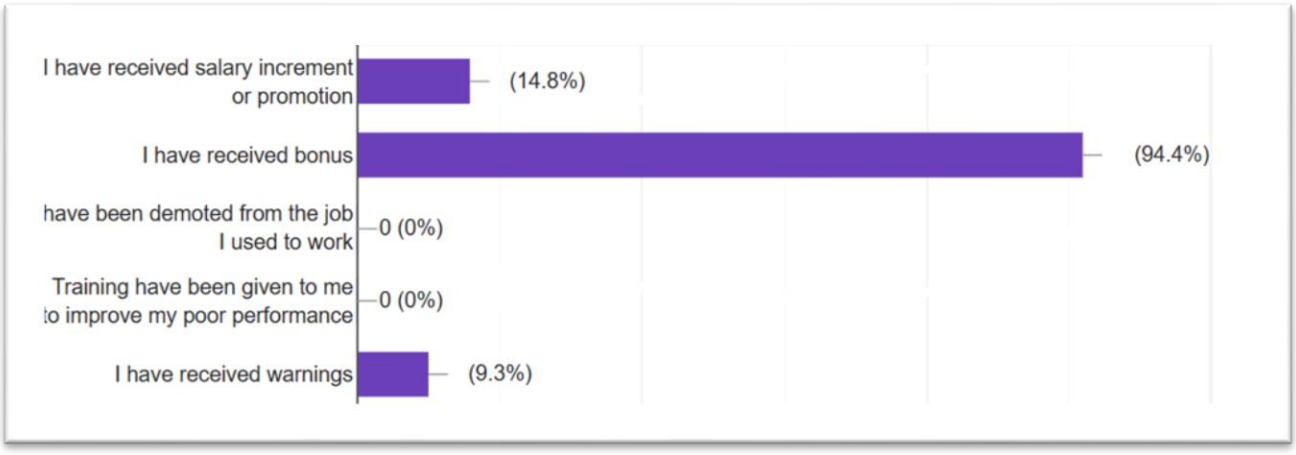
Table 6: Response summary of respondents on acceptability and fairness

Questions	N	Mean	S.D.
I believe that my KPI result and the reward/bonus I received are acceptable and fair.	295	2.08	.89
I think that when different managers are assigned on the position they use different weight on rating scale.	295	3.22	.85
I believe that my supervisor who assesses my performance is biased by different reasons.	295	3.22	.98
I think KPI evaluation result reflects my daily activities.	295	1.92	.94
Acceptability and Fairness Score	**295**	**2.61**	**.50**

Source: Researcher survey, 2023

The below figures of bar chart details show respondent's detailed report on individual questions. The bar chart on fig 6 shows that 94.4% pilots received bonus based on the performance evaluation result. The remaining 14.8% and 9.3% received salary increment or promotion and got warnings respectively. This shows the prime target of performance management is to reward bonus based on KPI evaluation result.

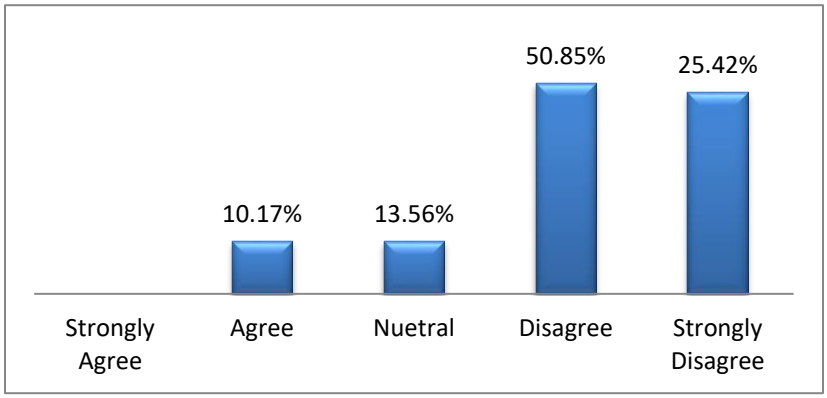
Figure 7 Summary of respondents received reward based on performance evaluation result



Source: Researcher survey, 2023

Majority of the flight crew, 94.4%, have received bonus based on their KPI result. Their views towards its fairness were discussed below.

Figure 8: Percentage summary of respondents about reward/bonus fairness

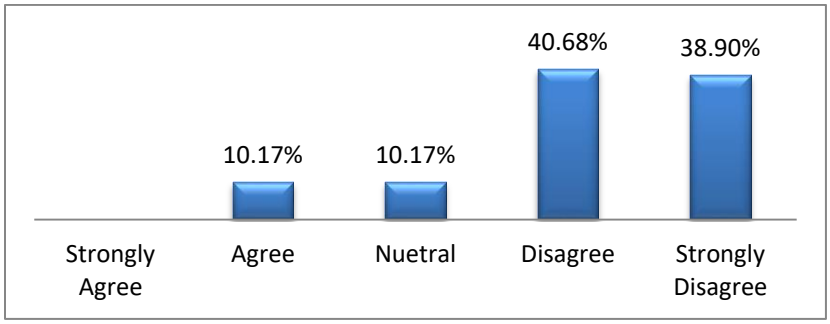


Source: Researcher survey, 2023

The above figure 8 shows 50.85% and 25.42% of respondents disagree and strongly disagree respectively. This shows KPI evaluation result and the reward/bonus received not acceptable and fair. The mean of the respondents, .89, also depict there were insignificant difference on Captains and First Office's response distribution. Again, the respondent's response on manager's usage of different weight on rating scale and biasness shows neutral and there is insignificant difference on their response variation and position.

On the contrary, the below figure 9 show 40.68% and 38.98% respondent's disagree and strongly disagree on KPI evaluation result reflect their daily activities. The table also shows, 1.92 mean and 0.94 standard deviation, KPI evaluation do not show daily activities of the flight crew. This also shows close to all pilots agree that the KPI result did not show the daily activities of their performance. There were also similarity of response among Captain and First Officers.

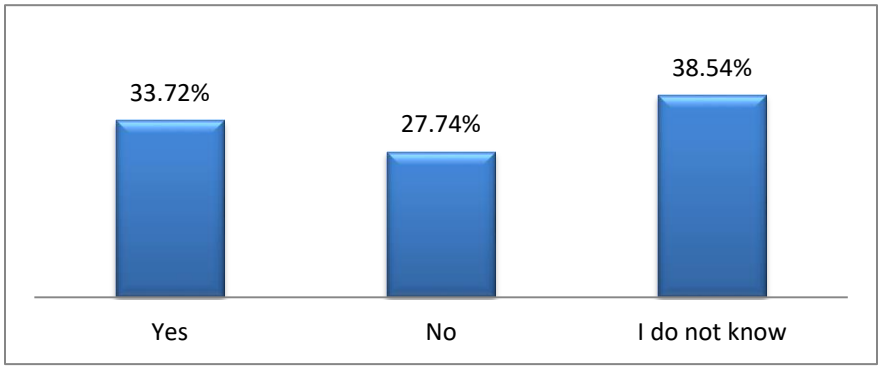
Figure 9: Summary of respondents on KPI evaluation result reflection on their daily activities



Source: Researcher survey, 2023

In addition, the respondents summary on the bar chart for the question “do all pilots are evaluated against performance management practice?’’ and “is KPI evaluation is fair and acceptable?” were presented as follows.

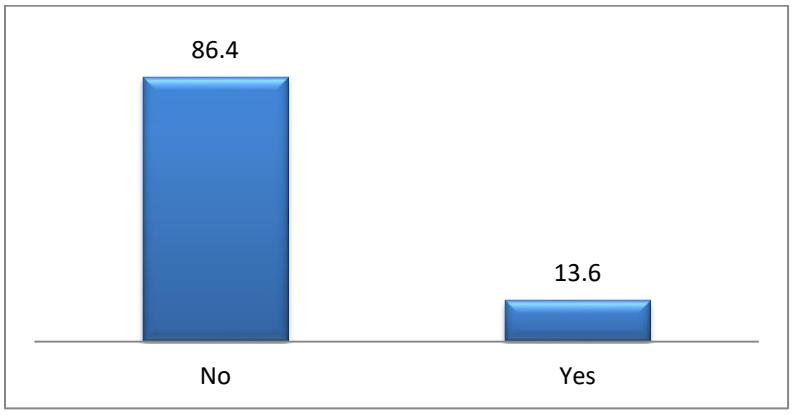
Figure 10: Percentage response for “is performance management evaluation practice for all pilots?”



Source: Researcher survey, 2023

Figure 10 shows most of the flight crew were not aware of performance evaluation is for all crew members. Among the total respondents 38.54% responded they don’t know whether the system is for all flight crew members or not and 27.74% replied the evaluation were not for all crew members. Only 33.72% agreed that the evaluation is for all flight crew members. This shows that the system is not showing fairness among flight crew members.

Figure 11: Do you believe KPI evaluation is fair and acceptable?



Source: Researcher survey, 2023

The chart portrays 86.4% of respondents believe that performance evaluation system of flight operation department were not fair an acceptable. It’s only 13.6 % of respondents who believe

that the evaluation system were fair and acceptable. This show both Captains and First Officers response were similar in distribution.

Below are respondents' views on fairness of PMPs.

They believe the current KPI evaluation system for flight crew does not reflect true performance and should be molded in to Ethiopian way of thinking and values. Performance indicators need to be evaluated with respect to the job one performs and should not be for the bonus purpose only. They believe the company does not want everybody to achieve good score just not to pay bonus for everyone that helps to reduce cost. Generally, KPI is primarily meant to determine amount of bonus pay which is totally against the very intent of why performance evaluation is implemented.

In summary, from the Likert scale mean, bar chart description and flight crew opinions, it was summarized that the performance evaluation were not acceptable and fair.

4.5.5 Openness

Performance evaluation system should have no secrets. Flight crews should be informed or get feedback continually about their quality performance. There should be a standard and clear two way communication of information exchange between the supervisor and employees.

Table 7: Response summary of respondents on openness

Questions	N	Mean	S.D.
I receive feedback regularly about my performance from my manager.	295	2.07	.86
I get continuous engagement or coaching from my supervisor on parts that I should improve.	295	2.00	.82
Openness Score	**295**	**2.03**	**.74**

Source: Researcher survey, 2023

According the summarized data on table 7, the respondent's perception towards openness of the performance evaluation system shows negative result. The mean score of the groups' show 2.03 which means they do not agree that the system is open or there was lack of continues communication and feedback. Similarly, a standard deviation of .74 shows most of the flight

crews agree that it is not an open system of evaluation method. So, it were summarized that performance evaluation has no continuous feedback and coaching which is crucial in performance improvement process. In conclusion, PMPs lack openness.

4.5.6 Lack of Safety Focus

The lack of safety focus in performance evaluation of pilots is a serious concern that can have significant implications for airline safety. It emerges due to improper application of performance evaluation system. Performance evaluations of pilots should not only be based on their ability to fly and complete flights without delays but also on how safely they perform their duties.

One way to address this issue is to include specific safety-related metrics in pilot evaluations, such as adherence to standard operating procedures, compliance with safety regulations, and other parameters which enhance safety. Furthermore, by creating a safety culture flight crew members will take ownership of safety and prioritize it within their work ethics.

Table 8: Response summary of respondents on lack of safety focus

Questions	N	Mean	S.D.
KPI evaluation system forced me to fly even if I am fatigued not to get complaints from stakeholders.	295	3.51	1.18
I feel I am pressured to attain the performance target.	295	3.52	.93
Lack of Safety Focus Score	**295**	**3.52**	**.93**

Source: Researcher survey, 2023

Based on the data shown on the table 8, a mean of 3.51 responses shows agreeableness of flight crews to accept duty in order to reduce complaints, which later affects their KPI result. The standard deviation 1.18 shows wider spread in respondents which shows it affected certain number of flight crew and the others feel that it doesn't affect them. This by itself shows there was unfairness among flight crews. Similarly, respondents response of 3.52 mean and 0.93 standard deviation on question "do you believe that you are pressured to attain performance target?" indicates both Captains and First Officers were pressured to attain performance target. This caused flight crews to accept duty that directly reduces safety margin in fear of evaluation criteria's.

The general lack of safety focus mean 3.52 and standard deviation .93, also shows respondents agree that there were lack of safety focus during performance evaluation practices.

The qualitative data of respondents' show that PMPs evaluation system forces them to fly when they are sick and fatigued which in in fact reduces the level of safety required for aviation.

Therefore, generally the above data and opinions it can be concluded that there were lack of safety focus in PMPs. Flight crews were pressured to accept duty while they are fatigued in order to obtain higher performance evaluation result.

4.5.7 Summary of Performance Management Practices (PMP)

To summarize, the clarity of the performance evaluation system was viewed in a positive way. Flight crews were aware and understood performance evaluation purpose is to improve productivity of the airline and received bonus as a reward. But, they don't agree that the bonus they received were acceptable and fair. They also shows neutral view on meaningfulness but specificity, openness, acceptance and fairness response summary revealed a disagreement on the performance management practice of ET flight operations.

The table below shows a summarized mean and standard deviation independent variables.

Table 9 Summary of performance evaluation practice response average mean

	Clarity	Meaning -fulness	Specificity	Accept. and Fair.	Openness	Lack of Safety Focus	PMP
Mea.	3.81	2.74	2.55	2.61	2.03	3.51	2.87
S.D.	.55	.63	.79	.51	.74	.92	.35

Source: Researcher survey, 2023

The above table 9 shows a summarized mean of the respondent opinion about independent variables selected for performance management practice of ET. The data collected and analyzed result presented on the table was the Likert scale questionnaires only. Accordingly, the table shows clarity responses mean of 3.81 and standard deviation +0.55 which depicts there were positively agreed on clarity of the system. Meaningfulness of performance evaluation system has a score of 2.74 mean and an SD of 0.63. It indicates flight crew perception towards meaningfulness of the system was neutral and there were non-uniformity of responders. Thus,

the meaningfulness of the performance evaluation practice is not that much meaningful to the respondents in general they show neutral response.

Specificity mean of 2.55 and SD +0.76 indicates flight crews disagree with the system specificity almost with same response rate. Acceptability and fairness mean and standard deviations were 2.59 and +0.51 respectively. This shows flight crews disagree with the systems acceptability and fairness with difference in their response. Openness has also a mean of 2.30 and SD +0.74 which depicts flight crew disagreeableness with openness of the system. Lack of safety focus shows a mean of 3.51 and standard deviation of .92 which shows there was lack of safety focus during evaluations.

Finally, the mean of all of the independent variables of performance evaluation has a mean of 2.87 and SD +0.34 which shows their average response was neutral. However, a +0.34 standard deviation indicates there were difference in flight crews response on each variables. For example, openness has a respondent's mean of 2.03 and that of clarity was 3.81 which shows a disparity of response on each variables.

Generally, the performance management practice has a positive level of clarity, neutral on meaningfulness, and negative view on specificity, acceptable and fairness, openness, and lack of safety focus.

4.6 Analysis of Performance Management Practice (PMP) on Flight Safety

Performance evaluations may focus more on operational efficiency or other performance metrics at the expense of safety-related behaviors and actions. Primary data were collected from employees' perception of performance evaluation practice effect on safety and the analyses were presented as follows.

Based on the respondent's data on table 10 below, response mean of 2.37 and 2.10 for the questions asked about the performance evaluation system to improve safety and KSA of pilots imply that the employees generally disagree to the safety improvement variables. In addition, the standard deviation value of 0.99 and .97 respectively also shows respondents response similarity for both Captains and First Officer's. Generally, the flight crew beliefs about safety shows mean of 2.23 and standard deviation of .82. This means they disagree that performance evaluation has improved their performance and safety.

Table 10: Respondent summary of PMP on safety

Questions	N	Mean	S.D.
Performance management evaluation system of ET improves safety of flight.	295	2.37	.99
Performance evaluation system of ET measures your technical skills, operational knowledge and/or leadership skills which have impact on safety of a flight.	295	2.10	.97
Safety Score	**295**	**2.23**	**.82**

Source: Researcher survey, 2023

In addition, an additional question were responded with “yes” or “no” to further understand the effect of performance evaluation on safety. The result is summarized on the below frequency tables and charts.

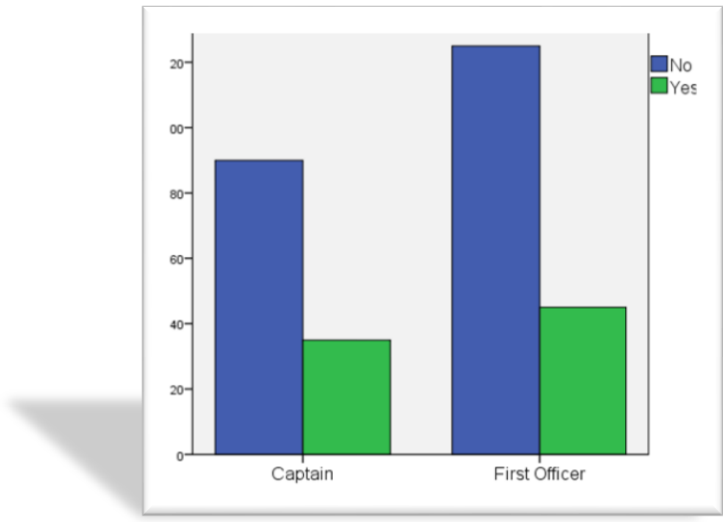
Table 11 Respondent’s summary of performance improvement and safety effect

Questions	N	Frequency	%
Do you think that reward or bonus as a result of performance evaluation has improved your performance?	No	215	72.9
	Yes	80	27.1
	Total	295	100
Do you believe that the current performance evaluation practice of flight crews affected safety of the flights?	No	150	50.8
	Yes	145	49.2
	Total	295	100

Source: Researcher survey, 2023

Based on the data on table 10 above, 72.9% shows reward or bonus received as a result of performance evaluation has not improved their performance. The remaining 27.1% responded that it improved their performance. Regarding, effect of performance practice on safety of a flight the table shows 50.8 % responded that it do not affect safety and the remaining 49.2% responded it affect safety. Besides, the number of Captains and First Officer’s response show same proportion as depicted on the figure below on Fig 12 and 13.

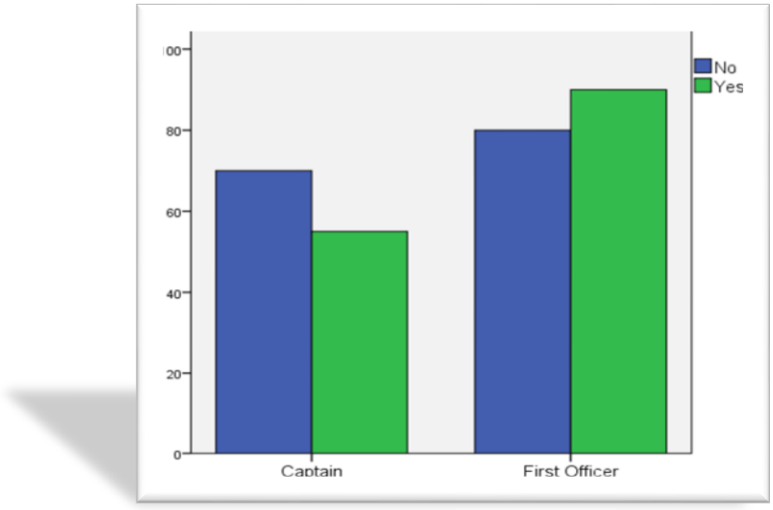
Figure 12: Graphical presentation of respondent's summary of on bonus improved performance.



Source: Researcher survey, 2023

The above graphical presentation, on figure 12, shows the respondents response that reward received has not improved their performance which is liked to safety.

Figure 13: Graphical presentation of respondent's summary PMP affected safety of the flight.



Source: Researcher survey, 2023

Based on figure 13, the number of captain respondents replied that PMP didn't affect safety but First Officers believe that it affected safety. The average response shows it didn't affect safety of flight.

In summary, based on the Likert scale mean and "yes" "No" questionnaires result, the response shows disagreement to safety performance improvement. Therefor it can be concluded that PMPs has not improved flight safety.

4.7 Flight Crew Opinions

Flight crew opinions about performance evaluation based on open ended question were used in the above analysis where it fits and summarized follows. They believe the current KPI evaluation system for flight crew does not reflect true performance and should be molded in to Ethiopian way of thinking and values. Performance indicators need to be evaluated with respect to the job one performs and should not be for the bonus purpose only. They also don't think it's practical to use KPI evaluation for pilots as important factors are jumped and weights are given for issues that are applicable to office workers, not pilots. They also complain that the evaluation system forces them to fly when they are sick and fatigued which in in fact reduces the level of safety required for aviation. They believe the company does not want everybody to achieve good score just not to pay bonus for everyone that helps to reduce cost. Generally, KPI is primarily meant to determine amount of bonus pay which is totally against the very intent of why performance evaluation is implemented.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

This chapter presents the summary of findings, conclusions and recommendations.

5.1 Summary

The objective of this study was to assess the current performance management practice on flight safety of ET flight operations. The basic question of the research was:.

1. What's the current performance management practice of ET Flight Operations for pilots?
2. What is the relationship between performance management practice and safety of a flight in Ethiopian Airlines?

The research was designed to use descriptive data analysis using both qualitative and quantitative data. Accordingly, primary data's were collected using survey questionnaires that incorporated open ended questionnaire to grasp the opinions of flight crews. Among the distributed questionnaires 275 were filled and returned with is 98.3%. Then the data were analyzed using SPSS descriptively by tables, charts and graphs. The results of data analysis in conjunction with flight crew opinions were used to get the findings of the study.

Findings of the study

Based on the data analysis result, the findings of performance management practices variables show both positive, neutral and negative result. Accordingly, the findings were presented as follows:

- **Clarity:** the respondents have agreed that PMPs have clarity. Flight crews have good level of clarity on performance management purpose and its objectives.
- **Meaningfulness**: The general response shows they are neutral on meaningfulness. Flight crew believe that flight operations objectives were realistic and attainable but it's not complete and do not reflects situations under the control of the flight crews only.
- **Specificity:** the response on specificity shows disagreement on specificity of PMPs. Flight crews believe that there was lack of agreement with supervisor on standard of

performance against which they are evaluated and they were also not communicated regularly for any update on the evaluation standards.

- **Acceptability and Fairness:** PMPs were not acceptable and fair to flight crews. The response shows the evaluation result has not shown their daily activity and the bonus received was not fair. It also shows neutral on supervisor biasness during evaluation.
- **Openness**: PMPs lack openness. The response shows there was lack of regular feedback and continuous communication with supervisor.
- **Lack of Safety Focus:** there were lack of safety focus in PMPs. Flight crew responded that they were pressured and forced to accept duty even if fatigued in order not to get complaints which affect their performance score.
- **Flight Safety**: flight safety was not affected or improved due to PMPs. The response shows PMPs has not affected safety and improved performance.

5.2 Conclusions

Based on the findings observed from the analysis of the data, the following conclusions were drawn. The findings indicate that flight crews view performance management practices differently.

Pilots feel that performance management practice has clarity. They are clear about the objectives of flight operations and their responsibility, and they think their individual goals were aligned with the objectives of flight operations target and the airline in general. PMPs have low meaningfulness to flight crews as the response shows neutral on that regard. They have also perceived that the system lacks specificity, acceptance and fairness, and openness. Flight crews also perceive that there is lack of safety focus during performance evaluation. Generally, flight crews showed majorly disagreement on most of performance management practices, neutral on its meaningfulness and agreed that there were lack of safety focus during evaluation.

Flight was analyzed separately. Accordingly, the study has found out that performance management practices have not improved flight safety.

Therefore, it can be concluded that improvement of the meaningfulness, specificity, openness, acceptance and fairness and higher safety focus in the performance management system would improve flight safety. On the other hand, the study has found out that the clarity perception among flight crews were at an encouraging positive level.

Generally, the research found out that performance management practices has positive and significant relationship with flight safety. Therefore, improving these factors will make the system more effective with a positive improvement in the level of safety.

5.3 Recommendations

Based on the study analysis result and conclusions, the below recommendations were draw.

- ✓ ET should work on improving PMPs meaningfulness, specificity, acceptance and fairness, and openness during performance evaluation to get a more positive impact on performance and safety.
- ✓ ET Flight Operations should give priority to safety during performance management practices.
- ✓ PMPs should be reviewed to suit flight crew daily activities and the job demand so that its relationship with the safety becomes stronger.
- ✓ PMPs should not be used for bonus allocation purpose only. It should also be taken as a way of improving knowledge and skill development to enhance personal and organization growth which improves safety culture.
- ✓ Continuous communication and feedback should be established to improve performance of individuals and the company which also increase safety.
- ✓ The researcher recommends more research to be done in the area to identify other factors of performance management system that influence safety and performance of flight crews.

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Appendix-I: Questionnaire

ADDIS ABABA UNIVERSITY

Department of Business Leadership

Questionnaire Prepared for Postgraduate Studies

Dear respondents to this question! The purpose of this questionnaire is to collect information for the partial fulfillment to the Master's Degree thesis in Business Leadership at Addis Ababa University's. Title of the study is "Assessing Performance Management Practice Effect on Flight safety, the case of Ethiopian Airlines Flight Operations ". In this regard, I believe that the information you give me has a great significance for this study. You are not required to provide your name when completing this questionnaire and to make easy, it is prepared in digital survey questionnaires method. I thank you in advance for your cooperation and valuable time, assuring you that it will take no more than 10 minutes to complete the questions and that the information you provide will be kept confidential and will be used for educational purposes only.

Part I – General Information (Background of the Respondents)

1. Gender (A) Male (B) Female
2. Age (A) Less than 30 (B) 30-39 (C) 40-50 (D) 50 and above
3. Years of service (A) 2 to 5 yrs (B) 5 to 10 yrs (C) 10 to 20 yrs (D) above 20 yrs
4. What is your current position in the airline? (a) Captain (B) First Officer

Part II Performance Management Practice

5. Are you clearly aware of the purpose of performance management implemented by ET?
   a. Yes b. No
6. If yes, what's the purpose of performance measurement of cockpit crews? (you can choose more than one choice)

   A. To improve productivity B. To establish a culture of continuous skill and knowledge development C. To improve safety D. Promotion/demotion E. salary increment F. bonus
7. Based on your performance evaluation result what award or punishment you got? (you can choose more than one choice)
   a. I have received salary increment or promotion b. I have received bonus

c. I have been demoted from the job I used to work d. Training have been given to me to improve my poor performance. e. I have received warnings

8. Do you think all pilots are evaluated against Performance Management Practice?
   A. yes B. No C. I do not know
9. Do you believe KPI evaluation is fair and acceptable? A. Yes B. No
10. Do you think that reward or bonus as a result of performance evaluation has improved your performance? A. Yes B. No
11. Do you believe that the current performance evaluation practice of flight crews affected safety of the flights? A. yes B. No

Part III Performance Evaluation Practice

S/N	1= Strongly Disagree, 2= Disagree, 3= Neutral 4= Agree and 5= Strongly Agree	1	2	3	4	5
	Clarity					
12.	I am clear with flight operations strategic objectives					
13.	I am clear about your job responsibilities and what is expected from me.					
14.	My individual goal is aligned with the strategic objectives of flight operations target as well as the airline in general.					
	Meaningfulness					
15.	I believe that flight operations objective is realistic and attainable.					
16.	I believe that the key performance indicators (KPI) are complete and reflect situations within the control of the pilots only.					
	Specificity					
17.	I am informed and reached on an agreement with my supervisor about the standards that will be used to evaluate my work.					
18.	I believe that the future direction of the company and department is clearly communicated to everyone.					
19.	I am always been informed about a change in flight operations					
	Acceptability and Fairness					
20.	I believe that my KPI result and the reward/bonus I received are					

	acceptable and fair.					
21.	I think that when different managers are assigned on the position they use different weight on rating scale.					
22.	I believe that my supervisor who assesses my performance is biased by different reasons.					
23.	I think KPI evaluation result reflects my daily activities.					
	Openness					
24.	I receive feedback regularly about my performance from my manager or chief pilot.					
25.	I get continuous engagement or coaching from my supervisor on parts that I should improve.					
	Lack of Safety Focus					
26.	KPI evaluation system forced me to fly even if I am fatigued not to get complaints from stakeholders.					
27.	I feel I am pressured to attain the performance target.					
	Flight Safety					
28.	Performance management evaluation system of ET improves safety of flight.					
29.	Performance evaluation system of ET measures your technical skills, operational knowledge and/or leadership skills which have impact on safety of a flight.					

Part IV. Opinion or suggestions of Respondents

Please give your opinion or suggestions not mentioned in this study that may benefit for this study output.

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