



वैश्व

देवो वायुसेना

सृष्टा

Effect of Categorisation Scheme on **Maintenance Branch Officers in** **Indian Air Force**

A Dissertation submitted to the Panjab University, Chandigarh for the award of Master of Philosophy in Social Sciences, in Partial Fulfillment of the requirement for the Advanced Professional Programme in Public Administration (APPPA)

Air Commodore Rakesh Raturi VSM

(Roll No. 4530)

Under the guidance of

Dr Mamta Pathania



**45th ADVANCED PROFESSIONAL PROGRAMME IN PUBLIC
ADMINISTRATION**

(2019-2020)

CERTIFICATE

I have the pleasure to certify that **Air Commodore Rakesh Raturi VSM** has pursued his research work and prepared the dissertation titled '**Effect of Categorisation on the Maintenance Branch Officers in the Indian Air Force**' under my guidance and supervision. The dissertation is the result of his own research and to the best of my knowledge, no part of it has earlier comprised any other monograph, dissertation or work which has previously formed the basis for the award of any degree, diploma or certificate of this institute without proper citation.

This is being submitted to the Panjab University, Chandigarh, for the purpose of award of Masters of Philosophy (M Phil) in Social Sciences in partial fulfilment of the requirement for the Advanced Professional Programme in Public Administration (APPPA) of the Indian Institute of Public Administration (IIPA), New Delhi.

I find that the dissertation of **Air Commodore Rakesh Raturi VSM** is worthy of consideration and recommend it for the award of M Phil Degree of Panjab University, Chandigarh.

Date : Mar 2020
Place New Delhi-12

(Dr Mamta Pathania)
II PA
IP Estate, Ring Road

ACKNOWLEDGEMENT

At the outset, I express my sincere gratitude to the Indian Institute of Public Administration, New Delhi for providing me an opportunity to undertake research on this important, current and vibrant subject related to the Indian Air Force. I wish to

place on record my deep sense of gratitude to my guide, Dr. Mamta Pathania Assistant Professor at Indian Institute of Public Administration, for providing constant encouragement and invaluable guidance at different stages of my research work. She has been a source of inspiration and instilled a lot of confidence in pursuing the research. The writing of this dissertation has been one of the most significant academic challenges I have had the privilege to undertake. It has been personally a very rewarding and enriching experience.

I greatly appreciate the assistance of all my colleagues of APPPA-45, the faculty members and the library staff at IIPA, New Delhi for their co-operation, valuable inputs and help rendered during the course of this research.

I am also thankful to the officers of the Indian Air Force for providing their considered views on various issues, thereby assisting me in carrying out a meaningful analysis towards the research work.

I would like to acknowledge the views and valuable inputs provided to me by my colleagues from the Indian Army and Indian Navy and colleagues from other Central Services towards the research work.

Date: Mar 2020

(Rakesh Raturi)

Place: New Delhi

Air Commodore

Roll No 4530

DECLARATION

I, Air Commodore Rakesh Raturi VSM, hereby declare that this dissertation titled **‘Effect of Categorisation on the Maintenance Branch Officers in the Indian Air Force’** is my own work and that all the sources I have assessed or quoted have been indicated or acknowledged by means of complete references. This dissertation has not been submitted for any other degree of this University or elsewhere.

Date: Mar 2020

Place : New Delhi

(Rakesh Raturi)

Air Commodore

Roll No. 4530

TABLE OF CONTENTS

<u>Serial No</u>	<u>Topic</u>	<u>Page No.</u>
1.	Table of Contents	(i)
2.	List of Appendices	(ii)
3.	List of Abbreviations	(iii)
4.	Chapter – 1- Introduction	1
5.	Chapter – 2 - Literature Review	15
6.	Chapter – 3- Categorisation Process and Procedure	31
7.	Chapter – 4 – Research Design and Data Collection	38
8.	Chapter – 5- Data Analysis	44
9.	Chapter – 6- Findings, Recommendations and Conclusion	80
10.	Bibliography	82

LIST OF APPENDICES

<u>Serial No</u>	<u>Appendix</u>	<u>Page No.</u>
1.	Survey Questionnaire	ATTACHED SEPARATELY
2.	Construct wise Excell Sheet of Responses	ATTACHED SEPARATELY

ABBREVIATIONS

<u>Ser No</u>	<u>Abbreviation</u>	<u>Full Form</u>
1.	Appx	Appendix
2.	Approx	Approximately
3.	ATT	Attached/Attachment
4.	A,B,C,D	Questions against Constructs 1,2,3,4 respectively
5.	Air Cmde	Air Commodore
6.	BASCO	Basic Air Staff Course
7.	BPKC	Basic Professional Knowledge Course
8.	COMN	Communication
9.	CL	Confidence Level
10.	CAT	Category
11.	C1	Construct 1
12.	C2	Construct 2
13.	C3	Construct 3
14.	C4	Construct 4
15.	Flt Lt	Flight Lieutenant
16.	Gp Capt	Group Captain
17.	IASCO	Intermediate Air Staff Course
18.	Lgs	Logistics
19.	Maint	Maintenance
20.	Mgt	Management
21.	Org	Organisation
22.	Sr	Senior
23.	SEMOC	Senior Engineers Maint Officers Course
24.	Sqn Ldr	Squadron Leader
25.	Sig	Significance
26.	Tech	Technology
27.	Sr	Senior



INTRODUCTION



CHAPTER-1

INTRODUCTION

“ Learning is not a one-time event or a periodic luxury. Great leaders in great companies recognize that the ability to constantly learn, innovate, and improve is vital to their success.” – Amy Edmondson in *Teaming: How Organizations Learn, Innovate, and Compete in the Knowledge Economy*

Career Progression is extremely important for the employees as well as for the organisation. Employees are one of the biggest assets for any organisation and is also one of the most powerful driving force towards its further growth. Not only are the employees responsible for their own growth in terms of their updated domain knowledge and their continuous involvement in contributing by way of a focussed approach and a futuristic thought process for furtherance of their organisation, but the organisations are equally responsible for instituting certain mechanisms to keep the employees motivated to think ahead for their own growth as well as the overall growth of the organisation. In this manner, the employees are likely to be more engaged and committed to their respective professional domain in the organisation. Their skills and knowledge continuously grow through training, on-the-job learning, and other developmental initiatives. It is for the organisation to ensure progression of every employee as a key element of succession programmes, where younger employees are developed as future replacements for senior employees in their hierarchical chain.

Along with the Career Planning, the aspect of a sound Performance Appraisal updation system is of utmost importance which is considered as a continuous method of evaluating the performance of an employee. Performance Appraisal is considered as an objective as well as a systematic way of evaluating various attributes related to the primary work parameters, domain knowledge,

updated knowledge on the latest policies and regulations being issued and updated from time to time, skill development etc, including behavioural parameters as envisaged in the Performance Appraisal policy of the organisation.

Career Planning coupled with skill development is both inevitable and also universal and an inevitable facet for all the organisations. The format and the procedures or methodology adopted may vary from one organisation to the other organisation. However, by and large, the common aim of all the organisations remains the same and that is to enhance the skill and domain expertise of the individuals which in turn would result in overall growth of the organisations in future. Some organisations encourage their employees to opt for exposure to other similar organisations with an aim to study the best practices of other organisations and emulate these in their parent organisation for its overall development. Some organisations follow the scheme of career strengthening by inviting domain experts from other similar organisations and subject their employees to training sessions collectively with the same aim of career enhancement. On the other hand some organisations encourage exchange programmes wherein their employees undergo interactive exchange sessions on various fields related to their organisations. However, in most of the organisations, the scheme of Career enhancement and skill development adopted for their employees are always subject to revision based on their experience over a period of time. The Indian Air Force, has introduced Categorisation Schemes for the officers of various branches with an aim for continues learning, futuristic vision of the officers for the IAF and a continuous learning by default mechanism. *Similarly*, Continuing Professional Development (CPD) can be structured and organised in a number of different ways and for a number of different reasons. While most CPD experiences might be considered as means of introducing or enhancing knowledge, skills and attitudes, it

cannot be assumed that this is uncontested. It is not merely the type of professional knowledge being acquired that is important, but the context through which it is acquired and subsequently used that actually helps us to understand the nature of that knowledge. Analysing the means through which CPD is organised and structured may help us to understand not only the motivation behind such structures, but also the nature of professional knowledge and professionalism itself (Aileen Kennedy, UK University).

The professional performance evaluation in civil domain is carried out under different broad subjects such as terms of professional service engagement, organizational learning and performance, employee training development, etc. However, there is no direct correlation between the methodology adopted by Indian Air Force (IAF) and the civil world.

With the above prelude on Professional Development, the Indian Air Force has adopted the Scheme of Categorisation for the Engineering Officers and the Logistics Officers.

Categorisation Scheme in the IAF- A GLANCE

In the Indian Air Force, categorisation in respect of the Aircrew from the Flying Branch and the officers from the Air Traffic Control, Fighter Controllers and the Guided Weapon stream who are directly linked with operations was introduced in IAF long time back and has proved its relevance to IAF in terms of skill and knowledge based evaluation of personnel deployed on such jobs. Taking queue from the Categorisation and testing of the officers of the Operations and allied branches, a need was felt by the IAF to introduce knowledge based testing for the ground duty branch officers also. Accordingly, categorisation board was for the Engineering Branch Officers and was instituted in the year 2011 at Bangalore and was initially christened as Aeronautical Engineers Categorisation Board (AECB). Subsequently, considering

the performance of the AECB and its value addition to the officers and to the IAF, it was decided to institute a similar Categorisation Board for the Logistics Officers also. After the formation of the Categorisation Board for the Logistics Officers in 2014, the AECB was renamed as Maintenance Officers Categorisation Board (MOCB).

The Maintenance Branch in the Indian Air Force has a Technical Wing comprising of the Aeronautical Engineering Officers v.i.z AE (Aeronautic) and AE (Mechanical) who are responsible for the maintenance of the various types of Air Craft, and allied equipments etc. The other wing of the Maintenance Branch is the Logistics Branch which is responsible for all the activities related to the Supply Chain Management in the IAF in addition to meeting all the local requirements by ensuring Right item at the Right Time in the Right Quantity at Right Place and at the Right Price.

Officers of Engineering and Logistics Branch deployed on Maintenance Branch duties play a very vital and important role in the operations of IAF by way of providing maintenance services to the highly sophisticated and technologically advanced weapon systems. Indian Air Force has in its inventory, the state of the art air assets and weapon systems besides the legacy systems which pose continuous challenge to the Maintenance Branch fraternity in terms of training, technical know-how, availability of spares etc. Therefore, there is a need to conserve the scarce resources in terms of skilled and trained manpower both Officers and Airmen, maintain the depleting inventory as the sources are continuously drying up in the international markets and finally maintain the weapon systems operational at all times despite numerous constraints. Therefore, the officers of Engineering and Logistics Branch deployed on Maintenance Branch duties play a very vital and important role in the operations of Indian Air Force.

Engineering and Logistics officers inducted into IAF undergo ab-initio training on Aeronautical Engineering and Supply Chain Management respectively. Post ab-initio training, the officers are subjected to various professional courses at varying seniority. These courses are designed to ensure up-gradation of knowledge and skills of the officers as they gain seniority and experience. The employability of officers is also dependent on the training status of individuals and their performance in these in-service courses.

In order to perform various maintenance duties and reduce the down time of the availability of Air assets and allied weapon systems, a high degree of professionalism and sound knowledge is considered essential. Hence, categorization of the officers based on their professional competence assumes significant importance. With a view to improve and maintain a high standard of professionalism, knowledge and skill of maintenance branch officers i.e., Aeronautical Engineering Officers and Logistics officers, a categorisation scheme was introduced based on an organisational research carried out for officers upto the rank of Group Captain. The scheme is presently voluntary in nature.

With the successful implementation of the Categorisation Scheme of the Maintenance Branch Officers in the IAF and the outcomes of the Categorization having proved itself over a period of time, it has found its place in the promotion prospects for future generations.

With the above backdrop, the dissertation intends to study the “Effect of Categorisation Scheme on the Professional Competence of the Maintenance Branch Officers in the Indian Air Force.

STATEMENT of the Problem

The IAF has in its inventory the latest State of Art and sophisticated inventory of Air Craft and allied equipment majority of which are Airborne assets and therefore operate in the indefinite boundaries of our skies. Maintenance of these assets which are operated by the Pilots who's safety in the sky is dependent on the maintenance of these machines with professional acumen by the Maintenance Branch officers. Therefore, the fact that the officers of the Maintenance Branch remain updated and current on these sophisticated system which is different for the different Air Craft requires no further elaborations or deliberations. With this prelude, the officers of the Maintenance Branch are subjected to a detailed scan of their professional acumen, updated skills and practical knowledge of the systems of Air Craft and allied systems along with the maintenance practices which are different for different systems and are fast changing with technology advancements.

Therefore, there exists a strong case in hand to study the effect of categorisation On Maintenance Branch Officers in the IAF and verify whether the methodology adopted in Cat Board help enhancing the professional knowledge of the officers or not.

Objectives**The main objectives are:**

- To study the entire Categorisation process followed for the Categorisation of the Maintenance Branch Officers in the Indian Air Force.
- To ascertain if a similar system is existing in the other two wings of the Armed Forces and in other Central /State Services and to make suitable recommendations.
- To determine the efficacy and effectiveness of Categorisation scheme for Maintenance Branch Officers in enhancing professional competence and its overall benefit to the IAF.

- To make suitable recommendations to still improve its objectivity.

Assessment of Objectives

Data availability with Maintenance Officers' Categorisation Board (MOCB) in terms of number of categorized officers.

- Relevant Air Force Orders (AFOs) issued by the Chief of the Air Staff on the subject are available on the AFNET.
- Performance of officers in the Cat Boards are available in descriptive form and not available in digitized format.
- Performance of the categorized officer in the field is not readily available.
- All technical terms can be defined.

Research Design

The ontological position is a mix of objectivities since the theory was validated by carrying out survey through questionnaire method of data collection and constructionist since it was also based on perceptions of various literary works, translations and interpretations. The questionnaire was designed to enable participants to answer objectively based on their experience. Concepts of Implicit and Tacit knowledge was introduced in an easy to understand manner to preclude any subjectivity. The epistemological position is interpretive, since the hypothesis was proved or otherwise through analysis and interpretations of data collected.

Rationale

The training methodology adopted by IAF for its officer cadres have gone through various changes and has evolved over the period. Various courses have

been instituted to impart knowledge both on the general service knowledge and the professional knowledge at different service seniority and rank held from time to time. This would not only prepare the officer to undertake future assignments but also refresh the knowledge and skills required from time to time. These in-service courses have to be mandatorily attended by all the officers. However, there was no further evaluation on the knowledge gained in the in-service courses and the performance of the officer on field. The only measure available to the organisation is the Appraisal Report System.

Till the year 2011, there was no categorisation scheme for ground duty branch officers except the officers from the Flying Branch and allied operations support branches. The aircrew examination board, Guided Weapon Cat Board, Air Traffic Controller (ATC)/Fighter Controller(FC) Cat Boards were only existing which were meant to test the professional capabilities of aircrew and guided weapons, air traffic controlling and fighter controlling which were directly linked with operations. Although the testing includes testing on professional subjects, more impetus was given towards skill based testing.

This skill based knowledge testing has yielded positive results in the organisation. With the IAF acquiring the state of the art weapon systems with high sophistication and technologically advanced weapon system, need was felt to introduce the Categorisation scheme for the maintenance branch officers which include Engineering and Logistics Branches of the IAF.

Scope and Limitations

The overall scope of the research was limited within the ambit of the Categorisation Boards for the Engineering Officers and Logistics Officers in the IAF which commenced from 2011 and 2014 respectively. The scope of the

study is purely restricted to the IAF. The data on performance of maintenance branch officers held with the IAF was not taken into account due to its non availability and confidentiality. The linkage between the category held vis-a-vis the Annual Confidential Report gradings and promotions were kept out of the purview of the study.

Since the concept of Categorisation Boards for officers of Maintenance Branch is specific to the IAF, no literature or data was available in the open source. However available literature akin to various concepts and philosophies related to professional competence etc as prevalent in some other organisations were only available in the open source. Efforts were also made to explore similar concept of Categorisation Boards/Schemes in the Indian Army and Indian Navy, however, no data or inputs could be obtained as such boards are not being conducted either in the Indian Army or the Navy.

Therefore, the data collection and basis for the study was restricted within the IAF in form the data available with the Maintenance Officers Categorisation Board in addition to obtaining inputs in form of questionnaire from those officers who have already successfully cleared the Categorisation Boards or are aspiring to undergo Categorisation.

The dissertation will unfold the Effect of Categorisation on the Maintenance Branch Officers in the Indian Air Force subject to the following limitations:

- The scope of the study was limited only to effect of Categorisation on Maintenance Branch Officers.
- Since similar Categorisation schemes are not being followed in the Army/Navy or in the other Central Services and State services, no data was

available with them.

- The data on performance of maintenance branch officers have not been taken into account due to its confidentiality hence not available for the current research.
- The linkage between the category held vis-a-vis the AR gradings and promotions were kept out of the purview of the study.

Literature Review

A dedicated and detailed literature review was carried out for the dissertation. Attempt was made to identify the literature, articles/reference material/books on similar scheme of Categorisation. However majority of the books and literature highlighted and focussed on various competencies and the positive effect of the enhancement of the competencies on the organisations. have been discussed. As has been already stated above that there was a limitation of the availability of literature/data on the subject of Categorisation of Maintenance Officers in the IAF. However, Air Force Orders issued on the Categorisation of Maintenance Officers Categorisations Board, Exhaustive Guidelines for the Officers Responsible for Conducting the Categorisation Boards, Exhaustive Guidelines for the Officers Aspiring to Appear in Categorisation Boards and Available Records/iterations/decisions were studied and analysed in great details.

As has been already stated above that there was a limitation of the availability of literature/data on the subject of Categorisation of Maintenance Officers in the IAF. However, in addition to the literature available in open source following were also referred:

- ✓ **Air Force Orders,** Air Force Orders on the Categorisation of

Engineering and Logistics Officers were issued in 2011 and 2014 respectively.

- ✓ **Exhaustive Guidelines for the Officers Responsible for Conducting the Categorisation Boards.** Necessary guidelines along with the responsibilities of officers responsible for assessing officers appearing in Categorisation boards are very exhaustive and lays down various aspects in detail to be strictly followed during the process of the boards. It amplifies the sanctity and the objective of the boards. Various mandatory requirements to be fulfilled by the aspirants are also laid down in clear and un-ambiguous manner with special attention to each detail.

- ✓ **Exhaustive Guidelines for the Officers Aspiring to Appear in Categorisation Boards.** Guidelines for the officers of Maintenance Branch aspiring to undergo Categorisation were found to be equally exhaustive. This part of the Air Force Order lays down critical parameters and mandatory pre-requisites for the aspirants. It has laid down the format and basis QRs like past experience, past achievements, the conceptual papers written by the aspiring officers in the past, professional exams passed successfully and other criteria focussed on the professional acumen of the officer.

- ✓ **Available Records/Iterations/Decisions** Necessary Concept papers and other records available with the Maintenance Officers Categorisation Board on the subject ever since the conception of the idea to various deliberation prior to issue of the Air Force Orders were

also studied in details to clearly understanding the genesis of the Categoisation Boards.

Other literature available in the open source has not focussed on the Categorisation of the employees per-se, however have discussed the competencies and professionalism in a generic manner. Efforts were made to identify articles on classification/categorisation of employees, however such concept was not available from the open source.

Research Methods and Data Sources

Research Strategy The research was quantitative in nature and the research strategy followed the ontological position of objectivism, an epistemological position of positivism and a deductive logic of enquiry.

Method of Data Collection Questionnaire surveys were the primary method of research.

Data Collection and Analysis Data was collected through questionnaires and analyzed with the help of Pie Charts and Graphs.

Sample Design

- **Population.** The maintenance branch officers of IAF who had undergone the Categorisation process in specific and also other officers who have fair knowledge on the Categorisation process (approx 1500)

- **Sampling Frame** Maintenance branch officers who could be approached through AFNET/personal mail (approx 150).

- **Sample Size** 73 Officers of varying length of service in different rank and file.
- **Sampling Procedure** Stratified Random Sampling.

Research Problem Statement The study shall research the ‘Effect Of Categorisation on Maintenance Branch Officers in the Indian Air Force’ and verify whether the methodology adopted in Cat Board helps in enhancing the professional knowledge or not.

Research Methodology

Research Strategy The research was quantitative in nature and the research strategy followed the ontological position of objectivism, an epistemological position of positivism and a deductive logic of enquiry.

Chapterisation

The dissertation has been laid out in the Chapters as tabulated below:

CHAPTER – 1- INTRODUCTION

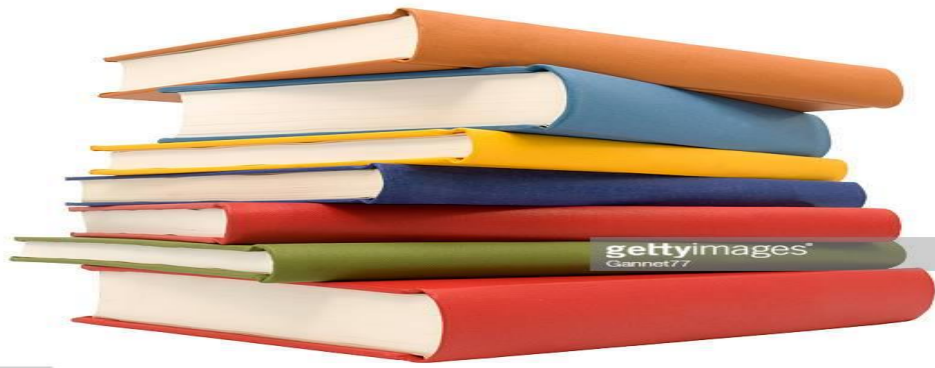
CHAPTER – 2 - LITERATURE REVIEW

CHAPTER – 3- CATEGORISATION PROCESS AND PROCEDURE

CHAPTER – 4 – RESEARCH DESIGN AND DATA COLLECTION

CHAPTER – 5- DATA ANALYSIS

CHAPTER – 6- FINDINGS, RECOMMENDATIONS AND CONCLUSION



LITERATURE REVIEW



LITERATURE REVIEW

Measuring performance of employees is the backbone of any organisation's management. Organisations usually measure employee performance by assessing how much contribution the employee is making towards the growth of the organisation. The level of actual performance by the employee and that expected from them by the organization is conveyed to the employee at the time of their annual performance appraisal or if required during the counseling sessions held for the employee from time to time. Performance appraisal refers to the evaluation of employees, providing them with valuable feedback with an aim to create a positive effect on their future performance. Employee performance depends upon a number of factors such as:

- Conducive Work Environment
- Work Profile
- Salary
- Bonus
- Job Satisfaction
- Policies
- Technology

The above factors play an important role in determining the employee productivity which becomes a force multiplier for the overall organizational development. Organisations can use different strategies and approaches for the purpose of measuring performance of their employees. The five major approaches are:

- Comparative approach,
- Attribute approach,
- Behavioral approach,
- Result Approach and
- Quality approach.

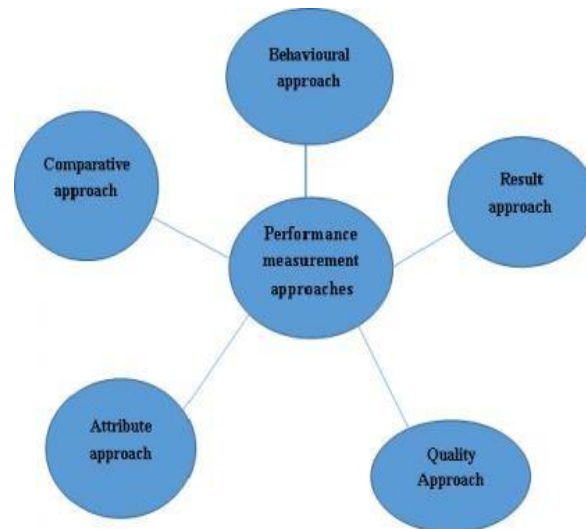


FIGURE 2.1 DIFFERENT APPROACHES OF MEASURING PERFORMANCE

Each of these approaches differ in characteristics and suitability. An organisation can select any one or a combination of these approaches on the basis of its stated goals.

Comparative Approach of Measuring Performance

Comparative approach involves ranking an employee's performance with respect to that of others' in the group. Individuals are ranked on the basis of highest to the lowest performer. There are several techniques for comparative approach such as forced distribution technique, paired comparison and graphic rating scale (Noe 2008). Forced Distribution technique involves ranking employees in groups. For example a group of top performers constituting 10percentage, similarly a group of

average performers constituting 40 percentage, another group of good performers constituting 40 percentage. Finally, a group of low performers constituting the remaining 10 percentage. This ensures reward for the top performers. Given proper training and guidance, these top performers can be promoted to higher managerial positions. While the poor performers are given chance for further improvisation or dismissed in the eventuality of their performance does not fulfilling the standard requirements. This will in turn cause new talent hire (Martocchio 2011).

The system ranks the employees on the basis of Categorisation rules rather than on their performance. In such cases, employees with higher rankings would get better pay than those with lower rankings though they may not deserve it. In *Paired Comparison Technique* the organization compares one performer with the other and assigns a score of 1 for the higher performer. The final performance score is the summation of all the winning points. Comparative approach is undertaken in case of organisations with a small group of employees with similar job profiles. Therefore, the disadvantage is that it is unsuitable in case of firms/organisations with a large number of employees or a firm with different job profiles. Also, since the scale is based on subjective judgment, there is a high chance of bias (Taylor et al. 2007).

Attribute Approach of Measuring Performance

In this system, the employees are rated on the basis of a specific set of parameters such as:

- ✓ Problem Solving Skills,
- ✓ Teamwork, Communication,
- ✓ Judgment, Creativity And
- ✓ Innovation.

Behavioural Approach of Measuring Performance

This is one of the oldest performance measurement techniques. The Behavioural Approach consists of a series of vertical scales for different dimensions of the job. This can be done using BARS technique or BOS technique. The Behaviourally Anchored Rating Scale (BARS) technique consists of five to ten vertical scales. These scales are based on parameters (called “anchors”) which are decided consensually from all employees. Employees are then ranked on each of the anchors according to their performance.

On the other hand, Behavioural Observation Scale (BOS) is a recent version of BARS. It provides a more specific description along with frequency in regards to the employee behaviour for an effective performance. The overall score is the average of all these frequencies. Although the Behavioral approach is suitable for the reliability and accuracy, the major drawback in this approach is the voluminous data that the superior have to remember. Superiors tend to remember only those behaviours that define closely to the performance scale which leads to a biased rating (Bohlander & Snell 2010).

Result Approach of Measuring Performance

This approach is a simple and straight-forward concept, wherein organisation rate employees on the basis of employee performance results. The first type of result approach is the Balanced Scorecard technique. This technique focuses on four perspectives namely:

- ✓ Financial
- ✓ Customer
- ✓ Internal & Operations and
- ✓ Learning & Growth

The second approach is Productivity Measurement and Evaluation System (Pro MES). It is very effective in motivating employees for enhanced productivity and measuring the feedback. It consists of four steps. The first step is to identify the objectives which the organization wants to achieve. The second step measures how well these objectives are made. While the third step involves how effective are they in evaluating the employee performance. Finally, the last step gives feedback to the employees. Organisations calculate an overall productivity score as a summation of the performance scores of all these factors.

The main advantage of result-based approach of performance measurement is that it converts strategy into operations with a more holistic view. It takes into consideration the external environment of the job such as like customers and learning and growth. It does not simply rely on financial indicators of job performance. However the disadvantages are the lack of focus on human resource aspect, and absence of certain key stakeholders in the indicators (Gomes & Romao 2014).

Quality Approach of Measuring Performance

This approach focuses on improving customer satisfaction by reducing errors and achieving continuous service improvisation. This approach takes into consideration both person and system factors. Also employers take regular feedback on the personal and professional traits of the employee from managers, peers and clients to resolve performance issues. The Quality Approach mainly focuses on the use of Kaizen process in order to continuously improve the business processes. The advantages of this approach includes:

- ✓ Assessment of both Employee and System
- ✓ Problem Solving Through Teamwork

- ✓ Use Of Multiple Sources to Evaluate Performance and
- ✓ Involvement of both Internal and External Factors

However practitioners of this approach believe that this approach does not correspond with quality philosophy of an organisation (Noe 2008).

Benefits of Using Performance Measuring Approaches

Organisations can use all these approaches together effectively to evaluate the employee performance. This has positive impact on employees' motivation and they tend to perform better. They can identify their strengths and weaknesses and work on improving their skill sets. Since the employees are well aware of the organizational goals, they can also work on improvising their skills further to achieve them. Employee performance enhances the communication between an employee and the supervisor to discuss job duties and work related issues for a healthy work environment. With the changing trend, more recent techniques and approaches are being formulated to measure employee productivity and organizational performance.

History and Evolution of Competencies

The concept of "competency" was first brought about by Philip Selznick (1957), Robert White (1959), and subsequently David McClelland (1973) remarkably developed the concept of "competency" as significant predictors of employee performance and success. Competencies emerged in the 1980s as a response to organizational changes and to wider changes in society [CIPD (2007)].

David McClelland has pioneered the competency movement across the world. His classic books on "Talent and Society", "Achievement Motive", "The Achieving

Society”, “Motivating Economic Achievement” and “Power the Inner Experience” brought out several new dimensions of the competencies. In 1973, David McClelland, Professor of Psychology at Harvard University and founder of McBer and Company (now part of the Hay Group), wrote a seminal paper: “Testing for competence rather than intelligence”, which created a stir in the field of industrial psychology. McClelland’s research indicated that although traditional academic aptitude and knowledge content tests were good predictors of academic performance, they seldom predicted on-the-job performance. It raised questions about the reliability of intelligence tests as a predictor of job success and stated that ‘the correlation between intelligence test scores and job success often may be an artifact, the product of their joint association with class status’. McClelland went on to argue that the best predictors of outstanding on-the-job performance were underlying, enduring personal characteristics that he called “competencies”. Since then, McClelland’s findings have been cross-culturally validated by 30 years of global competency research carried out by McBer and later by the Hay Group.

Hence, the history of competency can be traced to the early 1970s, when industrial psychologists and human resource managers were seeking ways to predict job performance. McClelland launched the competency movement in the USA by outlining an alternative to the accepted intelligence tests as an approach to predicting ‘competence’. While McClelland’s (1973, 1998) work was focused on applications in the educational sector, greater interest was shown in business and industry. McClelland’s thinking provided a cogent argument against assuming that intelligence tests alone are sufficient to evaluate individual performance. It was the elements of accountability and performance inherent in his thinking that stimulated attention outside educational institutions. Since his study, the competence approach also has been widely utilized and applied in various areas, such as primary and

secondary education, higher education, and organization studies. One of the first academics to take a keen interest in competencies was Richard Boyatzis, who was born and based in the USA [Boyatzis (1982)]. The use of the term “competency” and its meteoric rise to ‘business speaks’ is credited to Richard Boyatzis. His book, written in 1982, and entitled ‘The Competent Manager: A Model for Effective Performance’, proved to have considerable influence on the profession and, over the following two decades, competency frameworks, became an increasingly accepted part of modern HR practice.

In 1991, Gerald Bareett and Robert Depinet [Bareett and Depinet (1991)] came out with their paper “A reconsideration for testing for competence rather than for intelligence”, in which, they argued that though McClelland and his associates believed that intelligence testing should be replaced by competency based training, since 18 years they haven’t been able to produce any professionally acceptable empirical evidence for the same.

Patricia McLagan (1989), Signe Spencer (1993) and David Ulrich (1995) further developed the concept of “competency” for the organization’s survival and sustained competitive advantage. Measures of competence were initially developed in the US to aid recruitment because traditional tests of cognitive intelligence were held to be poor predictors of job performance [White (1959)]. Rather than testing for intelligence, competence-based selection aimed to identify individuals having a psycho-social attributes associated with superior performance (McClelland (1973)). This approach was brought to Europe by American companies having transnational operations and especially by the consulting firm Hay McBer because one of the founding members was David McClelland, the main advocate of ‘competency ‘ McClelland (1976, 1998). It is worth noting that McClelland, like White, originally

used the term “competence” and only later adopted the term “competency”, without any change in meaning.

During the 1980s, European competence-based approaches to education and training started to appear that were quite distinct from and independent of the US model, first in the UK, then in France and later in Germany. In all three countries the focus has been more on occupations than individuals, but with quite different approaches to competence. They have become the three dominant European models, strongly influencing how competence is perceived in other Member States.

The UK adopted a competence-based training system centered on a unified national framework of vocational qualifications based on occupational standards of competence, grounded in functional analysis of occupations in a variety of contexts [Mansfield and Mitchell (1996)]. From a starting point that viewed competence as “the ability to perform activities in the jobs within an occupation, to the standards expected in employment” [IiP UK (1995)], the definition became expanded, following a government review of vocational qualifications in 1996, to “the ability to apply knowledge, understanding and skills in performing to the standards required in employment. This includes solving problems and meeting changing demand” [Beaumont (1996)]. It is interesting that government definitions made no reference to social or behavioural issues, despite the importance these had been accorded by employers. In practice, however, employers increasingly adopted hybrid systems that included behavioural as well as functional competences [Winterton and Winterton (2002)]. In the case of the occupational standards for managers developed by the Management Charter Initiative (MCI), a parallel set of behavioural “competencies” was developed to supplement the original functional standards.

The adoption of competence-based qualifications in the UK polarized the education and training community. The leading advocates of competence-based approaches mostly came from vocational training, and were often involved in developing, implementing or evaluating occupational standards in practice [Mansfield (1993); Mansfield and Mitchell (1996); Winterton and Winterton (1995, 1996)]. Critics largely came from education, and especially higher education, and viewed competence-based approaches as being inherently reductionist [Ashworth and Saxton (1990); Bates (1995); Burgoyne (1993); Hyland (1997); Stewart and Hamlin (1992a, b)].

Understanding Competencies

Meaning and Definition of the Term “Competency” : Competency has its origins in the Latin word ‘competentia’ which means “is authorized to judge” as well as “the right to speak” (Caupin et al. (2006). The English dictionary defines the word ‘competence’ as the state of being suitably sufficient or fit.

Competency means ‘the underlying attributes’ of an individual, such as knowledge, skills, or abilities. Boyatzis (1982) defined competency as ‘an underlying characteristic of a person which results in effective and/ or superior performance in a job’. An underlying characteristic could include a motive, trait, skill, an aspect of one’s self image or social role, or a body of knowledge. Spencer and Spencer, who advanced Boyatzis’ original work, define competency as an ‘underlying characteristic of an individual that is causally related to criterion referenced effective and/or superior performance in a job or situation’ (Spencer and Spencer (1993). The use of this definition creates a focus on the required inputs of individuals in order for them to produce competent performances (Hoffman (1999).

Decomposing in a more developable, acceptable, and defensible manner, competency is described as “a cluster of knowledge, skills, abilities, behaviours, and attitudes related to job success and failure” Byham and Moyer (2000); Cooper (2000); Green (1999); Lucia and Lepsinger (1999); Parry (1996).

A competency is the capability of applying or using knowledge, skills, abilities, behaviours, and personal characteristics to successfully perform critical work tasks, specific functions, or operate in a given position. Competencies are thus underlying characteristics of people that indicate ways of behaving or thinking, which generalizes across a wide range of situations and endure for long periods of time. Personal characteristics may be mental/intellectual/cognitive, social/emotional/attitudinal, and physical/psychomotor attributes necessary to perform the job [Dubois (1993); Lucia and Lepsinger (1999)].

Those who spend efforts in examining competency are immediately struck by the lack of uniform definitions, compositions, and methodologies which, of course, lead to misunderstanding, wandering, and waste [Cooper (2000); Dalton (1997)]. Strebler et al. (1997) asserted that the term has no widely accepted single definition. Its meanings defined by standard dictionaries are broad, vague, and inferred which subject to a variety of interpretations.

However, since early pioneering investigations, it is generally agreed that competency can be clinically defined as “a person’s underlying characteristics that are related to effective or superior performance in a job or situation” Boyatzis (1982, 1996); Klemp (1980); Spencer and Spencer (1993). This study seeks to probe deeper into the concept of competency, tracing its root and its role in the present context. This study reviews global leading articles on competencies for the purpose of gaining in-depth insights into the competencies. Here is the snapshot of the extensive literature survey.

Boyatzis (1982, 2007) identified 19 generic competencies, that outstanding managers tend to have, and clubbed those 19 generic management competencies into five distinct clusters, as goal and action management, leadership, human resource management, directing subordinates and focus on others. Boyatzis defined competency as an “underlying characteristic of a person which results in effective and/or superior performance in a job.” Boyatzis adopted the term competency as a characteristic of an individual that is causally (change in one variable cause change in another) related to superior performance in a job. Boyatzis expanded the definition to include “a motive, trait, skill, aspect of one’s self image or social role, or a body of knowledge.

Spencer and Spencer (1993) who advanced Boyatzis’ original work defined competency as an “underlying characteristic of an individual that is related to criterion referenced effective and/or superior performance in a job or situation”. They classified competencies into two categories: threshold and differentiating competencies. Threshold competencies are “those essential characteristics that everyone must acquire to be minimally effective, but that does not distinguish superior performers from average performers”. Differentiating competencies are “those factors that distinguish superior from average performers”.

McClelland (1973) presented data that traditional achievement and intelligence scores may not be able to predict job success and what is required is to profile the exact competencies required to perform a given job effectively and measure them using a variety of tests. He defined ‘competence’ as “a personal trait or set of habits that leads to more effective or superior job performance”, in other words, an “ability that adds clear value to the efforts of a person on the job”.

Cernusca and Dima (2007) in their research essay explained the

concept of competency and how competency is linked to performance and one's career development. The authors also look into some models of competency mapping and appraisal tools for performance management. A business might possess extremely capable human resources, but they might not work on the position that suits them. This is where competency mapping and the appraisal tools come to help the HR experts choose who should work on what position.

Kodwani (2009) has focused on the performance as the mantra of today's business organization. People with right abilities are able to perform better. Competencies are the set of such skills and abilities (technical as well as behavioural) which are required for desired level of performance. Right competencies are the key to superior performance.

Rothwell et al. (2004) addressed competency efforts in the USA programs have evolved from an early focus on distinctions between best-in-class (exemplary) and fully-successful performers to become a link between organizational strategy and organizational and individual performance. Interests in competency-based approaches are growing. Training and development professionals are using competency models to clarify organization-specific competencies to improve human performance and unify individual capabilities with organizational core competencies.

Rothwell and Lindholm (1999) mentioned that employee competency efforts in the USA have evolved from an early focus on distinctions between best-in-class (exemplary) and fully successful performers to become a link between organizational strategy and organizational and individual

performance. Training and development professionals are using competency models to clarify organization-specific competencies to improve human performance and unify individual capabilities with organizational core competencies.

Rice (2006) reflected on the leadership development among healthcare executives in the USA. According to the author, competency-based leadership development does not just drift, however it intentionally focuses on clear career aspirations.

LeBoterf (1998) said that competencies are not themselves resources in the sense of knowing how to act, knowing how to do, or attitudes, but they mobilize, integrate and orchestrate such resources. This mobilization is only pertinent in one situation, and each situation is unique, although it could be approached as an analogy to other situations that are already known.

Gaspar (2012) found that competency based selection method is healthy, structured and comprehensive. Candidates are evaluated on the competencies they need to demonstrate, when inducted into the organization.

Page and Wilson (1994) after reviewing as many as 337 citations regarding competencies, defined it as “the skills, abilities, and personal characteristics required by an ‘effective’ or ‘good’ manager”. The point to note about this definition is the inclusion of directly observable and testable competencies, such as knowledge and skills, and the less assessable competencies related to personal characteristics or personal competencies.

Spector (1997) defined knowledge, skills, abilities, and other characteristics (KSAOs). “Knowledge” is what a person knows that is relevant to the job. “Skill” is what a person is able to do on the job. “Ability” (mental, physical, and psychomotor) is the capacity to learn a skill, and “other characteristics” include attitudes, beliefs, personality characteristics, temperaments, and values.

Hoffmann (1999) mentioned the applications of the use of the term “standards” to refer to a minimum acceptable level of performance, to the need to standardize performances across parts of a company, to manage change, and to higher levels of acceptable performance than before.

In an effort to provide a complete understanding of the different aspects that the term “competency” incorporates, some of the more frequently cited definitions from the literature include:

- ✓ A combination of tacit and explicit knowledge, behaviour and skills that gives someone the potential for effectiveness in task performance [Draganidis and Mentzas (2006)].
- ✓ Personal characteristics that contribute to effective managerial performance [Albanese (1989)].
- ✓ The characteristics of a manager that lead to the demonstration of skills and abilities, which result in effective performance within an occupational area [Hogg (1989)].
- ✓ The ability to perform effectively the functions associated with management in a work situation [Hornby and Thomas (1989)].

- ✓ Those characteristics- knowledge, skills, mindsets, thought patterns, and the like-that, when used either singularly or in various combinations, result in successful performance [Dubois (1998)].
- ✓ Competencies are measurable human capabilities that are required for effective work performance demands [Marrelli (1998)].
- ✓ A capacity to mobilize diverse cognitive resources to meet a certain type of situation [Perrenaud (2000)].
- ✓ Sets of behaviours that are instrumental in the delivery of desired results or outcomes [Bartram et al. (2002)].

The skills, knowledge, abilities and other characteristics that someone needs to perform a job effectively [Jackson and Schuler (2003)].

A meticulous analysis of the above definitions reveal that the differences in the following dimensions were distinguished: job versus role focus, context free versus context specificity; knowledge versus capability, behaviour versus ability, specificity versus generality; learnability versus unchangeability, performance versus development orientation; core versus peripheral capabilities, and the person versus the system as a carrier. Broadly, competencies have been defined to refer to three aspects:

- ✓ Observable performance [Boam and Sparrow (1992); Bowden and Masters (1993)],
- ✓ The standard or quality of the outcome of an individual's performance [Rutherford (1995); Hager et al. (1994)], or
- ✓ The underlying characteristics of a person [Boyatzis (1982); Sternberg and Kolligion (1990)].

Clearly, there is a wide range of definitions, underscoring the difficulty of pinpointing a standard definition of the term. Any analysis of competencies requires careful definition because of the considerable variance in the use of the term 'competencies' in the literature. From this critical literature review, it is clear that the

definition of competency is one of the most fraught tasks in the research, with little agreement among researchers. Although the meaning and definition of the term ‘competency’ is still subject to debate [Shippman et al. (2000)], for the purpose of our study, we adopted the definition of competency as “a cluster of related knowledge, skills, and attitudes that affect a major part of one’s job (a role or responsibility), that correlates with performance on the job, that can be measured against well-accepted standards, and that can be improved via training and development” [Lucia and Lepsinger (1999)]. Competencies conceptualized in such a way are “something that people actually do and can be observed” [Campbell et al. (1993)] and it also includes the collection of success factors necessary for achieving important results in a specific job. Success factors are combinations of knowledge, skills, abilities and other characteristics more historically called “KSAOs”) that are described in terms of specific behaviours, and are demonstrated by superior performers in those jobs or work roles.

Literature Review within the Indian Air Force

As has been already stated above that there was a limitation of the availability of literature/data on the subject of Categorisation of Maintenance Officers in the IAF. However, literature review carried out as stated in the following paragraphs.

Air Force Orders : Air Force Orders on the Categorisation of Engineering and Logistics Officers were issued in 2011 and 2014 respectively. These two orders are exhaustive in nature and bring out various aspects on the subject as follows:-

Exhaustive Guidelines for the Officers Responsible for Conducting the Categorisation Boards : Necessary guidelines along with the responsibilities of officers responsible for assessing officers appearing in Categorisation boards are very exhaustive and lays down various aspects in detail to be strictly followed during the process of the boards. It amplifies the sanctity and the objective of the boards.

Various mandatory requirements to be fulfilled by the aspirants are also laid down in clear and un-ambiguous manner with special attention to each detail.

Exhaustive Guidelines for the Officers Aspiring to Appear in Categorisation

Boards : Guidelines for the officers of Maintenance Branch aspiring to undergo Categorisation are equally exhaustive. This part of the Air Force Order lays down critical parameters and mandatory pre-requisites for the aspirants. It has laid down the format and basis QRs like past experience, past achievements, the conceptual papers written by the aspiring officers in the past, professional exams passed successfully and other criteria focussed on the professional acumen of the officer.

Available Records/Iterations/Decisions : Necessary Concept papers and other records available with the Maintenance Officers Categorisation Board on the subject ever since the conception of the idea to various deliberation prior to issue of the Air Force Orders were also studied in detail to clearly understand the genesis of the Categorisation Boards.

Other literature available in the open source has not focussed on the Categorisation of the employees per-se, however have discussed the competencies and professionalism in a generic manner. Efforts were made to identify articles on classification/categorisation of employees, however such concept was not available in the open source.



CATEGORISATION PROCESS AND PROCEDURE



CATEGORISATION PROCESS AND PROCEDURE

Engineering and Logistics officers inducted into IAF undergo ab-initio training on Aeronautical Engineering and Supply Chain Management respectively. These officers form the pillars of the maintenance branch of IAF. On completion of this training they undergo various in-service professional courses specific to their domain specialisation at varying seniority in the IAF. These courses are designed to ensure up-gradation of knowledge and skill as they gain seniority and experience. The employability of officers is also dependent on the training status of individuals and their performance in these courses.

Therefore, a need was felt to evolve a methodology which enables consolidation of the professional competence as well as professional skills attained by each officer at various stages of rank and seniority. With this backdrop, a scheme of Categorisation of the officers was conceptualized as a platform for a foolproof assessment of the officers in terms of their proficiency in performing various professional duties and discharging responsibilities. With a view to improve and maintain a high standard of professionalism, knowledge and skill of maintenance branch officers i.e., Aeronautical Engineering Officers and Logistics Officers, a Categorisation scheme was introduced based on an organisational research carried out for officers upto the rank of Group Captain. The Categorisation Scheme was introduced for the Engineering Officers v.i.z Aeronautical Engineers (Mechanical) and Aeronautical Engineers (Electrical) and Logistics Officers of the Maintenance from 2011 and 2014 respectively. In order to facilitate Categorisation of the officers, a Categorisation Board was constituted with officers with high level of domain expertise and experience. The scheme is presently voluntary in nature. However,

depending on the successful implementation and outcome of the scheme, it will find its place in the promotion prospects for future generations.

The introduction of the concept of Categorisation of the Maintenance Branch Officers in the Indian Air Force has undergone a large number of iterations prior to its formal acceptance. The conceptualisation of the Categorisation of the Maintenance was a result of feedback and deliberations within the IAF. Upon its formal acceptance, Air Force Orders (AFOs) were issued under orders of the Chief of the Air Staff. The first AFO was issued on 09 Nov 2011 under the title 'Categorisation Scheme for the Aeronautical Engineering Branch Officers'. This AFO comprehensively covered the various details of the Categorisation scheme and laid down the detailed guidelines to be followed for the Categorisation exclusively for the Engineering Officers in the IAF. In 2011, the scheme of Categorisation was in vogue only for the Aeronautical Branch in the Indian Air Force.

Subsequently, after a period of almost three years of Categorisation of the Engineering Officers and its successful implementation, it was decided to emulate the same scheme of Categorisation for the Logistics Branch Officers in the IAF. After due deliberations of the benefits of the Categorisation of the Engineering Officers, both individually to the officers as well as the benefits accrued over the past three years for the organisation, the similar concept for Categorisation of the Logistics Officer was formally conceived for the officers of the Logistics Branch in the year 2014. After the formal approval of the Categorisation of Logistics Branch officers, the initial AFO on the subject issued for the Aeronautical Branch officers was superseded by another AFO issued on 09 Jan 2014 and the AFO issued in 2011 was renamed as "Maintenance Officers Categorisation scheme. This AFO issued in 2014 was subsequently amended on 10 Aug 16 and is presently in vogue. Salient features of the

Categorisation for the Maintenance Branch officers is covered in the following paragraphs.

Expectations of the Categorisation Board

During the course of their initial training at the academy, the officers are familiarized with the Categorisation scheme in detail. The officers appearing for Categorisation Board are expected to prepare themselves sufficiently in advance for the level of Categorization (Cat 'A', Cat 'B' or Cat 'C') the officer wishes to appear in. During the passage of time and varied experience gained by the officers during their various postings, the officers are expected to write concept papers on organizational, professional or any other subject and continue to build his/her work done during the course of their service tenures and prior to appearing in the Categorization Board. The officers are expected to consolidate their past achievements in terms of any specific achievements or conceptual work successfully done by them. The officers are expected to present any conceptual paper written by them concerning their domain knowledge or any other innovative work successfully accomplished by them. Each of these aspects have credit marks which are awarded to them by the examiners of the Categorisation Board.

In addition, the officers are expected to prepare themselves well in advance to undergo a detailed examination both objective as well as theoretical including practical/situational problems related to their professional domain assigned to them during the conduct of their Categorisation Board. There are credit points which are assigned towards each phase of the Categorisation.

Categorisation

The proficiency level associated with each category in respect of Engineering and Logistics Officers are well defined for the three categories viz., Cat A, Cat B, Cat C in

the descending order of merit. In other words Cat A is the highest category of Categorisation which is awarded to an officer with 'Exceptional Professional Knowledge and Skill' who meets the desired level of professionalism and domain knowledge being a specialist officer. On the other hand, Cat B is awarded to those officers with 'Above Average Professional knowledge and Skill', hence this Category is placed below the Cat A in the order of merit. Cat C is awarded to those officers with 'Average Professional knowledge and skill'. On detailed study of the Categories awarded to the officers in the past, it has been seen that most of the officers who are very junior in service are successful in getting placed in Cat C owing to their limited experience and domain knowledge.

The eligibility criteria for each of the category is comprehensively specified in the Air Force Order issued for the purpose of Categorisation. The training requirements as well qualifying percentage for award of each category is laid down. The Categorisation Board exams are held at nodal centers. The examination comprises of four parts as mentioned below:-

- Written examination
 - Part I – General Paper
 - Part II – Specialist Paper
- Practical
- Presentation by the officer on any subject decided by the Categorisation Board.
- Viva-voce

The Categorisation Scheme is primarily focused on categorizing the officers by gauging their proficiency in performing various professional duties and discharging responsibilities. The Categorisation scheme is applicable to officers of Engineering and Logistics branches of IAF. The category assigned would indicate their proficiency in undertaking various tasks and roles.

The responsibility of Categorisation of the officers in various categories is vested with the specialist officers of the Technical Branch and the Logistics Branch. These officers are all CAT-A officers in their respective domains and have different roles in the Categorisation Boards. A category once earned by an officer would be valid for a period of two years unless the same is upgraded / downgraded / revalidated during the course of the year.

Classification of Categories

The proficiency level associated with each Category in respect of Maintenance Branch officer is given below:-

Table -3.1
Categories vis-à-vis Assessment

Category	Meaning
A	Officer with „Exceptional“ knowledge and skill on Engineering/Logistic functions and meeting stipulated training criteria.
B	Officer with „Above Average“ knowledge and skill on Engineering /Logistic functions and meeting stipulated training criteria.
C	A Lgs officer with „High Average“ knowledge and skill on Logistic functions and meeting stipulated training criteria.

Source: Air Force Orders

Qualifying Percentage

Table: 3.2

Sl. No.	Cat	Qualifying Percentage				Remarks
		Written	Practical	Presentation	Viva	
1.	A	80	80	80	80	Exceptional
2.	B	70	70	70	70	Above Average
3.	C	60	60	N/A	N/A	High Average

Source: Air Force Orders

System of Assessment: Officers are tested and awarded Categories based on overall performance in Categorisation Board Examination. The methodology, scope and syllabus of testing for various categories is tabulated below:

Validity of Cat: All Categories v.i.z Cat A, Cat B and Cat C becomes effective from the date on which the appropriate tests are completed. They will be valid for a period of two years unless upgraded/downgraded/revalidated in the course of the year. The Category awarded is required to be revalidated / upgraded from a lower to a higher Category prior to the expiry of the Category held by the officer. Inability to perform up to the required minimum standards of 'C' will be deemed as a failure and no Category will be awarded. This is to be recorded in the individual's dossier at the Maintenance Officers Categorisation Board . Three such successive failures are to be deemed as criterion for an officer to be termed as 'weak officer'.

Practical : A practical test conducted during initial/ revalidation of Cat A, B & C would be domain specific. The officers are expected to be well versed with all the aspects of the activity including testing procedure, flight safety considerations, precautions and use of correct tools and testers.

Presentation : The topic of the presentation is intimated to the examinee at least four weeks in advance. The topic is generally relevant to the deployment profile and seniority of the examinee. The presentation is expected to be for 20 min duration excluding time for questions and discussion.

Viva-voce : The scope of viva-voce would encompass the entire written, practical and presentation topics in the category for testing.

Recognition by Cat Board

All officers who upgrade their Category to 'Cat A' are eligible to wear proficiency badge (Himalayan Eagle) as a mark of professional identity on the uniform. Further as the category held by an officer reflects his / her professional caliber, it would be the endeavour to consider the category of an individual for career profile. Also, such officers will benefit in promotion boards by getting the credit of 1 mark.



RESEARCH DESIGN: DATA COLLECTION



CHAPTER -4**RESEARCH DESIGN: DATA COLLECTION****Background**

The training methodology adopted by IAF for its officer cadres have gone through various changes and has evolved over the period. Various courses have been instituted to impart knowledge both on the general service knowledge and the professional knowledge at different service seniority and rank held. This would not only prepare the officer to undertake future assignments but also refresh the knowledge and skills required from time to time. These in-service courses have to be mandatorily attended by all the courses. However, there was no further evaluation on the knowledge gained in the in-service courses and the performance of the officer on field. The only measure available to the organisation is the Appraisal Report system.

Till the year 2011, there was no Categorisation Scheme for ground duty branch officers which include maintenance branch officers. The aircrew examination board, GW Cat Board, ATC/FC Cat Boards were only existing meant to test the professional capabilities of aircrew, guided weapons, air traffic controlling and fighter controlling. Although the testing includes testing on professional subjects, more impetus was given towards skill based testing.

The skill based knowledge testing has yielded positive results in the organisation. With Indian Air Force acquiring the state of the art weapon systems with high sophistication and technologically advanced weapon system, need was felt to introduce the Categorisation Scheme for the Maintenance Branch Officers which include engineering and logistics branches of Indian Air Force.

Research Hypothesis

In view of the foregoing, the research hypothesis is as given below:-

The methodology adopted in the Categorisation board for maintenance branch officers of IAF help enhance the professional knowledge.

✓ **Null Hypothesis (H0)** : The Null hypothesis is as given below:-

H0 : The testing methodology adopted in the Categorisation Board for maintenance branch officers of IAF does not help enhance the professional knowledge.

✓ **Alternate Hypothesis (H1)** : The testing methodology adopted in the categorization board for Maintenance Branch Officers of IAF help enhance the professional knowledge.

CONSTRUCTS : To measure the efficacy of the testing methodology of the Categorisation Board, the same is divided into four Constructs as follows:-

Construct 1- Performance In Knowledge Tests : The performance in knowledge tests that assess the basic and system specific knowledge, writing abilities, logical approach with correct facts and figures measures explicit knowledge.

✓ **Null Hypothesis (H01)** : Performance in Knowledge Tests is not measuring the explicit knowledge of the officers of the Maintenance Branch during the Categorisation Board.

✓ **Alternative Hypothesis (HA1)** : Performance in Knowledge Tests is not measuring the explicit knowledge of the officers of the Maintenance Branch

during the Categorisation Board.

Construct 2- Situation Reaction Tests

- **Null Hypothesis (H02) :** The ability to convey with brevity and clarity and application of mind is not measured in the situation reaction tests measures explicit knowledge during the Maintenance Branch Categorisation Boards.

- **Alternate Hypothesis (HA2) :** The ability to convey with brevity and clarity and application of mind is measured in the situation reaction tests measures explicit knowledge in the Maintenance Branch Categorisation Boards.

Construct 3: Responsiveness in Practical Situations.

- **Null Hypothesis (H03) :** The responsiveness of an officer in facing practical scenarios does not measures the tacit knowledge in the Maintenance Branch Categorisation Boards.

- **Hypothesis(HA3) :** The responsiveness of an officer in facing practical scenarios measures tacit knowledge in the Maintenance Branch Categorisation Boards.

Construct 4: Ability to Carry Out Research

- **Null Hypothesis(H04) :** The ability to carry out research and present the recommendations by appropriate utilisation of available resources is not measuring the tacit knowledge during the Maintenance Branch Categorisation Boards.

- **Alternate Hypothesis (HA1) :** The ability to carry out research and present

the recommendations by appropriate utilisation of available resources measures the tacit knowledge during the Maintenance Branch Categorisation Boards.

Variables : The following are the variables for each of the constructs on which the study would measure based on a questionnaire. The questionnaire would be circulated amongst the target audience i.e., Maintenance Branch Officers of IAF in particular and to all other officers to broadly obtain their feedback on the Categorisation system in IAF.

➤ **Knowledge tests.**

- ✓ Basic Knowledge
- ✓ System specific Knowledge
- ✓ Writing ability
- ✓ Logical
- ✓ Facts and figures

➤ **Situation Reaction Tests**

- ✓ Verbal Communication
- ✓ Brevity and clarity
- ✓ Application
- ✓ Inferential
- ✓ Responsiveness

➤ **Practical Scenarios**

- ✓ Assimilation

- ✓ Methodology
- ✓ Application
- ✓ Aptitude
- ✓ Innovativeness
- ✓ Safety Consciousness
- **Ability to Carry Out Research**
 - ✓ Research
 - ✓ Time management
 - ✓ References
 - ✓ Logic
 - ✓ Confidence

Final Questionnaire : In the final questionnaire, 35 questions were retained. The final questionnaire is placed at Annexure '1'.

Research Design & Parameters:

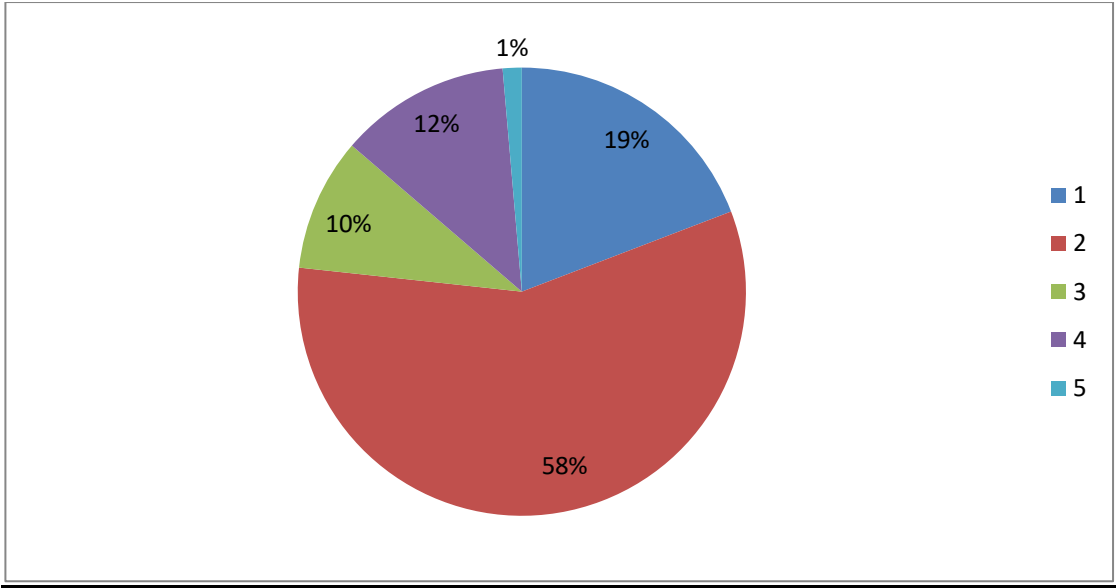
This is an original research undertaken by the participant floating questionnaire and obtaining authentic response to form as part of primary data. There is no secondary data available on the subject in the environment. The essential research parameters are tabulated below:-

Table: 4.1

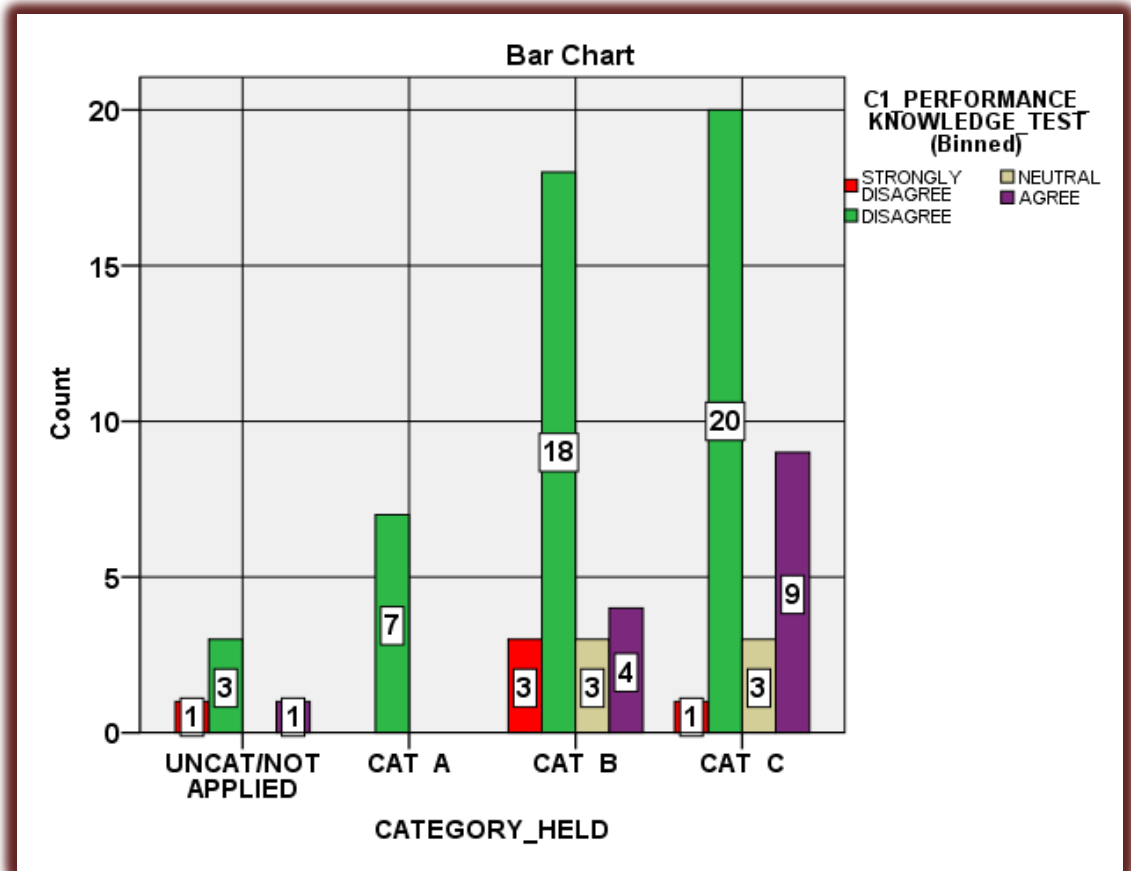
Research Diagnostic Details

Type of Research	Diagnostic
Methods Used	Recording and examination of questionnaire
Nature of Data	Primary data collected through questionnaire

Source of Data	The data is obtained from officers of IAF
Scope and Limitations	<ul style="list-style-type: none"> ✓ The scope of the study has been limited only to the effect of Categorisation on Maintenance Branch Officers in the IAF. ✓ The data on performance of maintenance branch officers have not been taken into account due to its non availability. ✓ The linkage between the category held vis-a-vis the AR gradings and promotions are kept out of the purview of the study.
Response to Questionnaire	The responses to the questionnaire were obtained through in person/service mail on AFNET.



DATA ANALYSIS



CHAPTER-5

DATA ANALYSIS

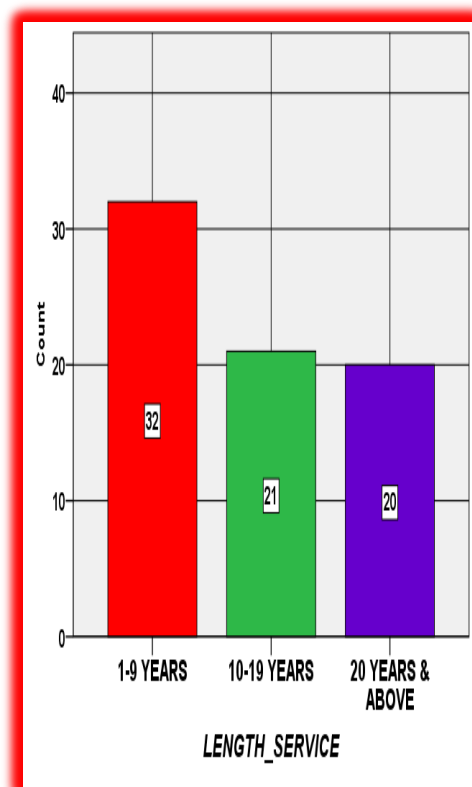
Categorisation Board is applicable to all the officers in the Indian Air Force as it was conceptualized for the overall benefits to the individual officers in addition to huge benefits to the IAF as an organization. Therefore, the entire strength of officers in IAF forms the population of the study. However, since at this point of time the Categorisation is purely optional, therefore officers who have appeared in the Categorisation boards are the only ones who actually form part of the population (2000 approx officers). A questionnaire was prepared with all main focus primarily on the four Constructs and with due diligence in order to get a realistic feedback from the respondents. For the purpose of the present dissertation, responses to the questionnaire were sought from approximately 150 officers of the Maintenance Branch who have subjected themselves to the Categorisation Board besides those officers who volunteered to respond even though they have not appeared in the Categorisation Board. The questionnaire was sent by post and in person to the officers. Out of 150 officers to whom the questionnaire was dispatched, response was received from 73 officers. The questions were collated Construct wise and then analysed.

Final questionnaire had 35 questions and the construct wise analysis has been carried out on 24 questions found to be relevant to each construct including certain very crucial ones. Remaining 11 questions which were found to have some relevance to the dissertation subject were also analysed. The final questionnaire is placed at Annexure '1'. Summary of the responses with reference to each Construct from various stakeholders has been analysed in the succeeding paragraphs with the

help of Pie Charts and Graphical representation .

Consolidated Details of all the respondents Length of Service vis-à-vis Category Held :

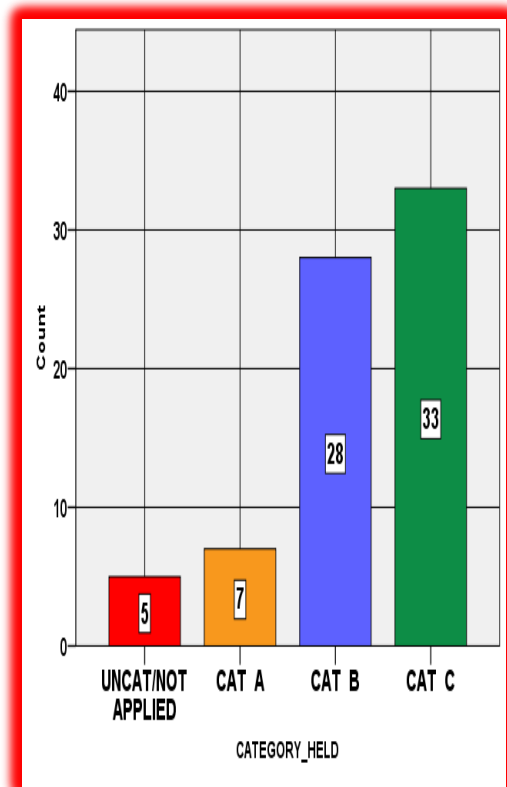
At the outset, a dedicated study of the responses received was made in relation to the length of service as well as the various Categories held by each of the respondents. For better appreciation of the responses to the questionnaire, a consolidated table has been extrapolated and placed below:



Source : Field Survey

Fig : 5.1

LENGTH OF SERVICE RESPONDENTS



Source : Field Survey

Fig : 5.2

CATEGORY WISE RESPONDENTS

- **Length of Service Wise Respondents (Fig : 5.1) :** From table-1, it may be seen that the respondents who submitted their responses were ranging in the length of commissioned service from one year to nine years and officers with more than 20 years of service. In other words, the responses were received all across the officers with varying service seniority and experience ranging from

1 year to above 20 years.

- **Category (Held) Wise Respondents (Fig : 5.2) :** From the table-2 above, it may be seen that the respondents who submitted their responses were ranging from officers who are yet to be Categorised and those who have already been Categorised as UNCAT (5 Officers)‘CAT- C (7 officers) ’, ‘CAT-B (28 Officers)’ and ‘CAT-A (33 officers)’. It was seen that the respondents in different Categories represented a fairly justifiable population for providing a realistic feedback to the questionnaire.
- For better appreciation, a consolidated table showing both length of service wise as well as Category held is tabulated below.

Table : 5.1

RESPONDENT WISE CROSS TABULATION OF LENGTH OF SERVICE AND CATEGORY HELD

LENGTH_SERVICE ^ CATEGORY_HELD Crosstabulation						
Count						
		CATEGORY_HELD				
		UNCAT/NOT APPLIED	CAT A	CAT B	CAT C	Total
LENGTH_SERVICE	1-9 YEARS	5	7	20	0	32
	10-19 YEARS	0	0	8	13	21
	20 YEARS & ABOVE	0	0	0	20	20
Total		5	7	28	33	73

Source : Field Survey

Scaling of Responses. The corresponding responses to each questionnaire were evaluated with numeric values 1 to 5 for responses ranging from “Strongly Disagree

(1)”, “Disagree (2)”, “Neutral (3)”, “Agree (4)” and “Strongly Agree (5)”. Colour coding adopted for each response option is tabulated below.

Option	Colour Coding	Numerical Values
STRONGLY DISAGREE		1
DISAGREE		2
NEUTRAL		3
AGREE		4
STRONGLY AGREE		5

ANALYSIS OF CONSTRUCTS, KEY VARIABLES AND HYPOTHESIS

All the 35 questions were segregated in respect of each Construct for better appreciation and analysis of the responses. Out of the 35 questions forwarded to the officers, a total of 24 questions were segregated in respect of each Construct. Key variables are contained in each specific question of the questionnaire construct wise and then analysed in the form of pie charts and graphical representation as follows :

<u>Construct No</u>	<u>Construct</u>	<u>No. of Questions</u>
Construct 01	Performance In Knowledge Tests	06
Construct 02	Situation Reaction Tests	06
Construct 03	Responsiveness in Practical Situations	09
Construct 04	Ability to Carry Out Research	03
Others	N/A	11

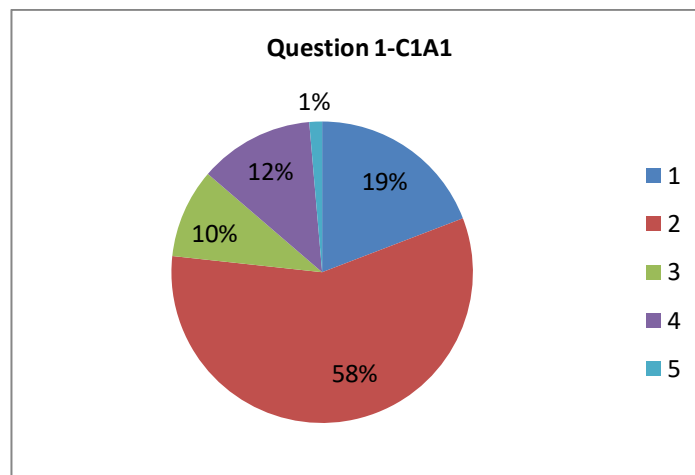
Construct-1

Performance in Knowledge Tests. The performance in knowledge tests that assess the basic and system specific knowledge, writing abilities, logical approach with

correct facts and figures measures explicit knowledge. Construct 1 has six questions in all. The analysis of individual questions measure C1(A1, A2, A3, A4, A5 and A6) is shown below in form of pie charts and graphical representations.

Question-1(C1A1) : The present training pattern is adequate to measure and gauge the professional caliber of Maintenance Branch Officer.

Fig:53

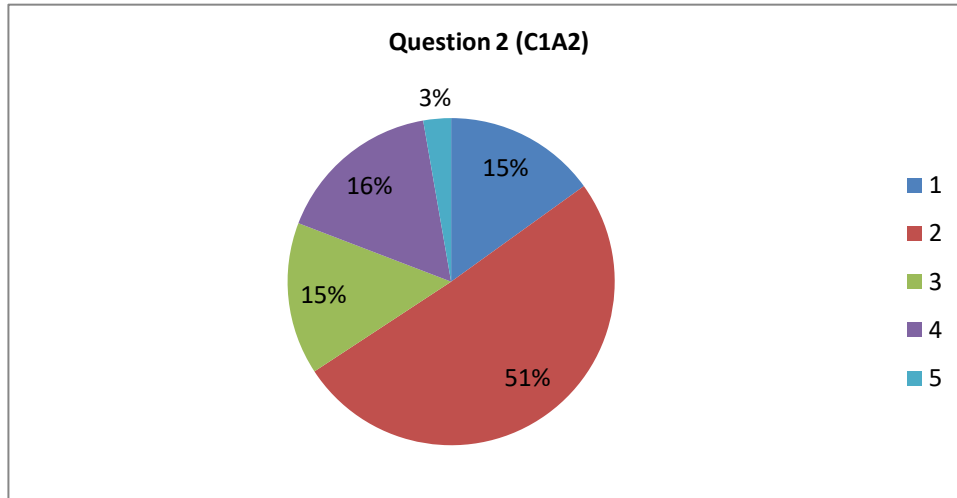


Source : Field Survey

- **Inference :** 77 percentage of the respondents disagree with the variable given above. Hence a key concept is established that the present training pattern is not adequate to measure and gauge the professional caliber of Maintenance Branch Officers.

Question-2 (C1A2) : Measure of professional knowledge is taking place in IAF at regular intervals other than Cat Board and Appraisal System.

Fig: 5.4

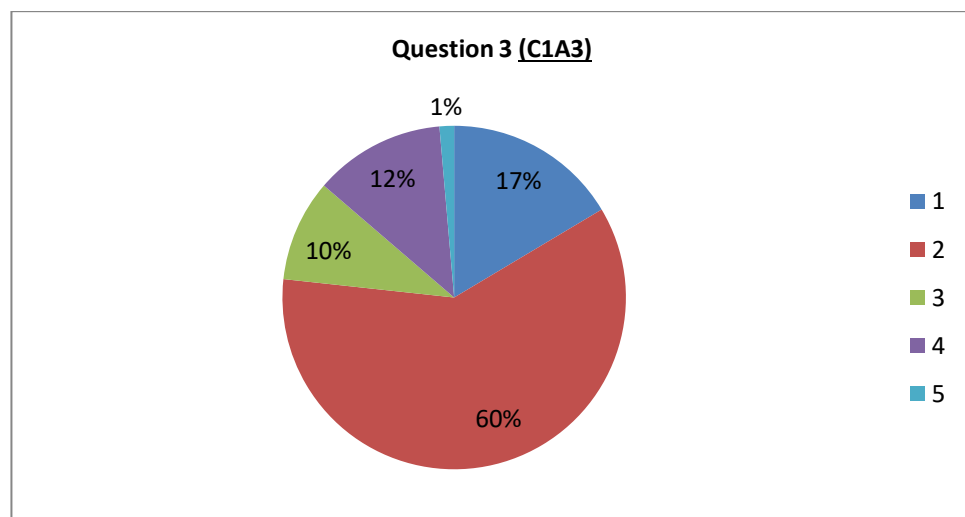


Source : Field Survey

- **Inference :** 66 percentage of the respondents disagree with the variable given above. Hence a key concept is established that the measure of professional knowledge is not taking place in IAF at regular intervals other than Cat Board and Appraisal System.

Question –3 (C1A3) : Measure of domain specific knowledge in the written examination is not required to be checked.

Fig:5.5

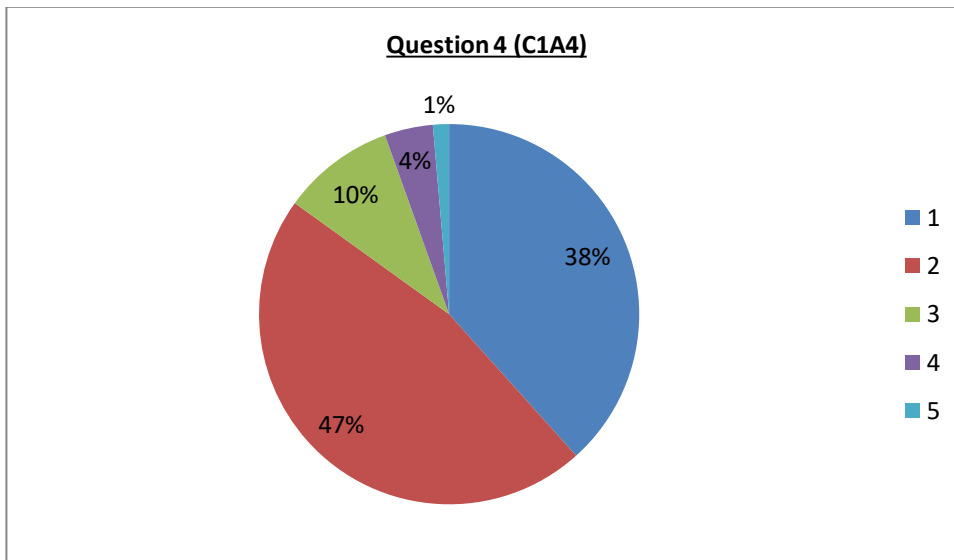


Source : Field Survey

Inference 72 percentage disagree with the variable given above. Hence the key concept that measure of domain specific knowledge in the written examination is required to be checked is established.

Question-4(C1A4) Effective writing skills is not a measure of professional knowledge.

Fig:5.6

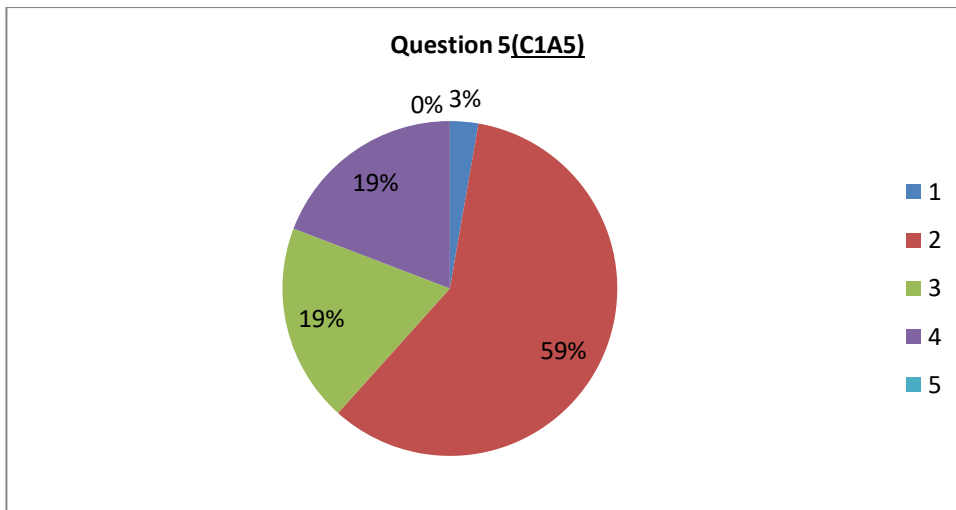


Source : Field Survey

Inference. 85 percentage of the respondents disagree with the variable given above. The response in all the categories is also homogenous. Hence, a key concept is established that the effective writing skills is a measure of professional knowledge.

Question -5(C1A5) Well-articulated replies in the written examination has no bearing on the outcome of the Cat Board result.

Fig:5.7

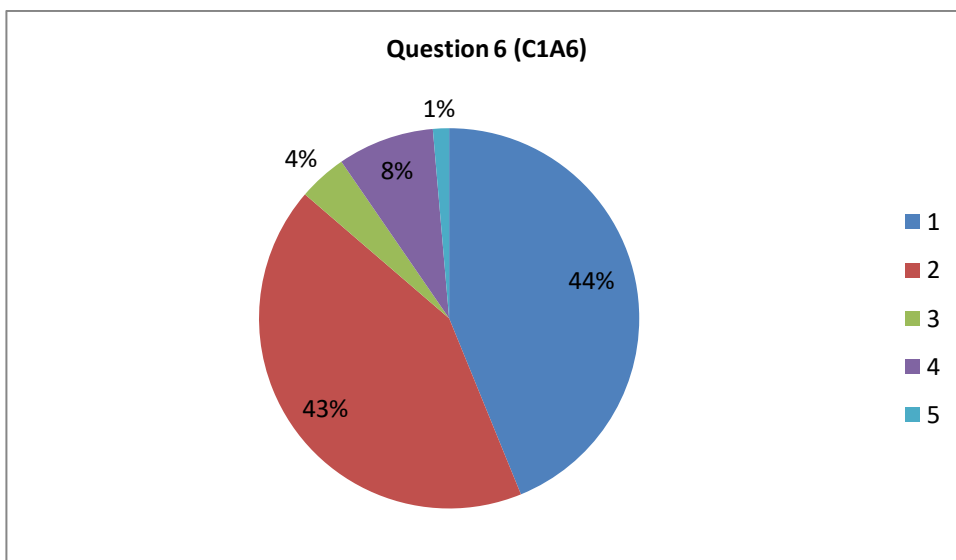


Source Field Survey

Inference: 62 percentage disagree with the variable given above. The response in all categories is also homogenous. Hence the key concept is established that well-articulated replies in the written examination has a bearing on the outcome of the Cat Board result.

Question –6 (C1A6) : Application of mathematical models and logical analysis in the written exam has no relevance to professional competence.

Fig:5.8



Source Field Survey

Inference: 87 percentage disagree with the variable given above. The response in all categories is also homogenous. Hence the key concept that the application of

mathematical models and logical analysis in the written exam has relevance to professional competence.

Overall analysis of of Construct -1

Fig :5.9

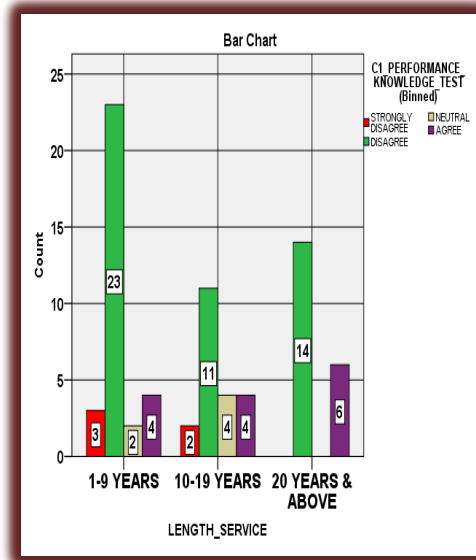
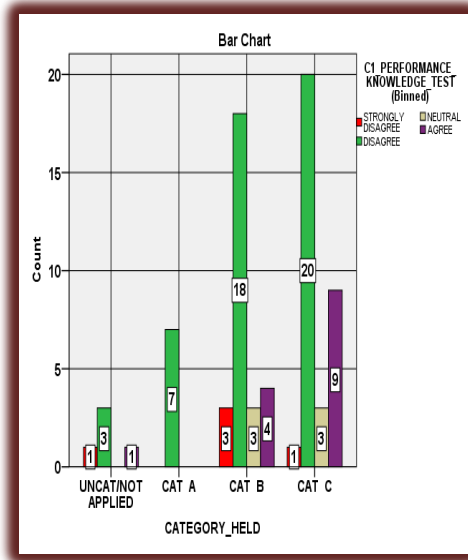


Fig :5.10

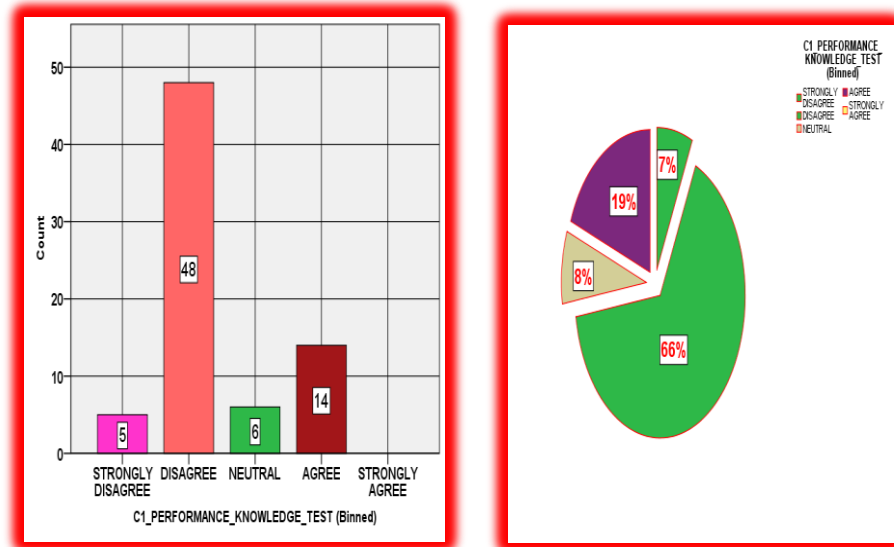


Source Field Survey

Length of Service and Category Held. The above graphical representation is a result of collation of the respondents in terms of the length of service commencing from one year of service to 20 years and above. Similarly, the Category of the respondents has been considered. It may be seen that the pattern of disagreement to all the variable is homogenous across all the categories.

Fig :5.11

Fig :5.12



Source Field Survey

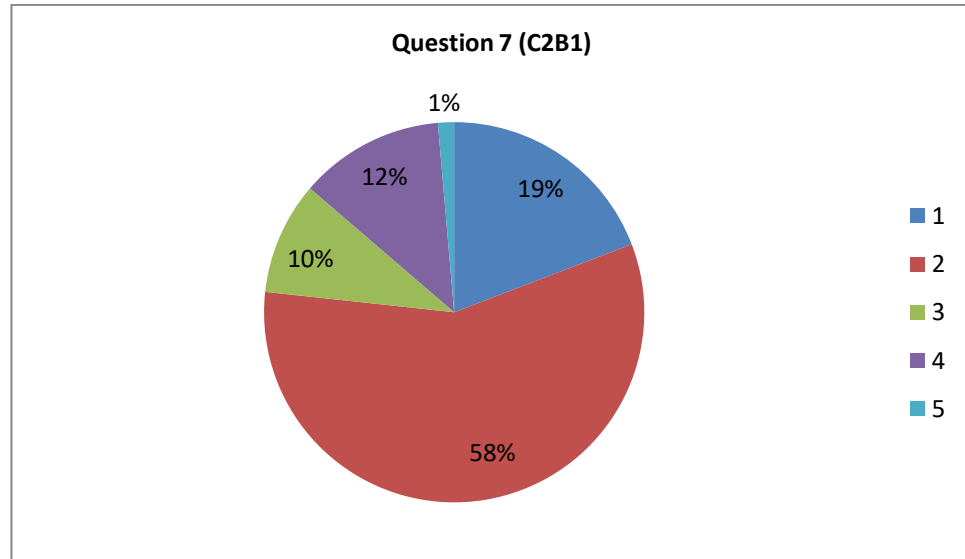
Final Analysis of Construct -1 - Performance In Knowledge Tests : From the above, it may be seen that the pattern of responses are homogeneous in nature across the respondents. Majority (73 percentage) of the respondents have disagreed and the opinion is homogenous across at various categories of officers. Therefore the Null Hypothesis that “The methodology adopted in the Categorisation Board for Maintenance Branch Officers of IAF does not help enhancing the professional knowledge of the officers and is not overall beneficial to the IAF is rejected. That means that the performance in knowledge test measures the tacit knowledge of the officers of the Maintenance Branch Officer.

Construct-2

Situation Reaction Tests. With brevity and clarity application of the mind measured in situation reaction tests the measure of explicit knowledge. Construct 2 has six questions in all. The analysis of individual questions measure C2(B1, B2, B3, B4, B5 and A6) is shown below in form of pie charts and graphical representations.

Question –7 (C2B1) Viva voce checks mental faculties of an officer.

Fig :5.13

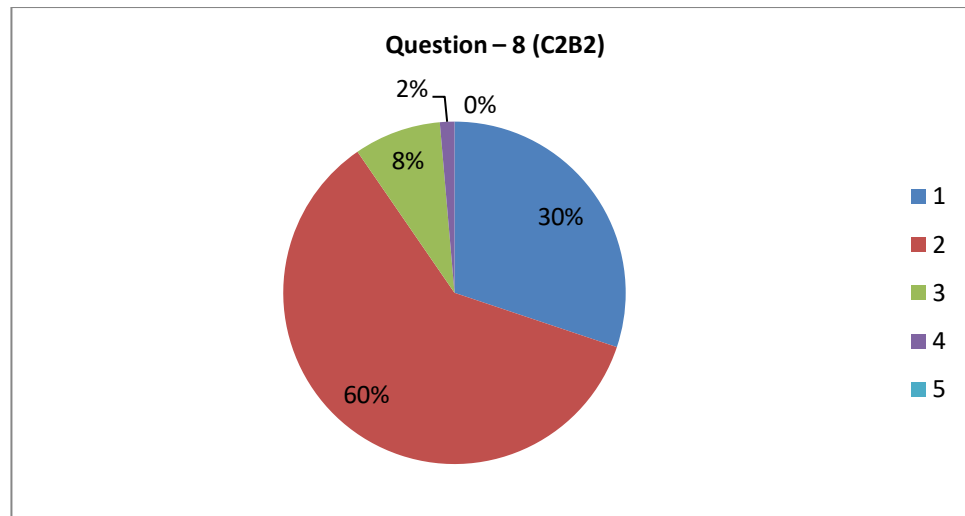


Source Field Survey

Inference 77 percentage disagree with the variable given above. The response in all categories is also homogenous. Hence the key concept that the viva voce does not check mental faculties of an officer. Hence a key concept is established that viva voce checks mental faculties of an officer.

Question – 8 (C2B2) : Evaluation in Cat Boards are simple and can be cracked without much difficulty.

Fig :5.14

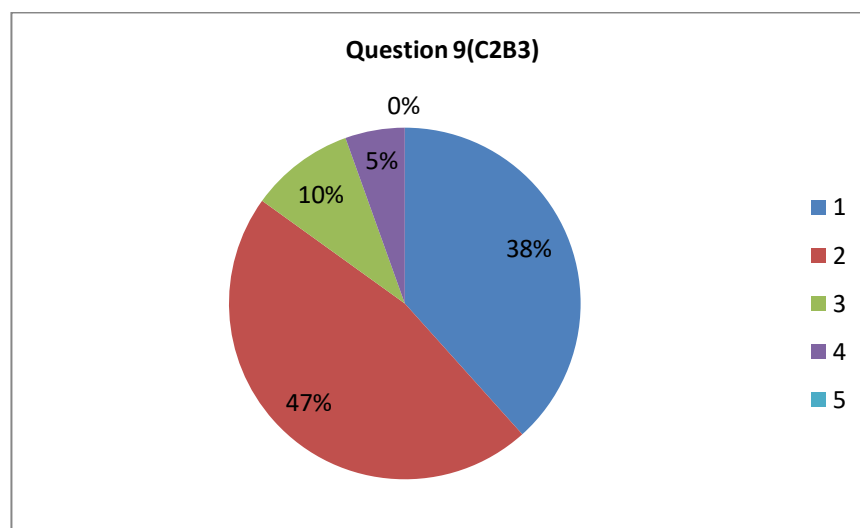


Source Field Survey

Inference. 90 percentage of the respondents disagree with the variable given above. Hence the key concept that the evaluation in Cat Boards are simple and can be cracked without much difficulty. Hence, a key concept that evaluation in Cat Boards are not simple and cannot be cracked easily is established.

Question-9(C2B3) One may clear viva voce without strong fundamentals and applied knowledge.

Fig :5.15

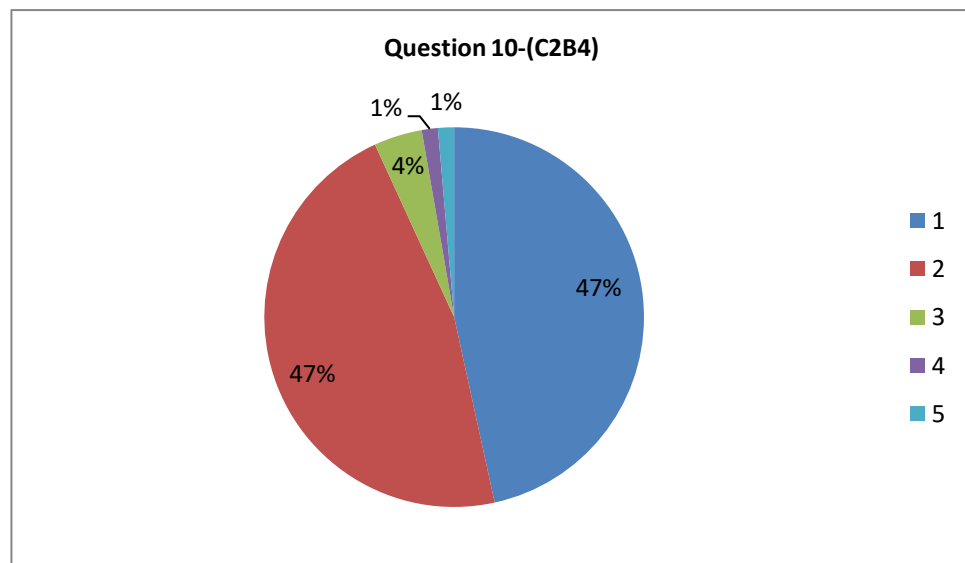


Source Field Survey

Inference: 85 percentage of the respondents disagree with the variable given above. Hence the key concept that one may clear viva voce without strong fundamentals and applied knowledge is established.

Question – 10(C2B4) : Training and development programs presently held are adequate to improve professional knowledge and skills set of officers.

Fig :5.16

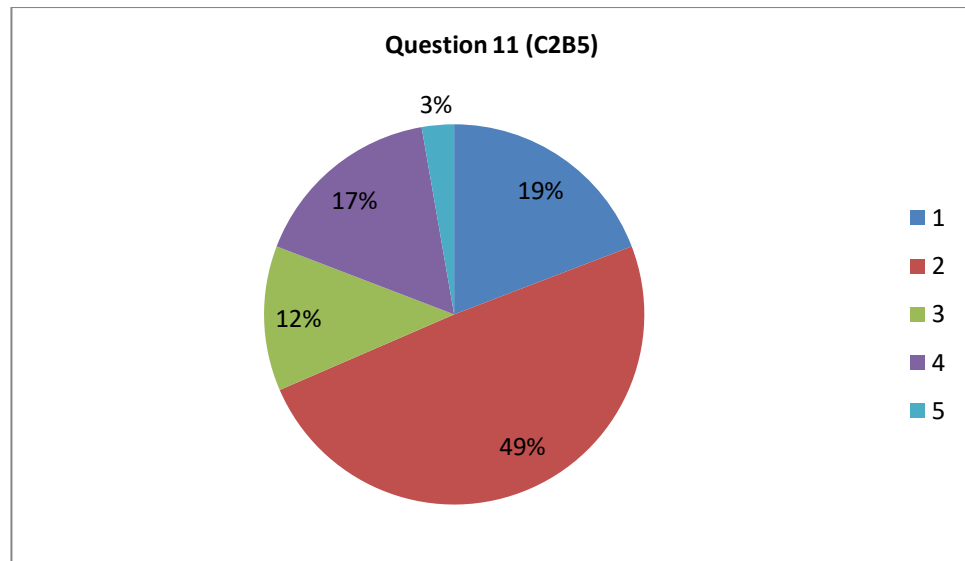


Source Field Survey

Inference 94 percentage disagree with the variable given above. Hence the key concept that the that the Training and development programs presently held is not adequate to improve professional knowledge and skills set of officers is established.

Question -11(C2B5) : The performance in the courses is directly proportional to the performance in the field.

Fig :5.17

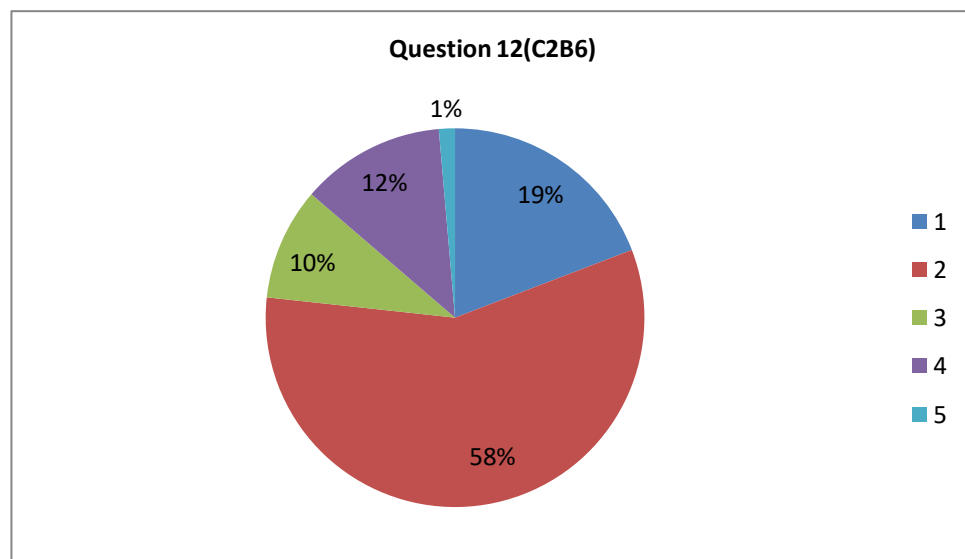


Source Field Survey

Inference 68 percentage of the respondents disagree to the above variable. Therefore, the key concept that the performance in the courses is not directly proportional to the performance in the field is established.

Question -12(C2B6) Regular upgradation of knowledge is not a pre-requisite to keep abreast of latest technologies in the field of aviation technology and SCM.

Fig :5.18

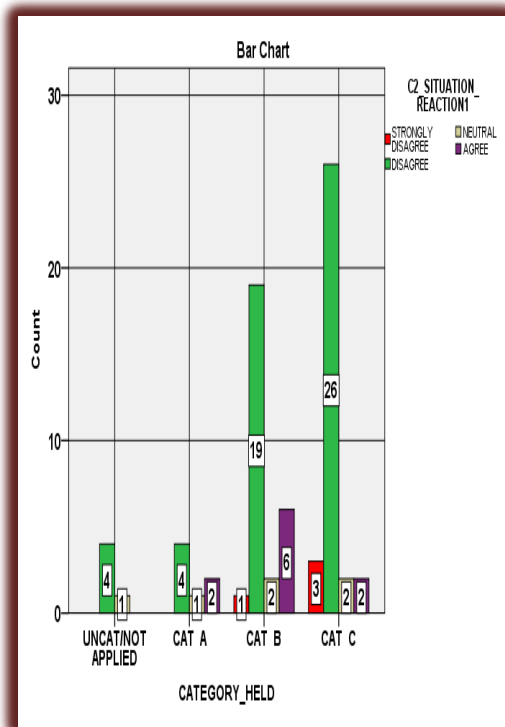


Source Field Survey

Inference 77 percentage of the respondents disagreed to the above variable. The response in all categories is also homogenous. The key concept that Regular up-gradation of knowledge is a pre-requisite to keep abreast of latest technologies in the field of aviation technology and SCM is established.

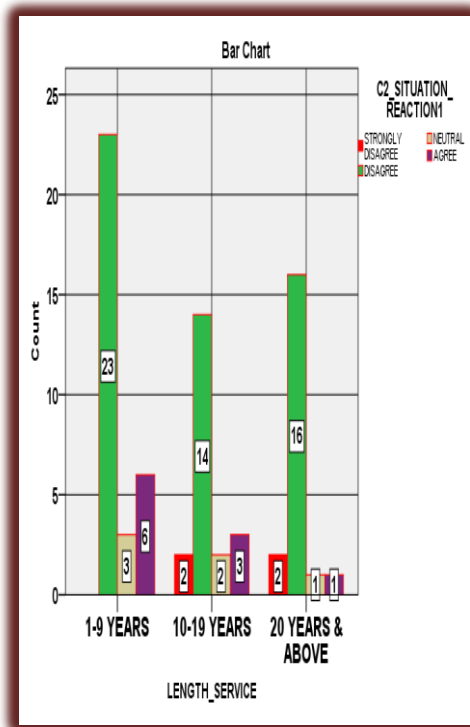
Overall Analysis of Construct -2

Fig :5.19



Source: Field Survey

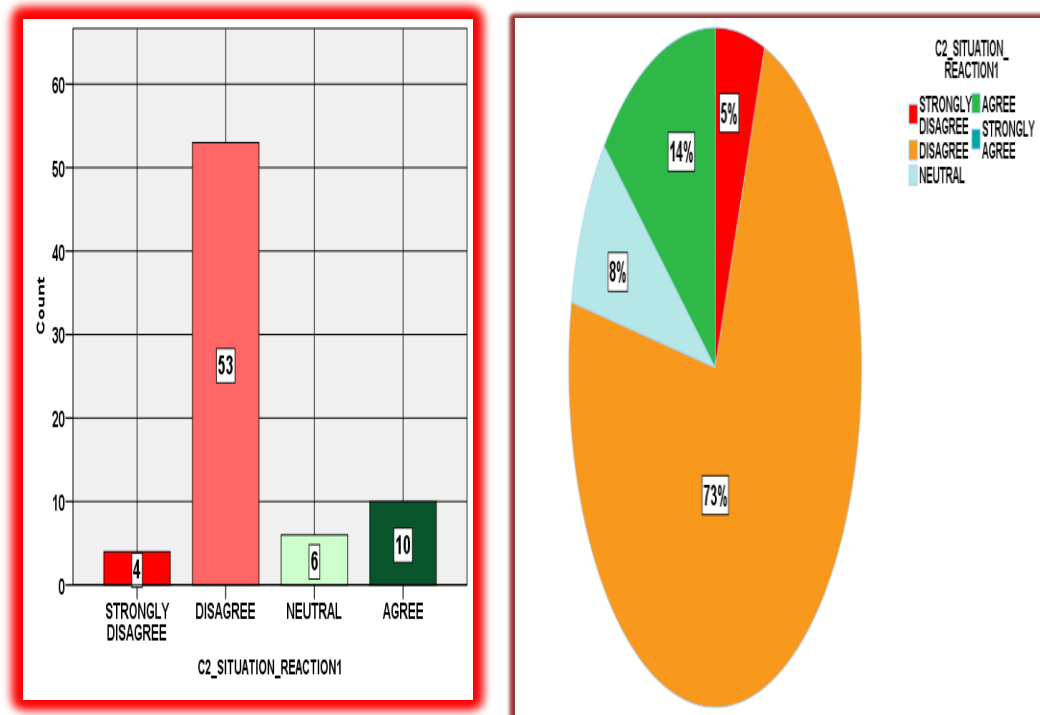
Fig :5.20



➤ **Length of Service and Category Held.** The above graphical representation is a result of collation of the respondents in terms of the length of service commencing from one year of service to 20 years and above. Similarly, the Category of the respondents has been considered. It may be seen that the pattern of disagreement to all the variable is homogenous across all the categories.

Fig :5.21

Fig :5.22



Source: Field Survey

Final Analysis of Construct -2 – Situation Reaction Test : From the above, it may be seen that the pattern of responses are homogeneous in nature across the respondents. Majority (78 percentage) of the respondents have disagreed and the opinion is homogenous across at various categories of officers. Therefore, the Null Hypothesis that “The methodology adopted in the Categorisation Board for Maintenance Branch Officers of IAF does not help enhancing the Professional Knowledge of the Officers and is not overall beneficial to the Indian Air Force is rejected. That means that with brevity and clarity application of the mind in Situation Reaction Tests measures the explicit knowledge of the officers of the Maintenance Branch.

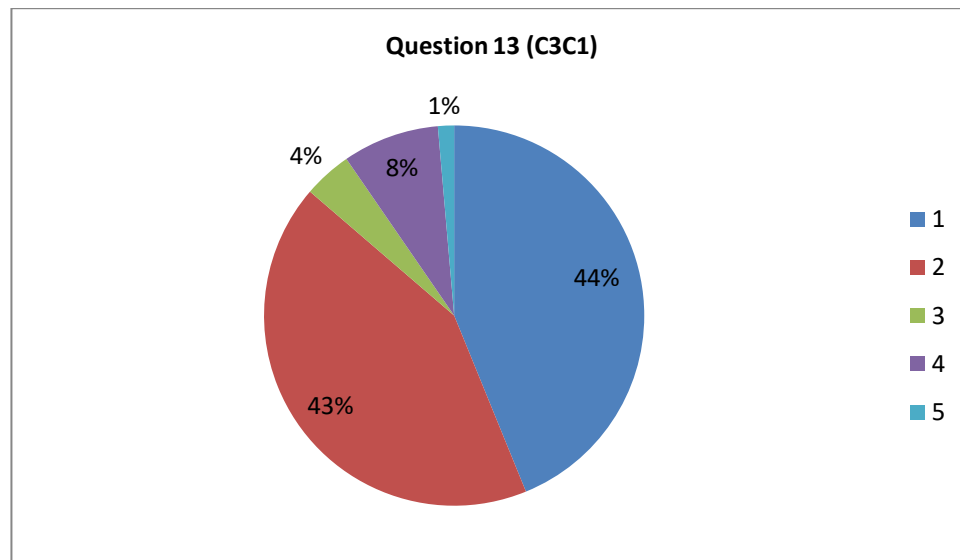
Construct-3

Responsiveness in Practical Situations : The responsiveness of an officer in facing practical scenarios measures tacit knowledge. Construct 3 has nine questions in all.

The analysis of individual questions measure C3 (C1, C2, C3, C4, C5,C6,C7,C8, and C9) is shown below in form of Pie Charts and Graphical representations.

Question -13(C3C1) : Working knowledge on weapon system / Integrated Materials Management On Line System / e-MMS is not pre-requisite for a strong professional.

Fig :5.23

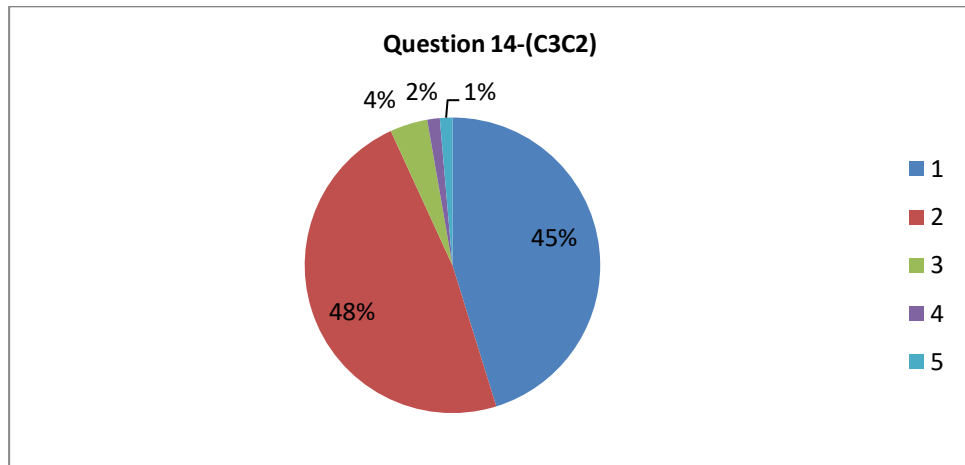


Source: Field Survey

Inference : 87 percentage of the respondents disagree that working knowledge on weapon system / IMMOLS / e-MMS not pre-requisite for a strong professional. The key concept that the key concept that working knowledge on weapon system / IMMOLS / e-MMS is a pre-requisite for a strong professional is established.

Question -14(C3C2) : The evaluation in the in-service courses is adequate and exhaustive and does not require any further performance evaluation in any form.

Fig:5.24

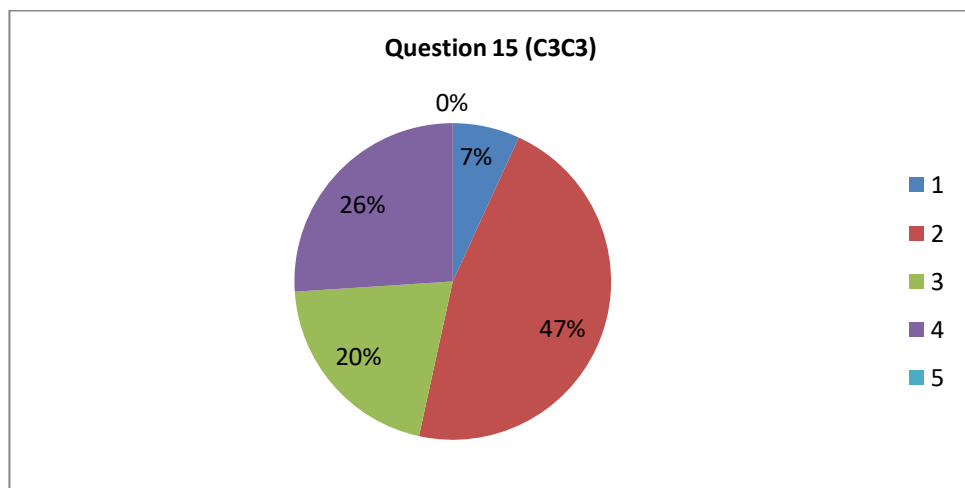


Source: Field Survey

Inference : 96 percentage of the respondent disagreed that evaluation in the in-service courses is adequate and exhaustive and does not require any further performance evaluation in any form. Therefore the key concept that the in-service courses are not adequate and exhaustive and therefore requires further performance evaluation by way of Cat Boards.

Question –15(C3C3) : Officers are empowered to take professional decisions affecting their work.

Fig:5.25

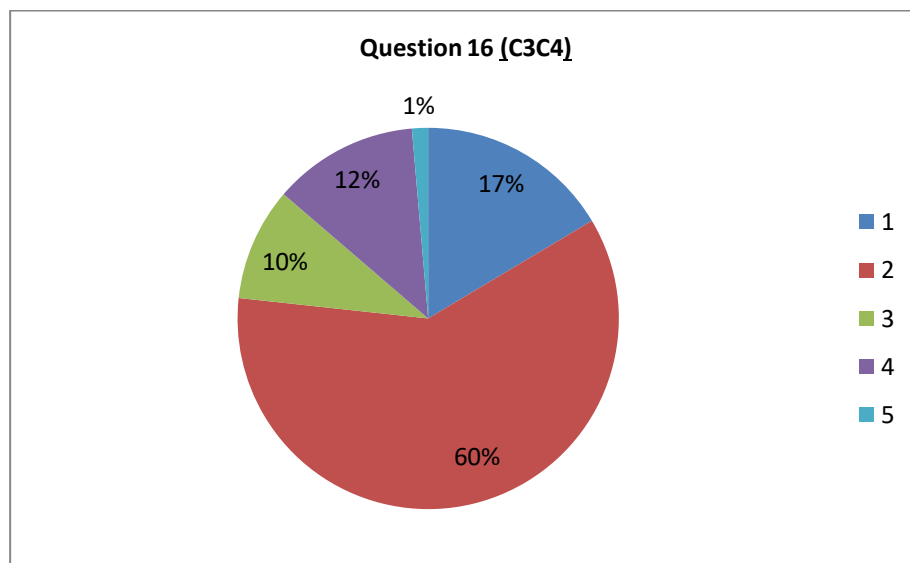


Source: Field Survey

Response. 54 percentage respondents disagreed that officers are empowered to take professional decisions affecting their work. Therefore the key concept that Officers are not empowered to take professional decisions affecting their work is established.

Question -16(C3C4) : In-service courses are linked to the on job performance of the officer.

Fig:5.26

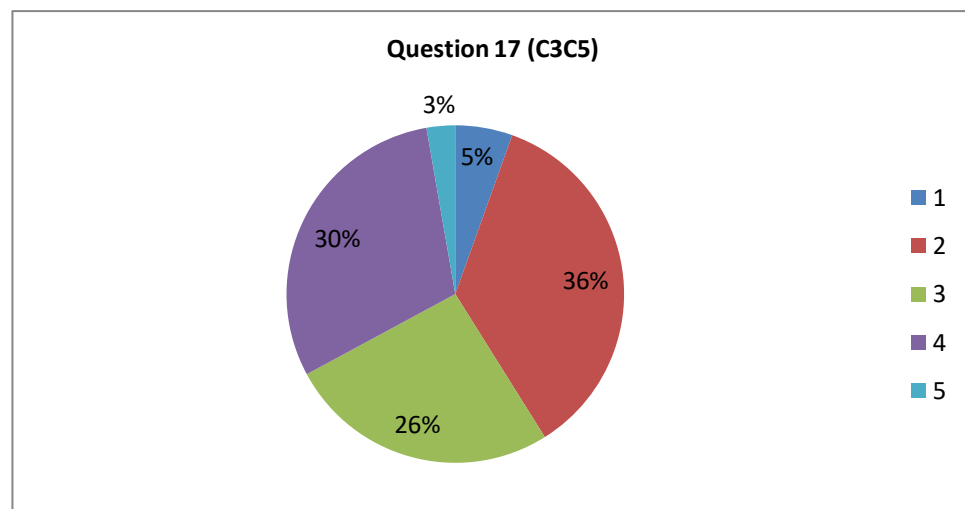


Source: Field Survey

Inference : 77 percentage of the respondents disagreed that the In-service courses are linked to the on job performance of the officer. Therefore, the key concept that In-service courses are not linked to the on job performance of the officer is established.

Question -17 (C3C5) : Officers are encouraged to take new initiatives and tasks always.

Fig:5.27

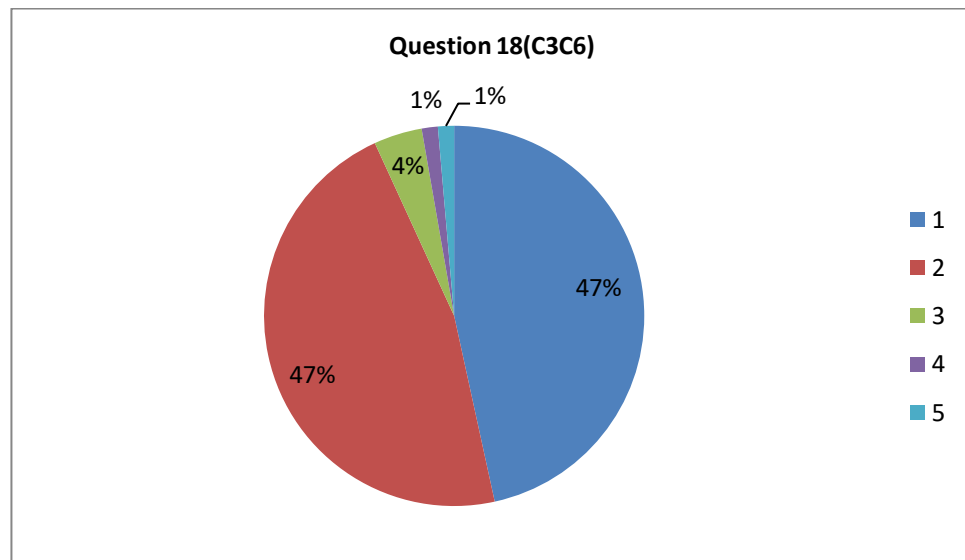


Source: Field survey

Inference : 56 percentage of the respondents disagreed that officers are encouraged to take new initiatives and tasks always. The key concept that officers are not encouraged to take new initiatives and tasks always is established.

Question -18 (C3C6) : Maintenance of Weapon System is independent of Aerospace safety.

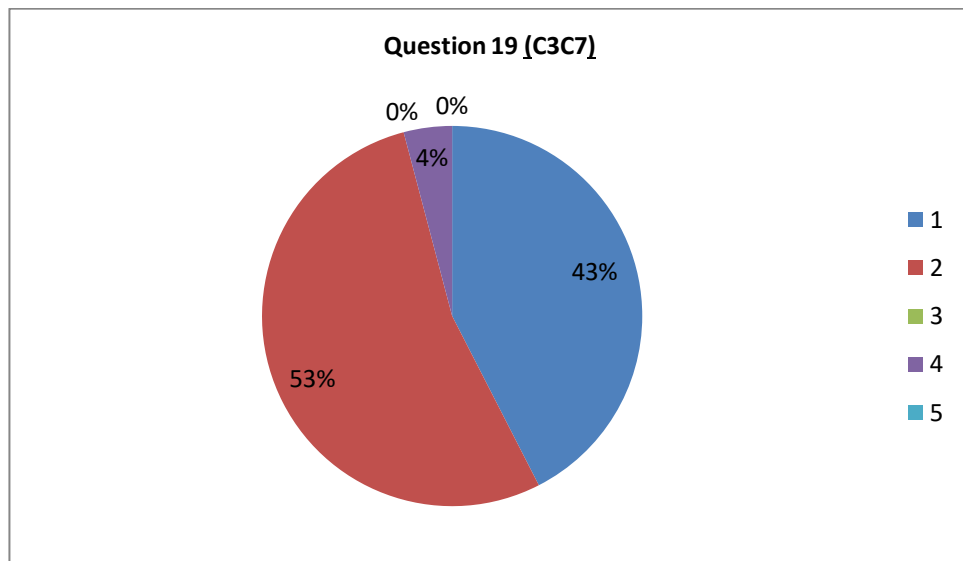
Figure-5.28



Source:Field survey

Inference : 94percentage of the respondents disagreed that Maintenance of Weapon System is independent of Aerospace safety. The response in all categories is also homogenous. With the 94 percentage of the respondents disagreeing with the variable, the key concept that Maintenance of Weapon System is dependent of Aerospace safety is established.

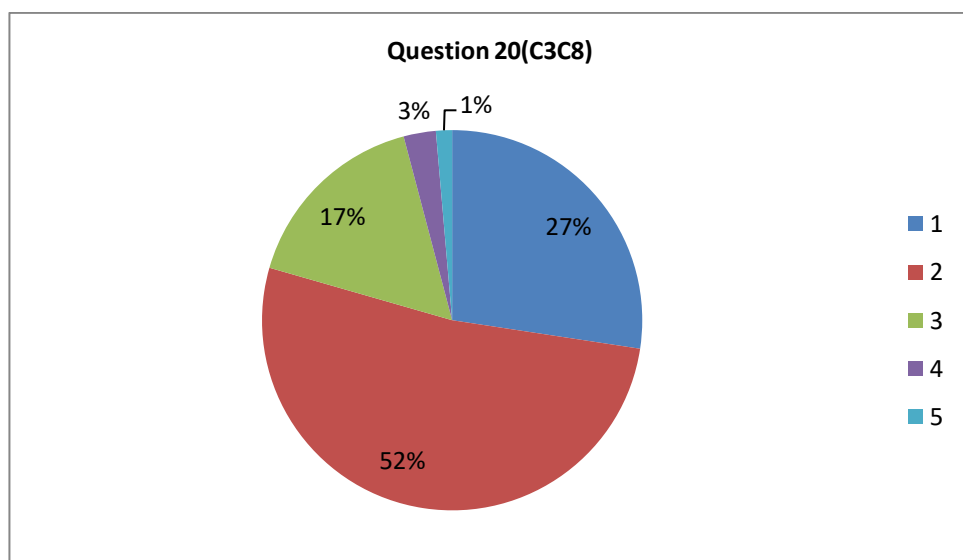
Question –19(C3C7) Practical examination is not required for officers as the tasks are performed by airmen placed under them.

Figure-5.29

Source:Field survey

Inference : 96 percentage of the respondents disagree with the variable given above. Therefore, a key concept is established that working knowledge on weapon system/IMMOLS/e-MMS is a pre requisite for a strong professional which comprises of tacit knowledge and that practical examination is required for officers.

Question –20(C3C8) : Knowledge of handling single / double star snags and use of IMMOLS for effective store procedures has no bearing on the outcome in Cat Board.

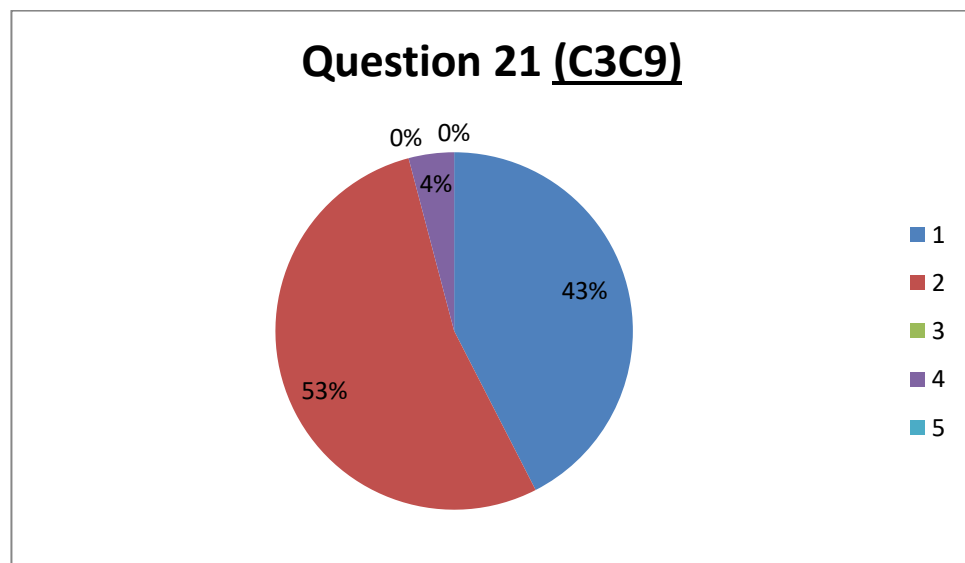
Figure-5.30

Source:Field survey

Inference : 77percentage of the respondents disagreed with the variable as given above. The response in all categories is also homogenous. Hence a key concept is established that knowledge of handling single / double star snags and use of IMMOLS for effective store procedures has a bearing on the outcome in Cat Board which measures the level of tacit knowledge.

Question –21 (C3C9) : Documentation of procedures and safety precautions has no linkage to the professional competence of the officer.

Figure-5.31



Source:Field survey

Inference 96 percentage of the respondents disagreed with the variable above. Hence, the key concept is established that documentation of procedures and safety precautions has linkage to the professional competence of the officer and measures tacit knowledge in the Categorisation Boards.

Overall Analysis of Construct -3

Figure-5.32

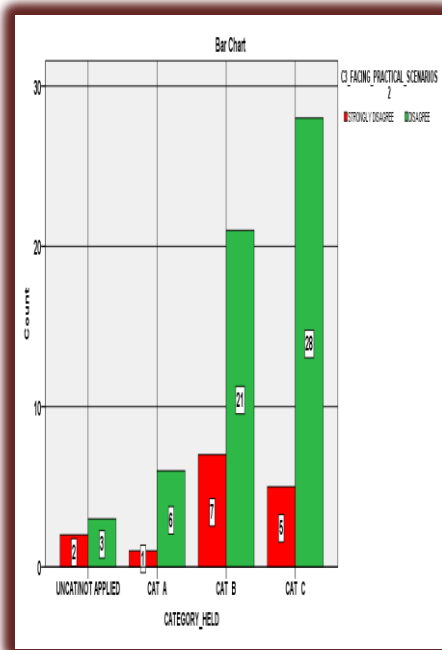
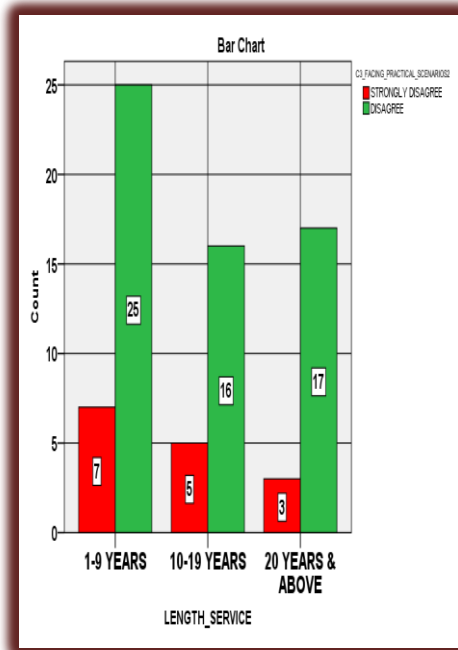
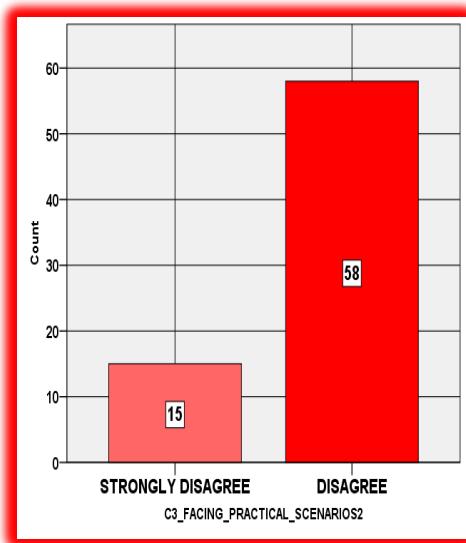
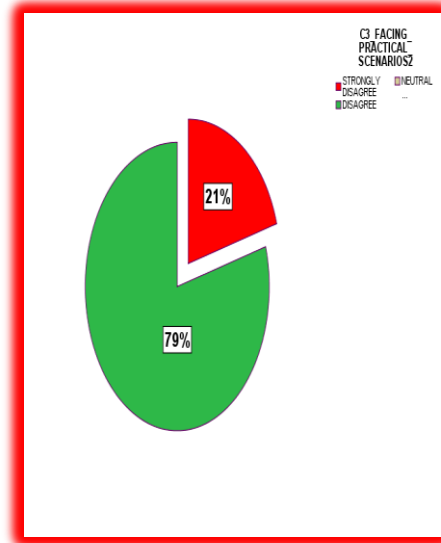


Figure-5.33



Source:Field survey

- **Length of Service and Category Held :** The above graphical representation is a result of collation of the respondents in terms of the length of service commencing from one year of service to 20 years and above. Similarly, the Category of the respondents has been considered. It may be seen that the pattern of disagreement to all the variable is homogenous across all the categories of the experience in years and length of service and the category held by the respective category of officers..

Figure-5.34**Figure5.35**

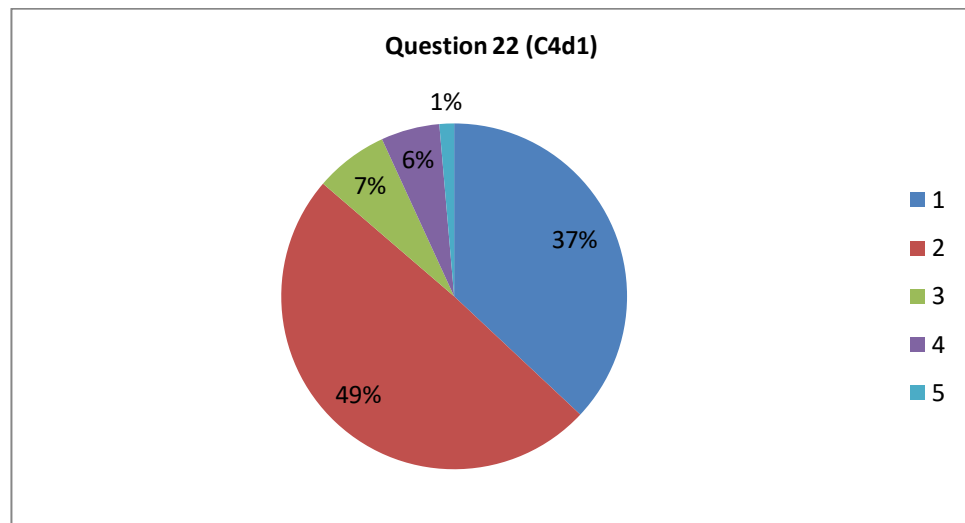
Source:Field survey

Final Assessment of Construct -3 : From the above, it may be seen that the pattern of responses are homogeneous in nature across the respondents. Majority (79percentage) of the respondents have disagreed and the opinion is homogenous across at various categories of officers. Therefore the Null Hypothesis that “The methodology adopted in the Categorisation Board for Maintenance Branch Officers of IAF does not help enhancing the Responsiveness in Practical Situations and is not overall beneficial to the IAF is rejected. That means that Responsiveness in Practical Situations measures the Explicit knowledge of the officers of the Maintenance Branch Officer.

Construct -4

Ability To Carry Out Research : The ability to carry out research and present the recommendations by appropriate utilisation of available resources measures the tacit knowledge. This construct consists of three variables in form of questions pertaining to subject Construct.

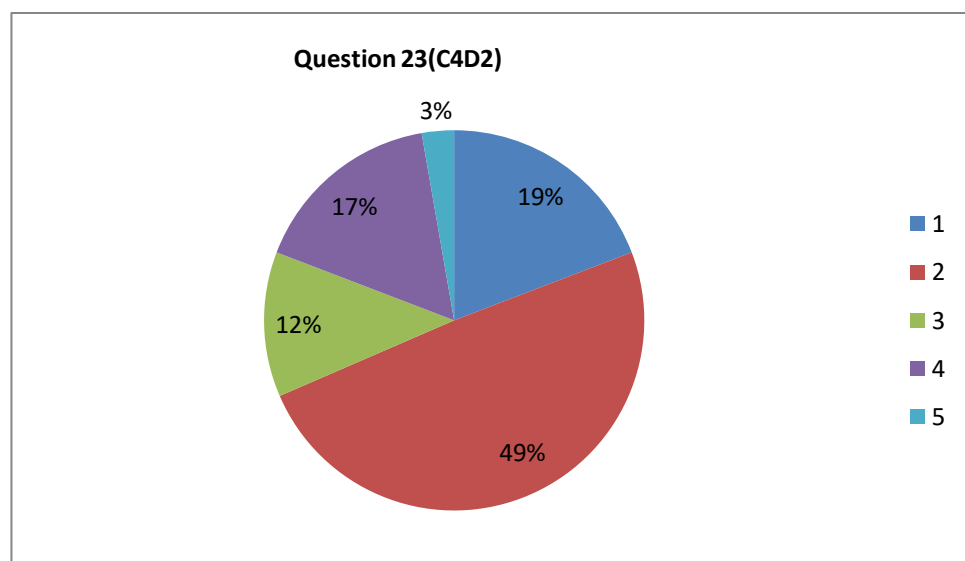
Question –22(C4D1) : The topics given by MOCB for the Cat Boards can be presented without much of research.

Figure-5.36

Source:Field survey

Inference : 85percentage of the respondents disagree to the above variable. The response in all categories is also homogenous. Hence a key concept is established that that the presentation topics given by MOCB for the Cat Boards require thorough research.

Question –23 (C4D2) : Knowledge on IMMOLS and e-MMS are only add-ons to professional knowledge.

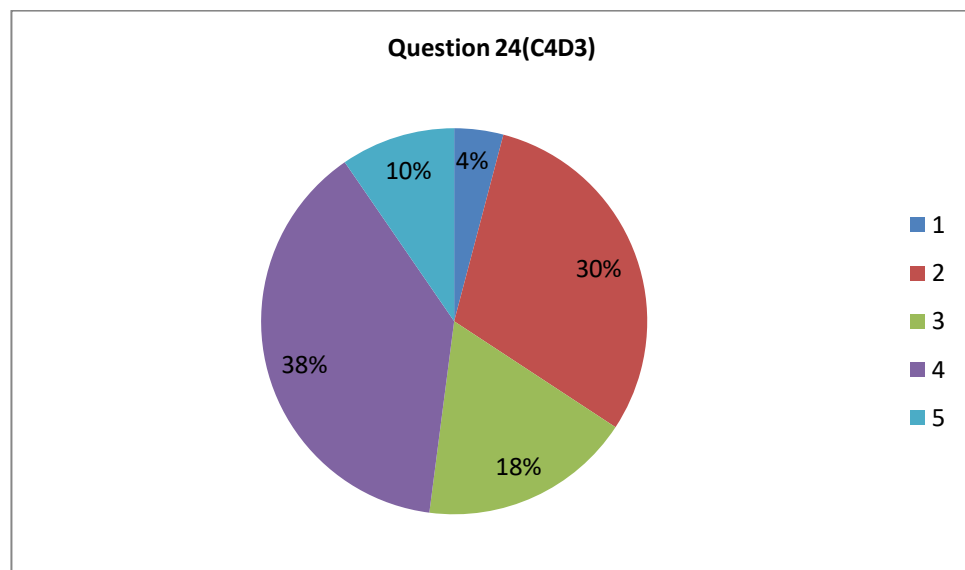
Figure-5.37

Source:Field survey

Inference : 68 percentage of the respondents disagreed to the variable above. Hence the key concept is established that the Knowledge on IMMOLS and e-MMS are not only add-ons to professional knowledge but help in analysing various aspects in day to day working, therefore it adds to the tacit knowledge of the officers and is assessed during the Cat Boards.

Question 24(C4D3) :- Officers are not adequately inspired to meet their goals at work.

Figure- 5.38



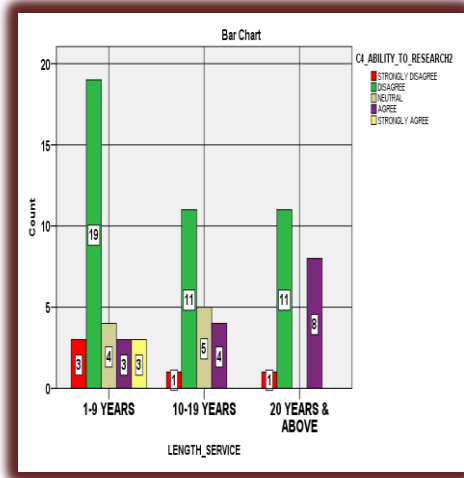
Source:Field survey

Inference. Approximately 48percentage of the respondents disagreed that _Officers are not adequately inspired to meet their goals at work. Hence the key concept that the officers are adequately inspired to meet their goals at work.

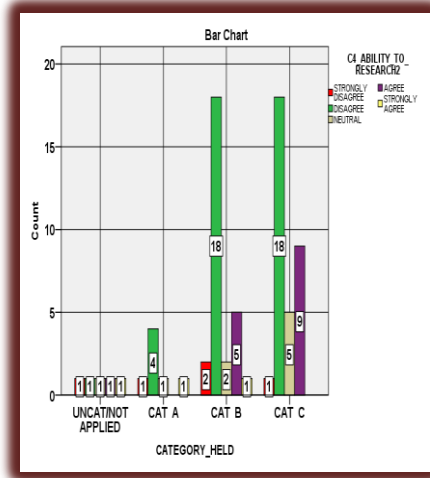
Final Analysis of Construct -4 – Responsiveness in Practical Situations.

Figure-5.39

Figure-5.40



Source:Field survey

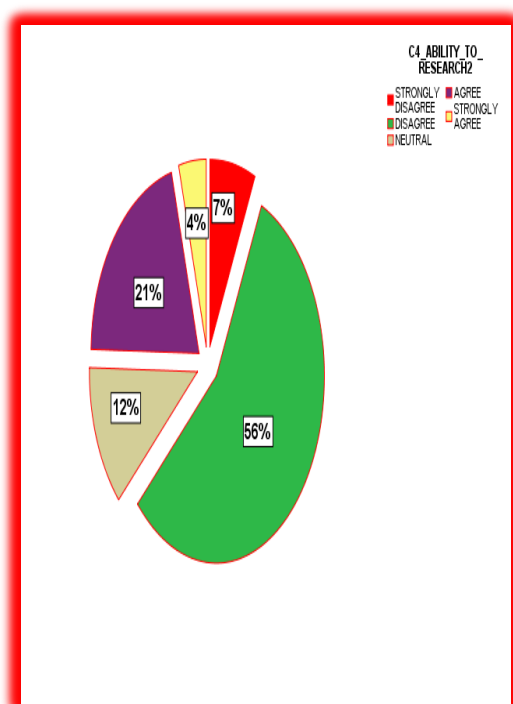
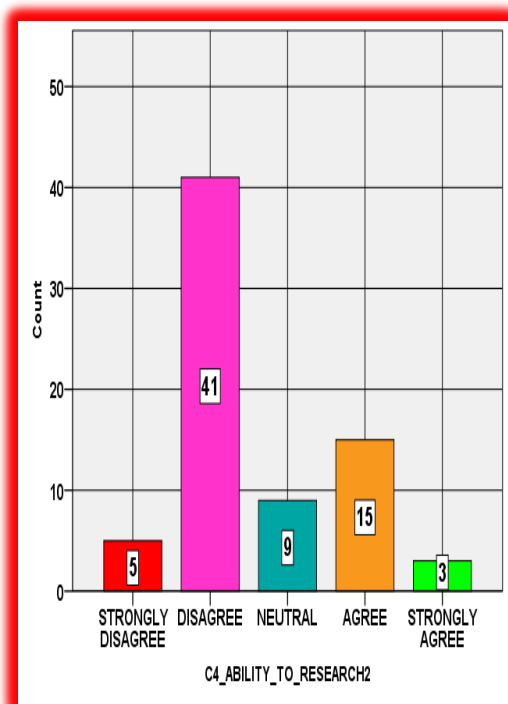


Source:Field survey

➤ **Length of Service and Category Held :** The above graphical representation is a result of collation of the respondents in terms of the length of service commencing from one year of service to 20 years and above. Similarly, the Category of the respondents has been considered. It may be seen that the pattern of disagreement to all the variable is homogenous across all the categories of the experience in years and length of service and the category held by the respective category of officers..

Figure-5.41

Figure- 5.42



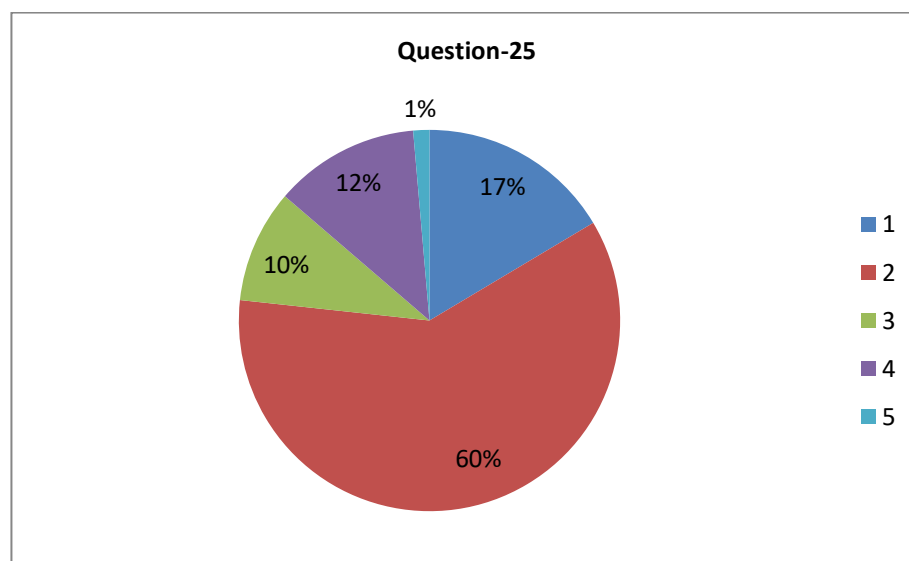
Source:Field survey

From the above, it may be seen that the pattern of responses are homogeneous in nature across the respondents. Majority (79percentage) of the respondents have disagreed and the opinion is homogenous across at various categories of officers. Therefore the Null Hypothesis that “The methodology adopted in the Categorisation Board for Maintenance Branch Officers of IAF does not help enhancing the Responsiveness in Practical Situations and is not overall beneficial to the IAF is rejected. That means that Responsiveness in Practical Situations measures the Explicit knowledge of the officers of the Maintenance Branch Officer.

Certain questions, though not falling within the ambit of the four Constructs which were found pertinent during the research were included in the questionnaire are analysed below separately. Same are stated below and analysed accordingly.

Question - 25 Ab-initio training given to AE and Lgs Offrs is not adequate to kick start the career of maintenance branch officer.

Figure-5.43

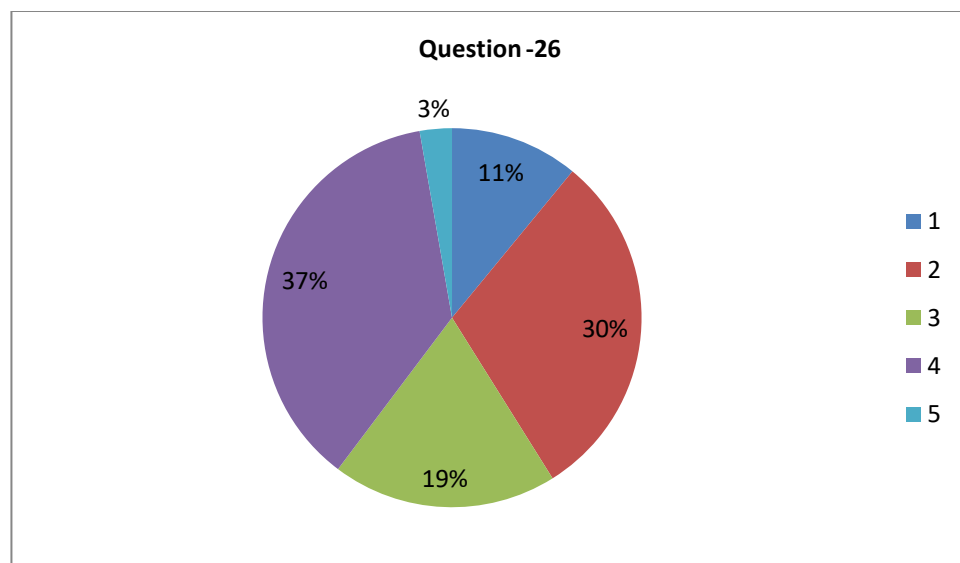


Source:Field survey

Inference : 77 percentage of the respondents disagreed to the above variable. Hence the key concept is established that Ab-initio training given to AE and Lgs Offrs is adequate to kick start the career of maintenance branch officers.

Question - 26 The in-service courses viz., TETTRA / BPKC / APKC / SEMOC / HLMC completes the learning curve of maintenance branch officers.

Figure-5.44

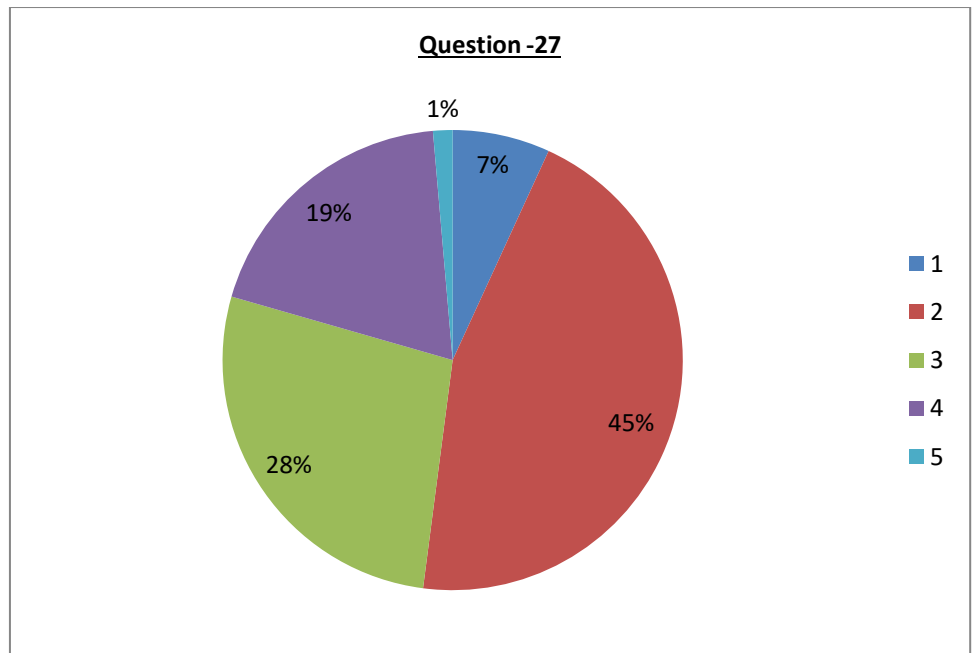


Source:Field survey

Inference : 52 percentage of the respondents disagree to the variable above. Hence the key concept is established that in-service courses does not complete the learning curve of maintenance branch officers, instead the preparation for the Cat Board helps enhancing the learnig curve of the maintenance branch officers.

Question -27 : Maintenance branch officers' are completely aware of their professional work.

Figure-5.45

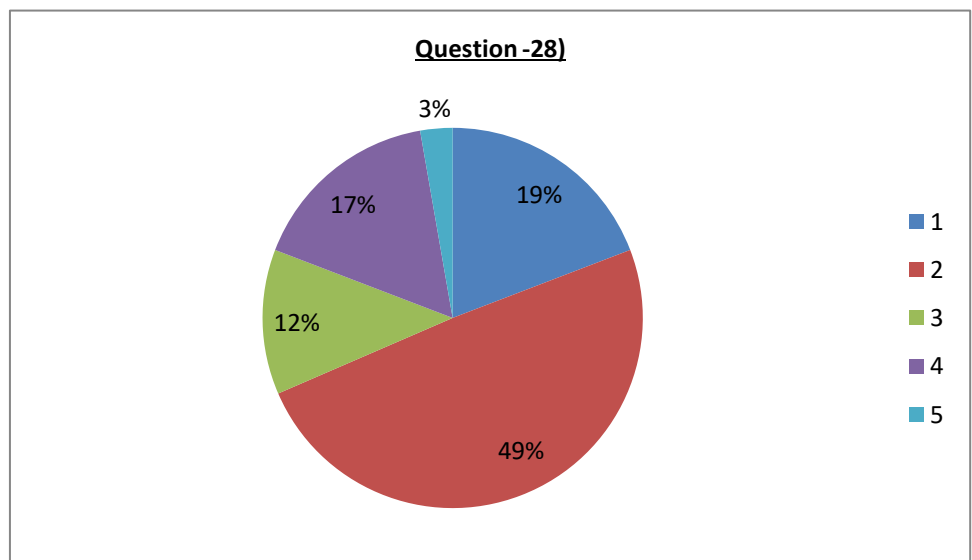


Source:Field survey

Inference 56 percentage of the respondents disagreed to the above variable. Hence the key concept is established that Maintenance branch officers are not completely aware of their professional work. This was found to be true in the outcomes of the profession boards.

Question -28 : Professional performance goals are purely behavioural oriented.

Figure-5.46



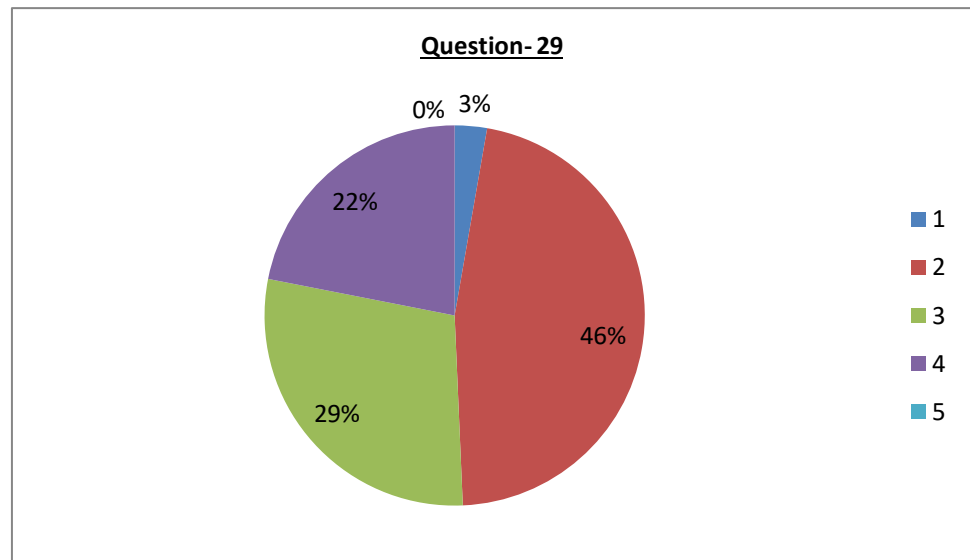
Source:Field survey

Inference : 68 percentage of the respondents disagreed to the variable above. Hence the

key concept is established that the Professional performance goals are not purely behavioral oriented, instead these are knowledge oriented and forms the tacit knowledge and accordingly assessed in the Cat Boards

Question -29 : IAF does not help identify strong and weak areas of performance at work.

Figure-5.47

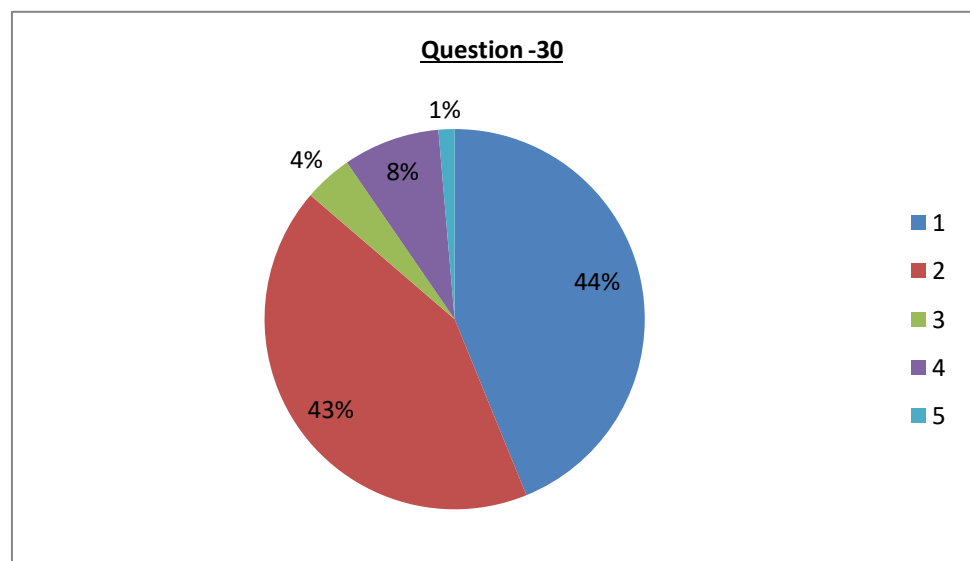


Source:Field survey

Inference : 50percentage of the respondents disagree to the variable. Hence the key concept is established that IAF helps identify strong and weak areas of performance at work. The same is also thoroughly assessed during the Cat Boards.

Question -30 Professional competence not is a major contributing factor for career progression.

Figure-5.48

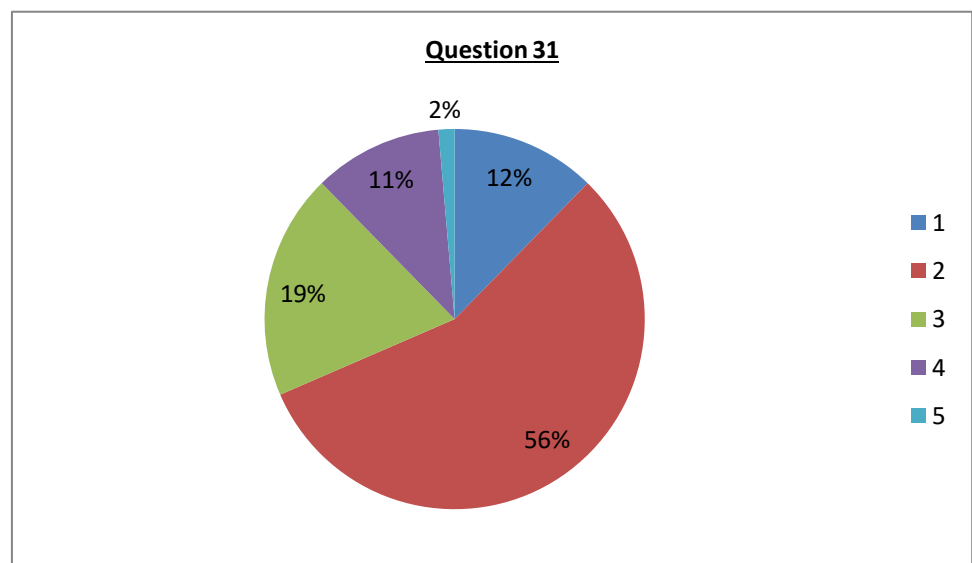


Source:Field survey

Inference : 86 percentage of the respondent disagreed to the above variable. Hence, the key concept that Professional competence is a major contributing factor for career progression. This aspect forms an important focus area during the Cat Boards.

Question –31 Attending in-service courses ie., Basic Professional Knowledge Course / Advance Professional Knowledge Course /Senior Engineers Maintenance Officers Course/Higher Logistics Management Course is adequate to enhance professional competence of an officer.

Figure-5.49

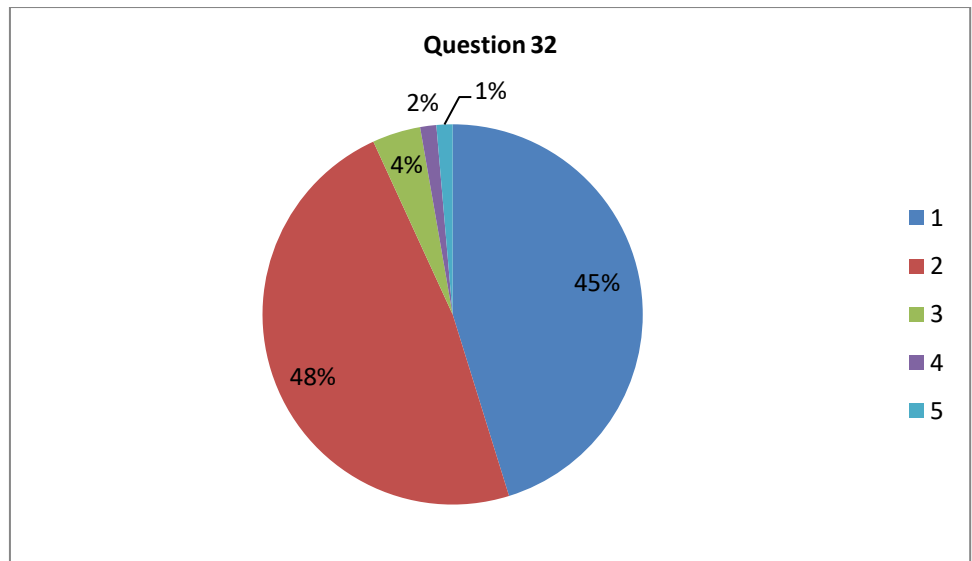


Source: Field survey

Inference. 67 percentage of the respondents disagreed to the variable that merely attending in-service courses is adequate to enhance professional competence of an officer. Therefore, the key concept that in addition to the in- service courses, the officers should be additionally tested for enhancing professional competence of an officer, the same is undertaken by way of Cat boards.

Question –32 No additional preparation is required to face the Categorisation Board.

Figure-5.50

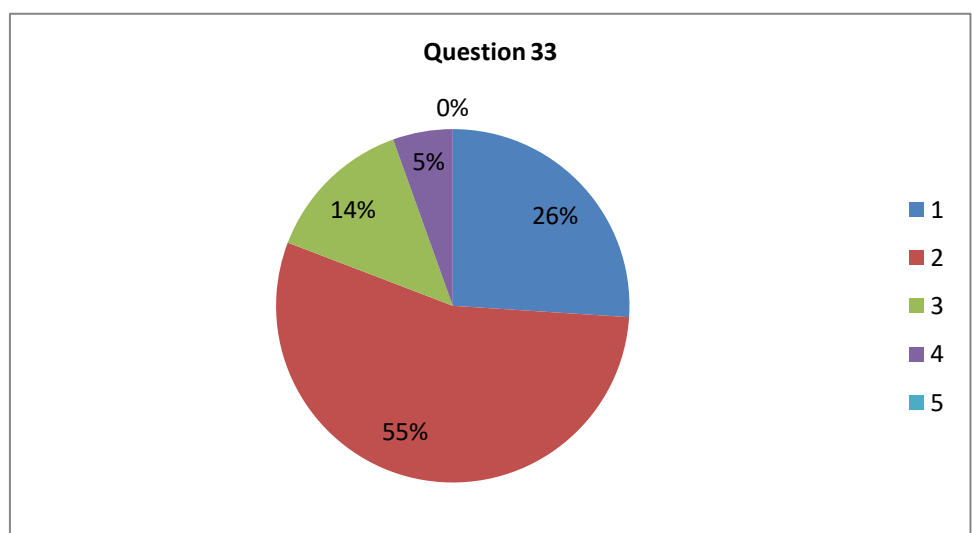


Source: Field survey

Inference 89percentage of the respondents disagreed to the variable. The key concept is therefore established that Cat Board subjects an officer through detailed professional testing in a fool proof manner for which the officers have to undertake detailed and thorough preparations in terms of updated knowledge, proficiency in practicals and domain centric presentations in addition to facing viva-voce.

.Question –33 The evaluation in Cat Board is same as in the in-service courses.

Figure-5.51



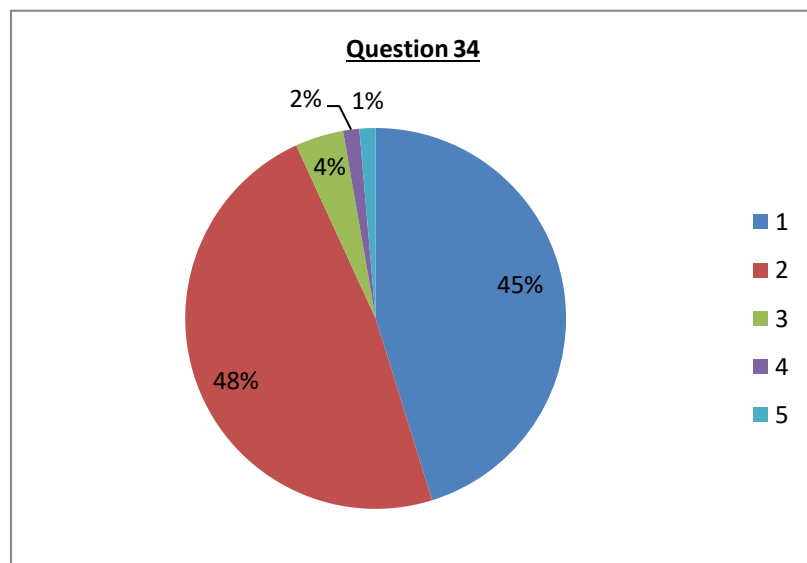
Source: Field survey

Inference. 81percentage of the respondent disagreed to the above variable. Hence the key

concept has been established that the evaluation in Cat Board is not same as in the in-service courses. Cat Board examines each officer for their profession acumen, practical knowledge, domain knowledge etc in addition to a number of aspects to assess the capability of the officers as a domain expert as well a number of other attributes.

Question-34 The questions in the Viva are asked beyond the syllabus.

Figure-5.52

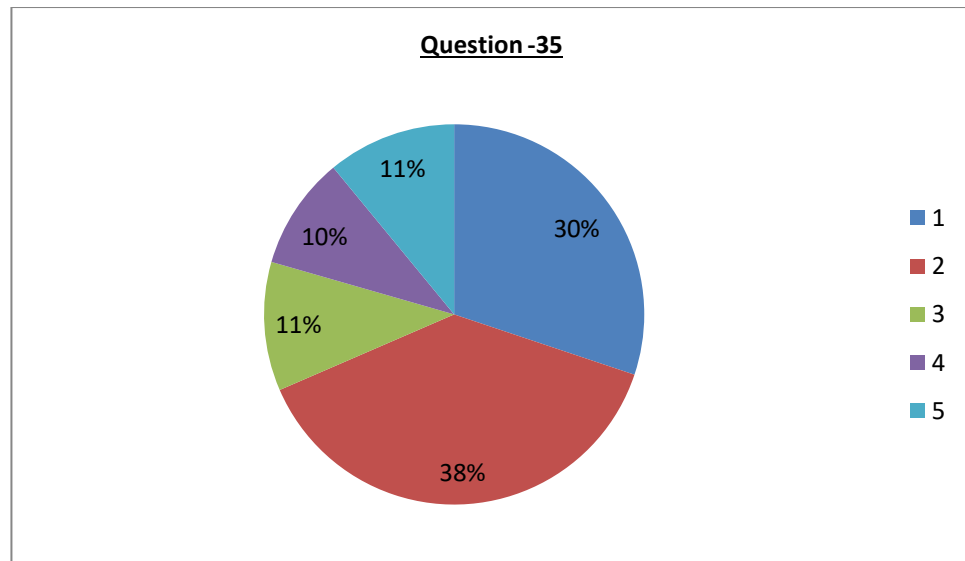


Source: Field survey

Inference. 93 percentage of the respondent disagreed to the above variable. Hence the key concept has been established that the questions in the Viva are not asked beyond the syllabus.

Question –35 The Cat Boards in respect of Maint Branch officers has no value addition in terms of professional knowledge

Figure-5.53



Source: Field survey

Inference 68 percentage of the respondents disagreed to the above variable. Thus the key concept is established that the Cat Board expects an officer to appear with a high level of preparedness and professional knowledge for a thorough scan of the individual, the Branch officers has a value addition of a high order in terms of professional knowledge.

Statistical and Administrative Decisions.

- ✓ **Statistical Decision** : Based on the analysis of data, there exists sufficient statistical evidence to reject the Null Hypothesis (H₀)
- ✓ **Administrative Decision** : Categorisation of Maintenance Branch Officers will further enhance the professional knowledge at regular intervals

Interpretation

Overall Interpretation from the Constructs : The overall analysis of individual constructs indicates the following:-

- There exists a definite requirement to continue with the Categorisation process for maintenance branch officers.
- The categorisation process measuring an officers knowledge in

written tests, situation reaction tests, practicals and resource utilisation tests improve professional knowledge .

- The organisation would benefit in the long run with the categorisation process.

- The categorisation process initiated for other ground duty branch officers viz., Administration, Accounts, Education, Meteorology would also have positive effect on the organisation.



FINDINGS AND RECOMMENDATIONS



CHAPTER -6

FINDINGS, RECOMMENDATIONS AND CONCLUSION

Having undertaken detailed literature review, few concepts on continued training and learning which was profound in most of the literature was well perceived. It was realised that most of the concepts advocated on the growth of the individuals in an organisation and overall growth of an organisation were in some way or the other found to be quite akin to very basis the Scheme of Categorisation prevalent in the Indian Air Force. Also, the response from almost all the respondents which included all those who have been successfully Categorised in respective Categories, those who are yet to find a success in their attempts to get categorized and those who are yet to appear for categorisation responded in a very homogenous manner and thereby led to the following findings, recommendations and conclusion:

Findings based on Data Analysis (Questionnaire)

Following findings have emerged from the analysis of the questionnaire circulated amongst the IAF officers and also based on the literature review:

- The present training pattern is not adequate to measure and gauge the professional caliber of Maintenance Branch Officer.
- Application of practical knowledge and the research orientation of an officer are not checked during the in-service professional courses.
- Subject to viva-voce at regular intervals checks the mental faculties of an officer.
-
- The performance of the officer in various courses may not commensurate

with the performance in the field and cannot be linked .

- There is a need to upgrade knowledge at regular intervals to keep abreast of latest technologies in the field of aviation technology and SCM.
- The level of professional knowledge is not being checked in a formal process other than appraisal system.
- Subjecting an officer for the professional categorization boards comprising of the four facets viz., Written Exam, Viva Voce, Practical and Presentation brings out the true potential of an officer.
- The study brings out that the Cat Boards in respect of Maintenance branch officers is a knowledge enabler and helps the individual officers to perform better in their work areas and take decisions on professional competence.
- The study yield similar out come in respect of all the three branches under Maintenance head viz., Aeronautical Engineers (Mechanical), AE(Electrical) as well as Logistics.
- The study yields similar outcome for various service seniorities viz., 0 to 9 years, 10 to 19 years and 20 years and above.
- Lateral discussions were also held with the officers from the Indian Army and Indian Navy in addition to the officers from other Central Services with an aim to ascertain whether similar Categorisation Scheme was in vogue in their respective departments. However, as a result of detailed discussions it emerged

that such Categorisation Scheme was not prevalent in any of these services. The professional performance evaluation in civil domain is carried out under different broad subjects such as terms of professional service engagement, organizational learning and performance, employee training development etc. However, there is no direct correlation between the methodology adopted by IAF and the civil world.

- Notwithstanding the same, majority of the officers perceived that the Categorisation Scheme for the various branches including the Categorisation of the Maintenance Officers in the Indian Air Force is not only beneficial for the individual officers but for beneficial for the organization as a whole. The benefits discussed were as follows:

- ✓ The officers remained current on majority of the aspects in the IAF.
- ✓ Categorisation Scheme ensured an updation of the knowledge on each individual.
- ✓ Lateral knowledge sharing.
- ✓ High level of practical knowledge and practical skills.
- ✓ The process of Categorisation identifies the right man for the right job and contributed towards enhancing the Human Resource Management and resource utilization.

Recommendations and Conclusion

- ✓ The recommendations are based on the data analysis and personal experience on the categorisation process.
- ✓ The respondents of the sample taken feel that the Cat Boards help enhance the professional knowledge of the officers. Hence IAF must continue with the

Categorisation Boards for the Maintenance Branch officers viz., Aeronautical Engineers (Mechanical), AE(Electrical) as well as Logistics.

- ✓ Presently the scheme is purely voluntary and is opened upto the rank of Group Captain (Select). IAF may consider making this mandatory upto the rank of Gp Capt (Select) and voluntary for Air ranks.
- ✓ There should be additional reward (monetary / administrative benefit) for officers holding Category as a mark of recognition. This would encourage potential fence sitters.
- ✓ Placement to important appointments may be considered based on the category held by the officer. This would give good sense of achievement in the minds of young officers.
- ✓ Postings abroad can be linked to the Cat status of the officer.
- ✓ The Scheme of Categorisation is recommended to be emulated in the Indian Army, Indian Navy and all other Central services by incorporating changes in the Categorisation format evolved by the IAF to suit the specific requirements of respective services.

Conclusion

Scheme of Categorisation of the officers in the Indian Air Force unfolds itself by evaluating the individual officers with respect to their professional competency, practical experience and their ability to handle on ground situation which are at time very challenging and also very vital for the organization. Any compromise on such qualities of an officer can have irreversible ramifications of the organization.

Categorisation scheme adopted by the IAF has had positive impact on employees' motivation to perform better. The officers identify their strengths and

weaknesses and work towards improving their skill sets. Since the employees are well aware of the organizational goals, they can also work on improvising their skills further to achieve them. With the changing trend, more recent techniques and approaches are being formulated to measure employee productivity and organizational performance.

Categorization of Officers in the Indian Air Force has been successful in identification and ascertaining the professional competency of the officers in terms of application and using knowledge, skills, abilities, behaviours and personal characteristics like mental / intellectual / cognitive, social / emotional / attitudinal, and physical / psychomotor attributes necessary to successfully perform critical work tasks, specific functions, or operate in a given position.

Over a period of time, the scheme of Categorisation of officers has proven itself in terms of motivating the officers to keep themselves abreast with the latest technological changes and challenges in the environment and has definitely enhanced the overall efficiency of the IAF as an organization. Continuous research in the Scheme of Categorisation of officers for all the branches of the Indian Air Force is a necessity in order to still strengthen the existing scheme for further refinement.

Bibliography

- ✓ Bohlander, G. & Snell, S., 2010. *Managing Human Resources*, Mason: Cengage Learning.
- ✓ Gomes, J. & Romao, M., 2014. Advantages and limitations of performance measurement tools: The balanced scorecard. In *7th IADIS Information Systems 2014 Conference (IS 2014)*. Madrid: ISEG School of Economics and Management.
- ✓ Landy, F. & Conte, J., 2007. *Work In The 21St Century: An Introduction To Organizational And Industrial and Organisational Psychology*, New Delhi: Tata McGraw-Hill Education.
- ✓ Martocchio, J., 2011. *Strategic Compensation: A Human Resource Management Approach*, Noida: Dorling Kindersley.
- ✓ Noe, R., 2008. *Human Resource Management*, New Delhi: Tata McGraw-Hill Education.
- ✓ Shaout, A. & Yousif, M., 2014. Performance Evaluation Methods and Techniques Survey. *International Journal of Computer and Information Technology*, 3(5), pp.966–979.
- ✓ Taylor, T., Doherty, A. & McGraw, P., 2007. *Managing People in Sport Organizations: A Strategic Human Resource Perspective*, Oxon: Routledge.

Reports:

- ✓ Air Force Order on Aeronautical Engineers Categorisation Board (AECEB) issued in 2011.
- ✓ Air Force Order on Categorisation of Maintenance Branch Officers (MOCEB) issued in 2014.
- ✓ Various iterations and feed back reports on Categorisation Board.

ANNEXURE-1 (Refers to Chapter- 5)

Survey Questionnaire

AS ATTACHED SEPARATELY

ANNEXURE -2

Construct wise Excell Sheet of Responses

ATTACHED SEPARATELY