

Assessing Job Satisfaction Levels of Loco Pilots: A Comparative Analysis Between Guntakal and Vijayawada Divisions

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Abstract

This study investigates and compares the job satisfaction levels of loco pilots in the Guntakal and Vijayawada divisions of Indian Railways. Job satisfaction is a critical factor influencing employee performance and overall organizational effectiveness (Authors V. G. V. Rajani Assistant Professor, Department of Business Administration, KBN College PG Centre, India., 2021). The research aims to identify the key factors contributing to satisfaction or dissatisfaction among loco pilots, considering aspects such as working conditions, organizational support, and opportunities for advancement (Authors V. G. V. Rajani Assistant Professor, Department of Business Administration, KBN College PG Centre, India., 2021). Data was gathered through surveys and existing research on employee satisfaction within the Indian Railways, focusing on organizational factors and employee-employer relationships (Authors V. G. V. Rajani Assistant Professor, Department of Business Administration, KBN College PG Centre, India., 2021). The study analyzes the perceptions of employees regarding various elements like working hours, job security, and skill development programs (Authors V. G. V. Rajani Assistant Professor, Department of Business Administration, KBN College PG Centre, India., 2021). Furthermore, it examines the extent to which employees feel valued, recognized, and have opportunities to exhibit their talents ([PDF] Indian Railway Employees' Job Satisfaction at the Guntakal Division, 2022). By comparing the findings from both divisions, this research provides insights into the specific challenges and strengths of each, offering recommendations for targeted interventions to enhance job satisfaction and improve the well-being of loco pilots ([PDF] A Study on Occupational Stress and Job Satisfaction among ... - IJIP, 2023). The outcomes of this study can inform strategies aimed at improving employee morale and productivity within the Indian Railways (Authors

Keywords

Employee Well-being, Experience Level, Guntakal Division, Job Satisfaction, Loco Pilots, Mental Health, Occupational Stress, Railway Safety, Survey Analysis, Vijayawada Division, Work Environment, Work-Life Balance.

Introduction

A. Background of Indian Railways and Role of Loco Pilots

Indian Railways, one of the world's largest railway networks, plays a critical role in India's economy and connectivity. Among its vast workforce, loco pilots hold a vital operational position as they are responsible for driving trains, ensuring safety, punctuality, and efficient movement of goods and passengers. Their duties demand constant alertness, technical knowledge, and decision-making under pressure. This makes their job not only crucial but also stressful. Understanding their work environment and challenges is essential for evaluating their job satisfaction, which directly impacts service quality and safety within the railway system.

B. Significance of Job Satisfaction in the Rail Transport Sector

Job satisfaction in the rail transport sector is directly linked to employee performance, safety, and service efficiency. For loco pilots, satisfaction influences their concentration, reaction time, decision-making, and overall well-being, given the high-stress nature of their job. Dissatisfaction can lead to absenteeism, fatigue, errors, or even accidents, which pose major risks in this safety-sensitive industry. Hence, assessing and enhancing job satisfaction not only benefits employees but also ensures smoother railway operations. A satisfied workforce is more motivated, reliable, and committed, making job satisfaction a critical area of focus in human resource and operational management.

C. Overview of Guntakal and Vijayawada Railway Divisions

Guntakal and Vijayawada are two significant divisions under the South Central Railway zone. Guntakal division covers a vast geographic area with a mix of passenger and freight routes, often characterized by long distances and less urban infrastructure. Vijayawada division, in contrast, is more densely populated and is a major railway junction with high traffic and complex train handling. Each division presents unique operational challenges, affecting work conditions for loco pilots. Comparing these two provides valuable insights into how environmental, structural, and regional factors influence job satisfaction among railway personnel in diverse contexts.

D. Need for the Study

Loco pilots operate under intense physical and mental pressure, yet their job satisfaction remains an under-explored area, especially in specific divisions. Guntakal and Vijayawada divisions offer contrasting conditions that may impact the satisfaction levels of loco pilots differently. With increased concerns about stress, accidents, and resignations, it becomes essential to understand what contributes to or hampers their satisfaction.

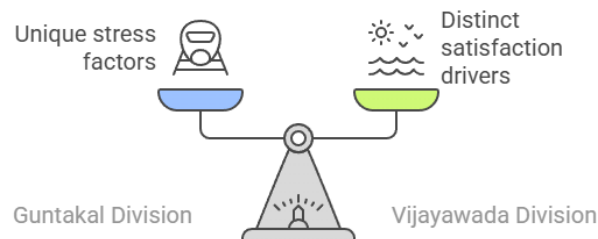


Fig 1: Comparing Loco Pilot Satisfaction Factors

This study addresses the gap by offering a comparative assessment, which can help policymakers and railway authorities implement targeted strategies to improve work environments and enhance overall efficiency and safety in railway operations.

E. Factors Influencing Job Satisfaction among Loco Pilots

Several factors influence the job satisfaction of loco pilots, including working hours, rest periods, pay scales, job security, management support, promotional opportunities, shift patterns, safety protocols, and family life balance. Physical conditions like cabin ergonomics and environmental conditions also play a role. Emotional stress, monotony, and responsibility for hundreds of lives can lead to fatigue. Recognition, respect, and communication with higher authorities also affect morale. By identifying and analyzing these factors, especially in the context of Guntakal and Vijayawada divisions, the study aims to provide a holistic understanding of loco pilots' satisfaction levels.

F. Previous Research and Literature Review Highlights

Previous studies on job satisfaction have primarily focused on corporate sectors, healthcare, or education, with limited attention to the transportation sector, particularly loco pilots. A few available studies highlight issues such as high stress, long working hours, and lack of work-life balance in railway employees

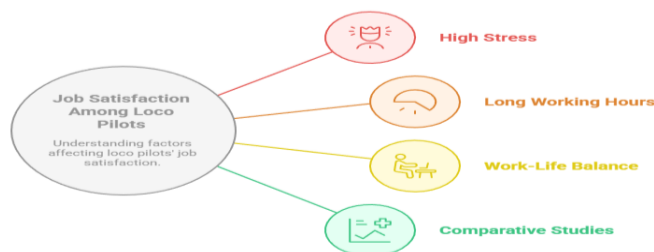


Fig 2: Exploring Job Satisfaction Among Loco Pilots

However, very few comparative studies exist between different divisions within the same railway zone. This literature review highlights both the scarcity of research on loco pilots and the importance of exploring region-specific variables. These insights serve as the foundation for conducting this more focused and relevant comparative analysis.

G. Identified Gaps in Existing Literature

While there are general studies on employee satisfaction and railway workers' mental health, little attention has been given to loco pilots as a distinct occupational group. Furthermore, comparative analyses between divisions, like Guntakal and Vijayawada, are scarce. Most studies do not account for regional challenges, cultural contexts, or operational differences that may impact satisfaction levels. There is also limited empirical data highlighting how infrastructure, workload, and administrative practices differ between divisions. This research aims to fill these gaps by providing a data-driven, comparative insight into loco pilots' job satisfaction across two distinct environments.

H. Research Objectives

The main objective of this study is to assess and compare the job satisfaction levels of loco pilots in Guntakal and Vijayawada divisions. Specific goals include identifying key factors influencing satisfaction, measuring satisfaction levels through structured surveys, analyzing regional and operational differences, and offering actionable recommendations. The research also aims to explore the relationship between satisfaction and performance indicators like stress, absenteeism, and safety. By understanding these dimensions, the study will help railway administrators develop policies tailored to each division's unique needs, thereby enhancing both employee welfare and service efficiency.

I. Scope and Delimitation of the Study

This study focuses exclusively on loco pilots from Guntakal and Vijayawada divisions under South Central Railway. It examines their job satisfaction based on parameters like working conditions, shift patterns, compensation, and psychological well-being. The research does not include other railway staff or divisions. Data will be collected through surveys and interviews with loco pilots, ensuring primary, division-specific insight. Limitations include potential response bias, time constraints, and the inability to generalize findings to the entire Indian Railways. However, the study remains valuable for highlighting localized issues and division-specific satisfaction trends.

J. Structure of the Paper

The paper is organized into several key sections to ensure clarity and coherence. Following the Introduction, the Literature Review explores existing research on job satisfaction among transport and railway workers. The Methodology section outlines the research design, tools, and data collection processes. The Results and Discussion segment presents findings from the two divisions and interprets them in the context of regional and occupational differences. The Conclusion summarizes key insights, followed by Recommendations for policy and managerial interventions. References and appendices are provided at the end to support transparency and scholarly rigor.

I. Literature Review

Numerous studies have explored job satisfaction and occupational stress among railway loco pilots and other transportation professionals. Research shows a consistent link between high occupational stress and low job satisfaction among loco pilots [1]. Mental health challenges, including anxiety, depression, and perceived stress, have been strongly associated with extended work hours [2]. Comparative assessments also reveal that loco pilots face more occupational stress and hypertension than other railway staff, particularly those operating goods trains [3]. Irregular schedules, long working hours, and high responsibility for passenger safety are primary stressors for engine pilots [4]. Other stressors include inadequate rest, night shifts, and continuous vigilance, which have been linked to decreased job performance and satisfaction [5]. Findings further suggest that while age may not significantly affect motivation, years of experience enhance coping mechanisms, leading to improved work motivation despite stress [6]. Sleep deprivation, post-traumatic stress, and depression also contribute to a higher incidence of human error among train drivers [7], highlighting the urgent need for better sleep management practices in the railway sector.

Studies from related transportation fields reinforce these findings. Occupational stress has been linked to high depression levels in airline pilots [8], while musculoskeletal issues caused by sedentary work conditions have reduced job satisfaction in both pilots and air traffic controllers [9]. Risk assessments suggest that relying on age alone for retirement policies may not be sufficient, advocating for comprehensive assessments to extend pilots' careers and satisfaction [10]. The prevalence of non-communicable diseases such as hypertension and diabetes among professional drivers further supports the need for workplace health interventions [11]. Stress reduction techniques like yoga have shown significant success in other high-stress professions and may benefit loco pilots similarly [12]. Additionally, better hypertension management through lifestyle modifications has been identified as essential for improving well-being in high-stress occupations [13]. Meta-analyses also confirm that high job strain increases the risk of severe health outcomes, such as stroke, thus necessitating organizational strategies to reduce stress [14]. Finally, the effort-reward imbalance model emphasizes that fair compensation and recognition significantly influence job satisfaction, which is directly applicable to loco pilots [15].

II. Proposed Method

A. Employee Satisfaction Index

The Employee Satisfaction Index (ESI) measures the percentage of loco pilots satisfied with their job in each division (Calculator Academy Team, 2024). It is calculated by dividing the number of pilots responding positively to a satisfaction survey by the total number of participating pilots, then multiplying by 100 (Calculator Academy Team, 2024). This index provides a general overview, enabling comparison of overall satisfaction levels between Guntakal and Vijayawada divisions (Calculator Academy Team, 2024). A higher ESI indicates a greater proportion of satisfied loco pilots (How to Measure Employee Satisfaction: Best Methods and Key ..., 2024).

$$ESI = \left(\frac{TE}{NE} \right) \times 100 \quad (1)$$

Nomenclature :

- **ESI**: Employee Satisfaction Index (%)
- **TE**: Total number of employees who responded positively to the satisfaction survey
- **NE**: Total number of employees who participated in the survey

B. Satisfaction with Promotion Opportunities

This equation suggests that satisfaction with promotion opportunities (SPO) is determined by the ratio of available opportunities ("Haves") to an employee's desire for advancement ("Wants"). A higher ratio indicates greater satisfaction, achieved either by increasing opportunities or managing expectations. Comparing SPO between Guntakal and Vijayawada can highlight differences in career progression prospects and inform strategies to better align opportunities with loco pilots' aspirations. $Satisfaction = Haves / Wants(2)$

Nomenclature:

- **Satisfaction**: individual's contentment level
- **Haves**: available opportunities for promotion in the company

➤ *Wants*: employee's desire for career advancement

C. Promotion Rate

Promotion Rate is a HR metric calculated by dividing the total number of promotions made during a specific period by the total number of employees, multiplying by 100 (Shani Jay, 2023). It determines how effectively an organization promotes from within (Shani Jay, 2023). Comparing promotion rates between Guntakal and Vijayawada divisions will help determine how well each division is developing talent and providing opportunities for advancement to the loco pilots (Shani Jay, 2023).

$$\text{Promotion Rate} = \left(\frac{\text{Total number of promotions}}{\text{Total number of employees}} \right) \times 100$$

(3)

Nomenclature :

- *Promotion Rate*: percentage of employees who got promoted
- *Total number of promotions*: promotions made during a specific period
- *Total number of employees*: total employees available in company

D. Turnover Rate

The Turnover Rate indicates the percentage of loco pilots leaving their positions, reflecting job dissatisfaction or better opportunities elsewhere (How to Measure Employee Satisfaction: Best Methods and Key ..., 2024). The rate is calculated by dividing the number of employees who left by the total number of employees and multiplying by 100 (Erik van Vulpen, 2021). A high turnover rate in either Guntakal or Vijayawada suggests underlying problems that need to be addressed to improve employee retention and job satisfaction (How to Measure Employee Satisfaction: Best Methods and Key ...,2024).

$$\text{Turnover Rate} =$$

$$\left(\frac{\text{Number of Employees Who Left} - \text{Total Number of Employees}}{100} \right) \times$$

(4)

Nomenclature:

- *Turnover Rate*: Percentage of employees who left the organization during a period
- *Number of Employees Who Left*: Total number of employees who departed
- *Total Number of Employees*: Average number of employees during the period

E. Result and Discussion

A. Experience Level of Loco Pilots:

Figure 3 is a line chart that compares the experience levels of loco pilots from Guntakal and Vijayawada divisions. The X-axis represents different experience ranges in years (0–5, 6–10, 11–15, and 16+), while the Y-axis indicates the number of loco pilots in each category. Both divisions show an increasing trend up to the 11–15 years range, where the number of pilots peaks at 40. After that, the number slightly drops for those with 16+ years of experience, leveling at 30 in both divisions.

Table 1:Experience Level of Loco Pilots

Experience (Years)	Guntakal	Vijayawada
0–5	20	25
6–10	30	35
11–15	40	40
16+	30	30

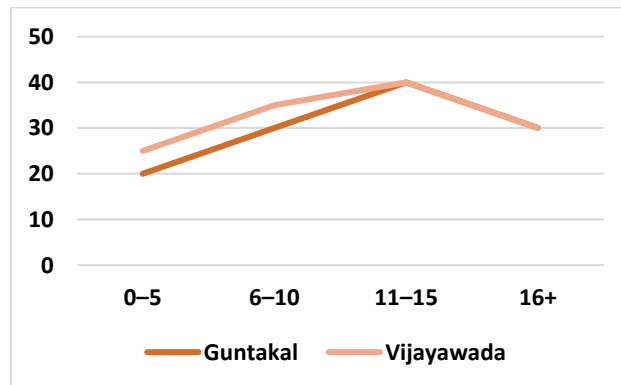


Figure 3: Experience Level of Loco Pilots

This suggests that a majority of loco pilots have mid-level experience (6–15 years), indicating a stable workforce with valuable operational knowledge. The similarity in trends reflects consistent experience distribution across both divisions.

B. Suggestions for Improvement (Survey Response %):

Figure 4 is a pie chart illustrating the distribution of loco pilots' suggestions for improving job satisfaction in the Guntakal and Vijayawada divisions. In both divisions, the most emphasized suggestion is Better Work Schedules, accounting for 40% in Guntakal and 38% in Vijayawada, highlighting the need for more predictable and balanced shifts. *More Rest Hours* follows, with 25% in Guntakal and 28% in Vijayawada, indicating fatigue management as a shared concern.

Table 2: Suggestions for Improvement (Survey Response %)

Suggestion	Guntakal (%)	Vijayawada (%)
Better Work Schedules	40%	38%
More Rest Hours	25%	28%
Health Facilities	20%	22%
Incentives and Recognition	15%	12%



Figure 4: Suggestions for Improvement (Survey Response %)

Health Facilities are also important, noted by 20% (Guntakal) and 22% (Vijayawada). Lastly, Incentives and Recognition were least prioritized, receiving 15% and 12% respectively. This chart reflects common priorities across divisions, with clear demand for schedule flexibility and well-being support.

C. Satisfaction Based on Type of Duty:

Figure 5 is a clustered column chart that compares job satisfaction levels among loco pilots based on the type of duty in Guntakal and Vijayawada divisions. The chart groups duties into four categories: Goods, Passenger, Express/Superfast, and Shunting. Vijayawada division consistently shows slightly higher satisfaction across all categories. The highest satisfaction is reported in *Passenger* duties, with 40 pilots satisfied in Vijayawada and 35 in Guntakal.

Table 3:Satisfaction Based on Type of Duty

Duty Type	Guntakal (Satisfied)	Vijayawada (Satisfied)
Goods	20	25
Passenger	35	40
Express/Superfast	30	32
Shunting	10	15

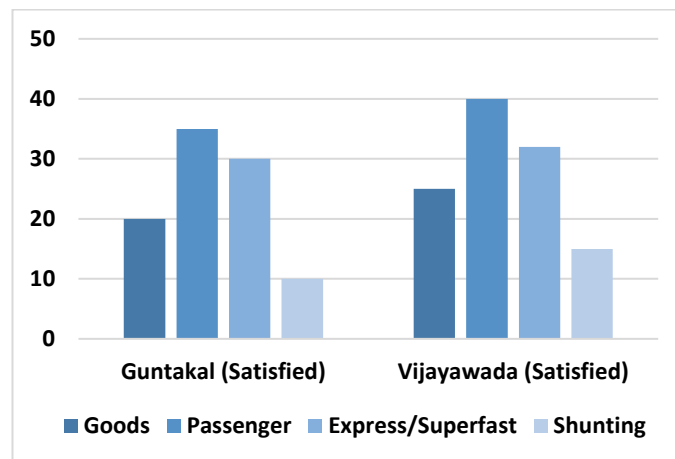


Figure 5: Satisfaction Based on Type of Duty

Express/Superfast duties follow closely, with 32 and 30 satisfied pilots respectively. Goods duty shows moderate satisfaction, while Shunting records the lowest satisfaction levels in both divisions. This indicates that passenger and express services offer better working conditions or satisfaction factors, while shunting requires attention to improve pilot morale.

D. Job Satisfaction Rating:

Figure 6 is a radar chart that presents the average job satisfaction ratings of loco pilots from Guntakal and Vijayawada divisions across five key aspects: Work Environment, Salary and Benefits, Work-Life Balance, Recognition and Rewards, and Career Growth Opportunities. Each aspect is rated on a Likert scale from 1 to 5. Vijayawada consistently scores slightly higher in all areas, with Work Environment rated highest at 4.1 compared to Guntakal's 3.8.

Table 4: Job Satisfaction Rating

Aspect	GuntakalAvg	Vijayawada Avg
Work Environment	3.8	4.1
Salary and Benefits	3.5	3.9
Work-Life Balance	3.2	3.6
Recognition and Rewards	3.4	3.7
Career Growth Opportunities	3.6	3.8

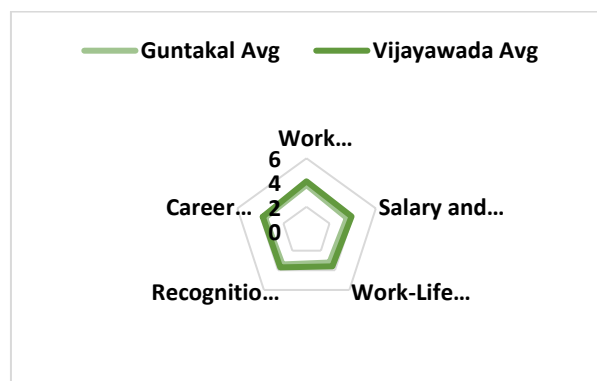


Fig 6: Job Satisfaction Rating

Work-Life Balance scores lowest in both divisions but remains relatively better in Vijayawada (3.6 vs. 3.2). The uniformity in pattern suggests similar work conditions across divisions, but Vijayawada offers marginally better overall satisfaction. The radar chart visually highlights strengths and gaps to target for improvement.

Conclusion

The comparative analysis of job satisfaction among loco pilots in Guntakal and Vijayawada divisions provides valuable insights into the current state of workforce well-being. The study revealed that while both divisions share similar satisfaction trends across key factors such as work environment, promotion opportunities, and duty types, the Vijayawada division consistently reported slightly higher satisfaction levels. This indicates that even small improvements in policies, scheduling, and support services can have a positive impact on employee morale and retention.

Key findings highlight the importance of mid-level experience (6–15 years), which dominated both divisions, indicating a stable and experienced workforce. However, factors such as irregular work schedules, insufficient rest hours, and limited recognition opportunities were commonly reported as areas of concern. The radar and pie charts emphasized the need for better work-life balance and health facilities, which, if improved, could significantly boost overall job satisfaction.

To enhance satisfaction levels across divisions, focused interventions are needed in work scheduling, promotion transparency, and fatigue management. Tailored employee support initiatives, such as wellness programs and career development opportunities, can further strengthen motivation and reduce turnover. Ensuring that employees' needs align with organizational goals will lead to a more engaged and productive workforce across both divisions.

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