

Driving trains, juggling lives: A review on work-life balance of Indian loco-pilots

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Abstract: Loco-pilots (railway drivers) in India operate in a highly demanding and challenging work environment. Their job involves working in isolation, limited social interaction, and the immense responsibility of ensuring both safety and punctuality while running the train. The role demands constant alertness, mental resilience, and the ability to adapt to unpredictable conditions. Loco-pilots have little control over how their work is carried out, as it is largely dictated by strict timetables and technical constraints like train type and track routes. One of the major challenges they face is maintaining a balance between work and personal life. Long working hours, irregular and inflexible schedules, and a heavy workload often lead to work-family conflict and increased stress levels. While much of the existing research on work-life balance focuses on corporate employees, this study aims to shift that focus to the unique experiences of Indian railway drivers. This review provides a comprehensive look at the lives of loco-pilots, highlighting the key factors that contribute to their work-life imbalance—factors that can even impact safety and increase the likelihood of accidents. It also explores the broader implications of these working conditions on their overall well-being, productivity, and the growth of Indian Railways. The paper briefly reviews essential concepts related to work-life balance, emphasizing the urgent need to address this issue among railway drivers.

Keywords: Loco-pilots, Stress and work-life balance, Working conditions.

1. Introduction

The concept of work-life balance (WLB) has gained significant attention in recent years, both in academic circles and everyday conversations. It is commonly understood as the ability to effectively manage and fulfill responsibilities at work while also maintaining personal well-being and satisfaction across various areas of life [1, 2].

India's railway system, in operation for over 150 years, has played a pivotal role in shaping the nation's development during both colonial and post-colonial periods [3]. At the heart of this massive system are the loco-pilots, or railway drivers, whose jobs involve operating trains under strict timetables and technical constraints. These factors significantly limit their autonomy and contribute to a lack of work-life balance [4].

This review aims to explore and assess the work-life balance of Indian railway drivers, focusing on their working conditions and the impact these have on their overall well-being. Understanding these issues is crucial—not only for the health and productivity of the drivers themselves but also for the efficiency and safety of the Indian Railways as a whole.

1.1. Indian Loco-Pilots

The role of a railway driver—also known as a loco-pilot—is one of immense responsibility and demands both physical and mental endurance. It requires unwavering focus, discipline, patience, and the ability to stay calm and efficient under diverse and often challenging conditions. To succeed in this role, one must possess qualities like punctuality, commitment, adaptability, self-confidence, and strong decision-making skills [5].

Loco pilots are the backbone of Indian Railways, ensuring the safe and timely transport of millions of passengers and vast quantities of freight daily. As of March 2024, Indian Railways operates 10,675 electric and 4,397 diesel locomotives, along with 91,948 passenger coaches and 327,991 freight wagons (Wikipedia). In the fiscal year 2023–24, the network transported approximately 6.9 billion passengers and over 1.59 billion metric tons of freight (Wikipedia). These figures underscore the critical role of loco pilots in maintaining the efficiency and reliability of one of the world's largest railway systems. (Source: Indian Railways, Wikipedia).

Their duties extend far beyond simply “driving” a train. They are responsible for the entire journey—from ensuring the safety of the passengers and cargo to keeping the train on schedule. In essence, a driver’s performance directly impacts the effectiveness of the entire railway system. No matter the weather—be it scorching heat, freezing cold, or heavy rain—loco-pilots work tirelessly day and night, often in solitude, to keep the trains running.

The working conditions of railway drivers are demanding, both physically and mentally. High levels of concentration are required at all times, and the irregular hours add another layer of difficulty. Drivers often deal with noisy and uncomfortable environments—such as vibrations, extreme cabin temperatures, or poor ventilation—which contribute to physical strain.

Additionally, the job is governed by rigid schedules and technical constraints (like the type of train or track), leaving very little room for personal discretion. The isolated nature of the work, combined with limited social interaction and the pressure of maintaining both safety and punctuality, creates a stressful psychosocial environment.

Balancing work with personal and family life is a major challenge for loco-pilots. Long hours, inflexible shifts, and a consistently heavy workload lead to significant work-family conflict, a common stressor in their profession [5, 6]. This makes the issue of work-life balance a particularly critical one for railway drivers in India.

1.1.1. Navigating the Work Environment of Loco Pilots

Loco pilots in India continue to operate under a 'continuous' roster system, which does not guarantee them a fixed day off on any given calendar day. According to recent guidelines issued by the Railway Board, the uninterrupted duty for locomotive pilots should typically not exceed nine hours. However, in exceptional circumstances, this can be extended up to 11 hours, with a two-hour advance notice required before the expiration of duty hours. If a train is within an hour of its destination at the end of the 11-hour duty, the pilot may continue, provided the total duty does not exceed 12 hours (The Times of India)

These working conditions stand in contrast to the International Labour Organization (ILO) standards, which recommend a maximum of eight working hours per day and 48 hours per week for industrial workers, including those in transportation sectors. The discrepancy between the actual working hours of loco pilots and international labor standards raises concerns about worker welfare and safety in the railway industry.

When operating goods trains, there are no fixed duty schedules. These assignments often involve extremely long hours—sometimes 10 hours or more—and unpredictable waiting times before the return journey to their home station or headquarters. In many cases, a loco pilot may have to wait over 30 hours before being able to head back. After 96 hours since their last sign-off, a loco pilot can formally request to be sent back to their home station, either with or without having to operate a train. However, there is no guarantee of an immediate return.

Moreover, in cases of personal or family emergencies, loco pilots are not allowed to leave their assigned train cab unless they have officially signed off duty. Even during their rest periods, they may be called back to duty at any time if there is an operational need [5].

1.1.2. Loco Cab Conditions: Impact on Driver Comfort and Performance

Loco-pilots are often exposed to harsh working conditions inside the locomotive cab. Constant noise, dust pollution, intense heat, exposure to high-voltage electricity in electric engines, and diesel fumes in diesel locomotives all contribute to early physical and mental fatigue. The noise levels in diesel locomotives can exceed 100 decibels—about 25 decibels higher than the maximum safe limit of 75 decibels recommended by the Industrial Pollution Control Board.

Unfortunately, the cabs are not soundproof. Heat, engine noise, and diesel fumes easily enter the driving area through poorly insulated doors, creating a physically taxing environment. To improve these conditions and reduce fatigue, it's essential to upgrade locomotive cabs with proper sound insulation and air-conditioning. This would help drivers stay more focused, reduce health risks, and enhance overall train safety [7].

1.1.3. Navigating Personal and Family Struggles in the Loco Pilot's Life

Loco-pilots often struggle to spend quality time with their families or participate in social activities due to the demanding nature of their jobs.

- Most drivers do not live in railway-provided housing and often reside 5–6 kilometers away from their home station. As a result, they spend a significant amount of time commuting. Even when granted 16 hours of rest at the home station, they typically get only 10–12 hours of actual rest.
- Unlike other railway employees, who are entitled to 12 national holidays and 52 Sundays off each year, loco-pilots are not guaranteed any national holidays. To attend to personal matters or family responsibilities, they often have to take leave or squeeze tasks into the short breaks between duties. This lack of personal time can lead to stress, mental exhaustion, and a reduced ability to concentrate while on duty [5].
- Moreover, because there is no fixed calendar-day rest provision for loco-pilots, fulfilling family and social obligations becomes even more challenging [7].

1.2. Work-Life Balance: Conceptual Insights and Definitions

1.2.1. Work-Life Balance

In the past, organizations viewed “work” and “life” as two completely separate worlds. Employees were expected to prioritize their jobs over personal matters, and the general attitude was that what happened outside the workplace wasn't the employer's concern. However, times have changed. Today, organizations increasingly recognize that personal life and work are interconnected. Many now understand that supporting employees in balancing these areas leads to better outcomes—for both the individual and the organization.

As a result, more companies are adopting “work-life programs” or “family-friendly policies” to help employees manage their responsibilities both at work and at home. Work-life balance (WLB) refers to efforts and practices that allow individuals to maintain a healthy balance between their job demands and their personal or family needs.

WLB doesn't necessarily mean splitting time equally between work and personal life. Instead, it's about achieving satisfaction and fulfillment in both areas. A healthy work-life balance means being able to enjoy and succeed in different areas of life—work, family, social responsibilities, and personal well-being. The ideal balance varies from person to person and changes over time depending on one's life stage or priorities—for instance, what works for a single individual may not work after marriage or nearing retirement [8].

Work serves both practical and emotional purposes—it provides income and structure, but it also gives a sense of identity, achievement, and self-worth. Managing work-life balance also means managing

personal expectations and setting realistic goals that don't conflict with family or personal commitments [9].

The term "work-life balance" first appeared in the UK in the late 1970s and was introduced in the U.S. around 1986. As work and home boundaries have become more blurred over time, the relevance of this concept has only grown. Today, work-life balance is about giving individuals control over when, where, and how they work. It's achieved when employees feel their right to a fulfilling life both inside and outside of work is respected—for their benefit and that of the wider society (The Work Foundation).

Globally, work-life balance has become a major area of focus in human resource management, with growing attention from policymakers, organizations, and employees alike [10].

The concept emphasizes that paid work and personal life shouldn't be seen as conflicting forces but as complementary parts of a complete life. Supporting work-life balance helps people improve their quality of life and broaden their participation in both employment and social engagement.

Manfredi and Holliday [11] argue that work-life balance also supports people who want to play active roles in community life. Some definitions see balance as devoting equal time, energy, and commitment to work and personal roles Khallash and Kruse [12]. Greenhaus, et al. [13] define it as being equally engaged and satisfied in both work and family roles, while Clark [14] adds that it includes overall satisfaction and functioning in both domains with minimal conflict.

Kofodimos [15] sees balance as having a satisfying and healthy life that includes work, leisure, and love. From a corporate perspective, work-life balance is increasingly seen as part of an organization's social responsibility. Companies that support WLB not only prevent burnout and health issues but also improve morale, reduce turnover, and enhance productivity [16].

Organizations that prioritize WLB tend to have healthier, more committed employees who work efficiently and experience less stress (www.athenaswan.org.uk). Jim Bird, CEO of worklifebalance.com, defines it as "meaningful achievement and enjoyment in everyday life."

Work-life balance is a well-researched concept closely tied to overall quality of life and job satisfaction [17]. Balancing career success with personal or family responsibilities is challenging but essential for maintaining well-being Broers [18]. Dundas [19] describes it as managing the juggling act between work and other meaningful life activities like family, community, personal growth, and recreation.

Greenhaus, et al. [13] reiterate that people with high work-life balance are those who invest similarly in both areas and are equally satisfied with both.

1.2.2. *Work-Life Imbalance*

According to Kofodimos [15] when work overshadows personal life, it creates imbalance, leading to high stress, reduced quality of life, and lower effectiveness at work. This imbalance often creates a constant inner conflict, as individuals feel they're not meeting their personal or family needs. The gap between satisfaction at work and at home can lead to chronic stress and unhappiness.

1.2.3. *Life and Job Satisfaction*

Life satisfaction refers to a person's overall well-being and quality of life, which includes physical and mental health, relationships, personal development, and recreation [20, 21]. Job satisfaction, on the other hand, is about how positively or negatively an employee feels about their job, shaped by emotional and mental evaluations of their work experience [22].

1.2.4. *Happiness*

Happiness is a complex and deeply personal concept. Throughout history, people have debated what truly makes life happy—whether through religion, philosophy, or more recently, psychology. Positive psychology suggests three main paths to happiness [23, 24]:

- The Pleasant Life – Finding joy in the moment and cultivating positive emotions about the past and future.
- The Engaged Life – Using personal strengths and virtues to experience deep satisfaction and flow in life's key areas.
- The Meaningful Life – Dedicating oneself to something greater, such as family, community, faith, or a cause.

According to Seligman [23] the "full life" combines these three routes—enjoying the present, using one's strengths, and contributing to a higher purpose—to create what he calls "authentic happiness."

1.2.5. *Quality of Work Life*

Quality of work life refers to how people feel about their job environment—this includes fair pay, job security, working conditions, workplace relationships, and how meaningful their work feels. According to the American Society of Training and Development, quality of work life is about how well an organization allows its employees to meet their personal needs through their job experience [25]. It emphasizes creating a human-centered work environment that supports both employee well-being and organizational success.

1.2.6. *Work-Life Conflict*

Work-life conflict occurs when the demands of work and personal life clash, making it hard for individuals to meet obligations in one role without affecting the other. It's a type of inter-role conflict, where pressures from both areas become incompatible [25].

2. Exploring Existing Research on Work-Life Balance

Given the limited availability of studies specifically focusing on the work-life balance of Indian railway drivers, this review incorporates relevant research from other countries and occupations with similar characteristics to provide a broader understanding of the topic.

2.1. *Insights from Previous Work-Life Balance Studies*

A wide range of literature explores the concept of work-life balance, particularly in occupations involving high stress and demanding schedules. Fatigue and tiredness, as highlighted by Hildebrandt, et al. [26] and Rosa [27] are cumulative in nature and often result from long working hours, insufficient rest between shifts, and extended periods without adequate time off [5, 28, 29]. Such fatigue is closely associated with tasks that require continuous attention—such as driving railway engines or vehicles, operating complex machinery, and working in physically challenging or hot environments [30].

Shift work, in particular, introduces significant occupational stress due to irregular hours and disrupted biological rhythms. These stressors can lead to performance errors, increased workplace accidents, and poor product quality. Additionally, fatigue and irregular work hours are linked to health problems, reduced job satisfaction, and social life disruptions Colligan and Rosa [31]; Smith [32]; Wedderburn [33]; Barling [34]; Barton, et al. [35]; Bunnage [36] and Repetti [37].

Grant-Vallone and Ensher [38] found that work-life conflict is more commonly experienced as work interfering with personal life than the other way around. This imbalance often results in heightened stress, anxiety, and health concerns.

Dawson, et al. [39] conducted an extensive review showing that long work hours can adversely impact physical and mental health due to reduced sleep and recovery. This can lead to issues such as impaired concentration, poor decision-making, and risky behaviors. They also identified indirect health impacts like high blood pressure, heart problems, substance use, poor diet, and exercise habits—factors that significantly affect overall life satisfaction [40–43].

According to Greenhaus, et al. [13] individuals who prioritize family over work tend to experience a higher quality of life compared to those who focus more on work. They emphasized that a balanced

commitment to both domains contributes positively to overall well-being by reducing stress and conflict [14, 15, 44, 45].

Lockwood [46] also stressed that unmanaged stress in the workplace can lead to low morale, decreased productivity, and serious personal issues like depression, addiction, and burnout. Hyman, et al. [47] highlighted how working during weekends or after hours can cause emotional exhaustion and deteriorate employees' physical and mental health.

Greenhaus and Beutell [48] described work-life conflict as the result of competing emotional and behavioral demands between work and home life. This conflict can lead to stress, health issues, absenteeism, job dissatisfaction, and decreased commitment. Frone [49] expanded on this by associating it with depression, anxiety, burnout, and substance abuse.

Lauber and Kayten [50] demonstrated that family-supportive work environments can significantly reduce work-family conflict (WFC), leading to higher satisfaction in both work and personal life. Similarly, Beauregard and Henry [51] found that higher levels of WFC correlate with lower job satisfaction and organizational commitment.

Haddon and Hede [52] observed that while work tends to encroach on home life, home life often helps individuals recover energy lost at work. Ishaya and Ayman [53] discussed the growing pressure on employees to display their commitment by working longer hours, leaving less time for personal life.

Valk and Srinivasan [54] explored how Indian women professionals, particularly in the IT sector, manage work-family balance despite multiple role demands, largely due to strong family support systems.

Zhao, et al. [55] emphasized that family-friendly work environments can enhance job satisfaction, especially when work and family roles positively reinforce one another Aryee, et al. [56]. Ferguson, et al. [57] also found that social support contributes to both job and family satisfaction by helping employees maintain a work-life balance.

Jiang [58] underscored the importance of fair workplace practices. When supervisors treat employees with respect and recognize their unique needs, it fosters trust, satisfaction, and a sense of mutual respect, ultimately supporting work-life balance.

Jayakumar [59] found that a significant number of loco pilots in his study reported experiencing more than 12 stress factors, indicating a high level of occupational stress. Supporting this, Indian labour historian and journalist Zaen [60] highlighted how loco pilots are being stretched to their limits—facing extended work hours, back-to-back night shifts, and insufficient rest. These harsh conditions have been linked to the increasing number of fatal railway accidents in recent times.

Kaushal and Garima [61] noted that loco pilots often receive only moderate support from their families, struggle with low emotional regulation, and endure high job-related stress. Their research emphasized that a supportive family environment and better emotional regulation are crucial in managing the stress levels faced by loco pilots.

In a recent review, Deborah [62] shed light on the overlooked effects of overtime on loco pilots. Her article brings attention to how excessive work hours significantly impact their lives, both mentally and physically—issues that have long been underreported.

Echoing these concerns, Shekhawat, et al. [63] described the role of loco pilots in the Indian Railways as highly demanding. Tasked with operating trains and ensuring the safe and timely transport of passengers and goods across the country, these professionals are increasingly vulnerable to various mental health challenges.

2.2. Summary of Key Findings

The literature consistently shows that a lack of work-life balance can lead to a range of negative consequences, including stress, burnout, depression, and reduced job performance. The dual demands of work and family often result in time constraints and emotional strain. Burnout is commonly associated with heavy workloads, mental exhaustion, low job autonomy, and limited organizational support [5].

Balancing work and family life is universally recognized as essential for employee well-being. Research indicates that this balance is particularly challenging for Indian railway drivers, who often face stressful working conditions that negatively affect both their personal lives and professional performance [64]. The findings underline the urgent need for policies and practices that support better work-life integration in such demanding occupations.

3. Identified Gaps and Research Implications

3.1. Assessment of Research Gaps

A review of existing literature reveals a significant gap in research specifically focused on how Indian railway drivers navigate the demands of work and personal life to achieve a healthy balance. While work-life balance has been widely explored in the global context—especially in Western countries where the concept has evolved over the past four decades—there is a noticeable lack of studies examining these issues within the Indian railway sector [5].

Only a handful of studies have addressed the work-life balance of Indian railway drivers, and those that exist rarely capture the full scope of their lived experiences. It's important to recognize that cultural context plays a crucial role in how individuals perceive and manage work-life integration. What applies in Western settings may not directly translate to the Indian scenario, where cultural norms, family structures, and social expectations are vastly different.

Moreover, much of the existing research tends to focus solely on the "work" and "family" domains, overlooking other vital aspects of life such as friendships, hobbies, leisure activities, and community involvement. A holistic approach to understanding work-life balance must take these factors into account as well.

This study seeks to bridge that gap by shedding light on the realities faced by Indian railway drivers—their work conditions, daily challenges, and the extent to which existing organizational efforts support their quality of life. The goal is to explore how these drivers perceive their work environment and what more can be done to support them in achieving a more balanced and fulfilling life.

3.2. Core Issues in Research Exploration

Based on the review of literature, several key research questions have emerged:

1. What is the experience of Indian railway drivers in terms of work-life balance within their work environment?
2. How do factors related to both work and family influence their ability to maintain a healthy balance?
3. What strategies or practices do Indian railway drivers use to manage their work and personal lives effectively?

These questions form the foundation of the current research, which aims to understand how Indian railway drivers cope with the often-competing demands of their professional and personal lives.

Given the limited research available on this subject in the Indian context, there is a clear need for deeper exploration and study in this area [5].

4. Concluding Insights

Much of the existing literature on work-life balance has traditionally focused on employees in the corporate sector. In contrast, the present study sought to broaden that perspective by exploring this concept within the context of Indian railway drivers—a group often overlooked in academic research. The literature review revealed that maintaining a healthy work-life balance is becoming increasingly critical in today's demanding 24/7 work culture, particularly as working hours continue to lengthen.

This study offered a closer look at the everyday realities faced by railway drivers in India (Ranjan & Prasad, 2013). It underscores the urgent need for Indian Railways to collaborate with researchers, trade

unions, policymakers, and the drivers themselves to develop strategies and initiatives that help mitigate work-related stress and enhance the overall quality of life for these employees.

While this research is only a starting point, it is hoped that it brings much-needed attention to the challenges faced by railway drivers and prompts management to take meaningful steps toward improving their work conditions. Beyond highlighting current issues, the study aims to contribute to a deeper understanding of the environment in which Indian railway drivers operate, laying the groundwork for future improvements in their work-life balance.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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