

# A Critical Study of Revenue Generation and Expenditure Management in Indian Railways

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**Abstract**—Indian Railways is a concern due to the financial viability as the railway system is part of the Indian transportation system and economic development. To arrive at the financial performance of Indian Railways, this paper explores the role of revenue-generation and expenditure management and how the government policies and subsidies are involved in the two factors of the financial structure of the railway. The study is comprised of quantitative, descriptive and exploratory approaches. To obtain primary data, 150 officials of Indian Railways were requested to complete a structured questionnaire. The reports and available literature provided secondary data. Data analysis consisted of the statistical tools of SPSS (Version 27) and MS Excel; they were standard deviation, correlation, and regression analysis. The results affirm the notion that subsidies and government policies play major role in (\$revenue, expenditure) composition of Indian Railways and exhibit strong positive relationship between revenue production and expenditure control. To ensure the long-term operation sustainability and efficiency of the railway industry, the study has emphasized the importance of good financial management and enabling policy environments.

**Index Terms**—Indian Railways, Revenue Generation, Expenditure Management, Government Policies and Subsidies, Financial Performance

## I. INTRODUCTION

The Indian Railways is considered to be among the biggest railway networks as well as in the world and the backbone of the transport system in India. Under the management of the Ministry of Railways (India), it is very important in enhancing economic growth, trade, and mobility of millions of people in the country. The Indian Railways have developed into a great system linking the cities, villages, industries, and ports since it was founded in the middle of the

nineteenth century (Chakraborty and Dutta, 2022). In terms of thousands of trains every day and millions of passengers every day, Indian Railways offers not only cheap means of transportation but makes the development of the region and integration of the country possible. Due to its size and significance, the financial performance of Indian Railways directly influences the economy of the nation in general (Marik and Dutta, 2023).

The issue of revenue generation is one of the vital parts of the Indian Railways functioning as it defines how such an organization could preserve its functioning and invest in the modernization and expansion (Bear, 2020; Sinha & Sarma, 2016). The major revenues are passenger transportation, freight services, parcel and luggage services, catering, advertising, use of the stations commercially and leasing railway land and railway assets. The freight transportation provides the highest share of revenue among these sources. The transportation of bulk goods like coal, cement, food grains, iron ore, fertilizers, and petroleum products utilize the railway network that generates a lot of income (James and Shete, 2023; Timakova & Samoylova, 2023). Passenger services are also a source of substantial revenue to railroads because billions of passengers are transported by Indian Railways annually. Passenger fares are however usually maintained relatively low in order to make them affordable to the general population which at times constrains profitability of passenger operations (Maruvada & Bellamkonda, 2017). Moreover, Indian Railways has been seeking other revenue streams, such as partnerships with the population, redevelopment of railway stations, and privatization of railway property (Roy and Mitra, 2024; Dawda & Shrivastva, 2025).

Meanwhile, expenditure management is a crucial element that is also critical in defining financial sustainability of Indian Railways. The organization incurs heavy costs in maintaining the large infrastructure it has such as the railway tracks, bridges, signaling systems, stations, locomotives, coaches, and freight wagons. Some of the operational expenses are the fuel costs, electricity use, and the repair of the rolling stock, track repair and administration (Silva & Pessotto, 2025; Nelson & Wilson, 2025). Salaries and pension payments of the staff are one of the biggest projects of a railway spending because Indian Railways is one of the largest employers of the world. Besides operating expenses, there is an enormous infrastructure building, railroad electrification, station redevelopment, high-speed and semi-high-speed trains, and adoption of modern safety systems (Pereira and Arora, 2018; Kuriakose & Gupta, 2021). The Indian Railways have over the years made some reforms and other modernization processes to enhance efficiency and financial performance. Electrification of railway lines, digital ticketing, development of freight corridors, and improvement of logistics management have been implemented as a means of improving productivity and lowering the cost of operation (Sharma & Sharma, 2016; Mukhopadhyay, 2018). Developments like exclusive freight systems, implementation of modern trains are projects that grow the pace, capacity and potential revenue generation. In spite of these, Indian Railways has been experiencing several challenges that comprise an increase in the cost of operations, old infrastructure, and competitions with other means of transport like roadways and air transport (Danthanarayana & Kumarage, 2024). Cross-subsidy as another significant problem is where freight rates are relatively higher in order to offset smaller passenger fares, which in some cases impacts the competitiveness of rail freight services (Zunder & Islam, 2018; Tymoshchuk & Selishchev, 2025). In this regard, a critical analysis of the revenue generation and expenditure management in the Indian Railways is very important. This kind of study is useful in analyzing the effectiveness of the financial management practice and analyzing the existing sources of revenue and areas where the expenditure can be streamlined without necessarily affecting the quality of the services (Cheruiyot, 2018). It also

offers a clue to the policy actions and strategic reforms that have to be implemented in enhancing the financial sustainability of the railway industry. Through the balance between revenue and expenditure, the policymakers and researchers would be able to have a better study on how Indian Railways could keep its two sides of offering cheap public transport and ensuring financial sustainability and operational efficiency in the long-term (Khan & Purohit, 2023; Rahmah & Peter, 2024).

## II. AIM OF THE STUDY

The study will focus on how government actions and subsidies affect revenue mix and expenditure mix of Indian Railways and also discuss how revenue collection and expenditure control affect financial performance of Indian Railways. The relevance of the study is that the Indian Railways play an important role in the transportation, trade and economic progression of the nation. The study gives an idea of how to increase revenue sources and expenditure control and financial sustainability by conducting financial management analyses. The results can offer a valuable information to the railway administrators and legislators to plan effective strategies, utilize the available resources in the best way possible and the continued success of the railway industry in the coming years.

## III. LITERATURE REVIEW

Yadav, M. V., & Kundap, M. P. (2025) explored how Indian Railways was a key factor in national development in terms of connectivity and the development of infrastructure. This paper explored the role of budget allocations in the performance and completion of railway projects in India between the years 2005 and 2024. It concluded that an increase in capital investment enhanced the results of projects; however, the disbursement of funds and ineffective financial planning usually lowered the efficiency, and better budgeting and financial management were necessary.

Khan, M. W., & Purohit, H. (2023) studied that among the world's railway networks, Indian Railways is fourth largest, after Russia, China, and the US. Rail traffic and income fell as a result of increased rivalry

from road and air transport. This had an effect on the railway budget, which led to a decline in infrastructure investment, neglectful maintenance, and safety problems. In a compliance audit, the Indian government's auditors found systemic and financial issues with the country's rail network. Spending in 2021–22 was anticipated to reach 2,10,899 crores in revenues, with proposed capital expenditure reaching 2,15,058 crores.

Darteh, M. F. K. (2023) examined the issues of difficulties with reporting revenues and expenditures and how it affected efficient budget management in state institutions. Based on a mixed-methodology, the results revealed weaknesses in system integration and reporting timeliness, whereas documentation and governance performed moderately. The study concluded that good governance structures and combined financial systems were needed to enhance reporting accuracy, accountability, and the effectiveness of budget management.

Asaju, K. (2023) examined the state of infrastructure in Nigeria and how it attempted to address the infrastructure deficit in the country. The analysis based on descriptive qualitative research and secondary data indicated that the majority of the infrastructure in Nigeria was in a deplorable state and that the attempts to create modern infrastructure remained underdeveloped. The study presented poor funding and rampant corruption as significant contributors to the vice and proposed more robust revenue-generation schemes and less corruption as solutions to the issue to enhance infrastructure development and to aid the growth of the national economy.

Akram, H. W., & Sanyal, S. (2021) analyzed that Indian Railways, which was regarded as the lifeline of India, was an important part of connecting India and maintaining logistics and transportation. Nevertheless, it performed poorly financially and operationally in recent years due to inefficiencies in its pricing policies, subsidies, and other negative financial indexes like operating ratios. The article highlighted the necessity of fixing the pricing policies and the subsidies to enhance financial sustainability and avoid further decline.

Saxena, A., & Yadav, A. K. (2022) noted that the Indian Railways had been severely impacted by the countrywide lockdown that was enforced in India on 22 March 2020 to stop the proliferation of COVID-19. Despite the fact that freight services remained active in terms of the transport of essential goods, the total volume of freights and freight revenues decreased during the pandemic. The study estimated that Indian Railways lost a freight volume of about 149.08 million tons and approximately 16,712.68 crore in revenue, utilizing forecasting and regression analysis, along with assessing the resilience of the railway system during a crisis.

Narayanaswami, S., & Saini, L. S. (2022) analyzed that Indian Railways was among the oldest and largest publicly owned transport networks in the world. The majority of the routes that its passengers used were not profitable as the railways carried them out due to social and political obligations. The analysis presented a model that estimated the cost of operation per passenger trip and compared it against the generated revenue. The results indicated that the majority of the services did not break even, which was why the adjustments of operational policies and decision-making processes were undertaken to enhance financial efficiency without harming the benefits of passengers.

Chakraborty, V., & Dutta, S. (2022) considered that the Indian Railways, a reliable means of transport for people and goods since the 1850s, had a substantial impact on the growth of India's infrastructure. In addition to being one of the world's biggest railway systems, it facilitated trade integration and economic expansion. In order to increase efficiency and fulfill modern transportation demands, recent development plans have concentrated on modernization via electrification, network extension, safety enhancements, environmental sustainability, and the introduction of high-speed trains.

Gopalan & Sahu, S. (2020) analyzed that Indian Railways Costing was complicated because sunk and joint costs were high. Conventionally, zonal level calculations were made by using fixed ratios; however, the study proposed a detailed activity-based measure to associate expenses with performance. The approach assisted in determining the fixed and

variable costs, enhanced cost estimation, cross-unit performance analysis, and reformed the accounting system in the railway system.

Garg, C. P., & Kashav, V. (2020) discussed the fact that since independence, Indian Railways had been important in the trade and development in India. The railway network, however, faced difficulties in enhancing freight services, especially in the provision of containerized freight transport. The paper demonstrated that railway connectivity in remote areas and ports should have been increased to enhance economic growth. It also concluded that the proportion of rail in container freight movement had decreased, supporting the significance of sustainable projects, and the electrification of locomotives was found to be a major way of enhancing sustainability.

#### IV. RESEARCH GAP

Though some studies have analyzed various parameters of Indian Railways including budgetary allocation, infrastructural development, operational costing, freight transport, and financial implications of such an event like COVID-19, most of them analyze such aspects independently. The current literature focuses primarily on the problems of decreasing freight share, ineffective pricing policies, lack of infrastructures, and financial reporting and governance difficulties. Nevertheless, not much research has been carried out which concurrently examines the generation of revenue and management of expenses and their overall effect on the overall financial performance of Indian Railways. Most research works also depend on the analysis of sectors without giving a comprehensive financial outlook of the impact of the source of income and spending patterns concerning long term sustainability. Moreover, the recent empirical studies on the efficiency of financial management practices have not been updated to provide a critical assessment of the efficiency of the practices. Thus, a detailed study is needed to analyze the correlation between revenue collection and expenditure control in Indian Railways so as to know their contribution to enhancing financial sustainability, operational productivity and sustainable growth of the railway industry.

#### V. MATERIALS AND METHODS

The study employs a quantitative research strategy to examine the connection between income production and expenditure management at Indian Railways in India. Indian Railways officials involved in administrative and financial tasks make up the target population. We used a purposeful sampling technique to pick 150 people who are knowledgeable about railway financial management. Description and exploratory research are the hallmarks of this work. There were two main methods used to gather information: a closed-ended structured questionnaire for primary data collection and reports, official publications, and relevant literature for secondary data collection. Revenue generation, government policies and subsidies, and expenditure management are the independent variables in this proposed study, while revenue-expenditure structure and government policies and subsidies are the dependent variables. Microsoft Excel and SPSS (version 27) were used for the statistical procedures involving the analysis of the collected data. Mean, standard deviation, correlation, and regression analysis were employed.

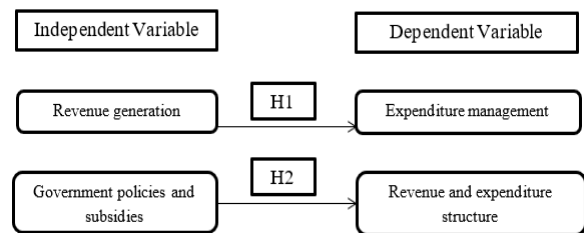


Figure 1: Research Model

Source: Author’s Own Compilation

#### VI. RESULTS AND INTERPRETATIONS

A synopsis of the data and its interpretation can be found in this section. The outcomes have been classified based on the demographic characteristics, objectives, and hypotheses. A table displaying the results and a description of those results have been included in the objectives and hypotheses.

Table 1: Demographic Profile of the Respondents

S. No.	Demographic variable	N	%	
1	Gender	Male	75	50%
		Female	75	50%
2	Age Group	21-30 years	33	22.00%
		31-40 years	24	16.00%
		41-50 years	38	25.30%
		52-60 years	28	18.75%
		Above 60 years	27	18.05%
3	Education Qualification	Diploma	29	19.30%
		Doctrate	30	20.00%
		Graduate	24	16.00%
		Post-Graduate	37	24.70%
		Professional degree	30	20.00%
4	Job Position	Administrative Officer	46	30.70%
		Junior Level Officer	27	18.00%
		Middle Level Officer	37	24.70%
		Senior Level Officer	40	26.70%
5	Years Of Experience	11-20 years	32	21.30%
		21-30 years	33	22.00%
		5-10 years	36	24.00%
		Above 30 years	21	14.00%
		Less than 5 years	28	18.70%

The demographic is well balanced with respect to the categories of the respondents. Gender wise, this is a balanced participation since there were 75 males (50%) and 75 females (50%). In terms of the age bracket, most respondents are in the 41-50 years old category (25.30%), then 21-30 years old (22.00%), 52-60 years old (18.75%), Above 60 years old (18.05%), and 31-40 years old (16.00%), indicating that the majority of the respondents are in their mid-career age group. In regards to educational status, the greatest percentage of the respondents are post-Graduates (24.70%), Doctorate and Professional Degree holders (20.00% each), Diploma holders (19.30%), and graduates (16.00%), which showed that the respondents are highly qualified. Regarding job position, the Administrative Officers (30.70%), Senior Level Officers (26.70%), Middle Level Officers (24.70%), and Junior Level Officers (18.00) are the largest, which includes most of the respondents who are in higher and managerial positions. In terms of years of work experience, the

biggest percentage of the respondents is 5-10 year's experience (24.00%), 21-30 year's experience (22.00%), 11- 20 year's experience (21.30%), Less than 5 years' experience (18.70%), and Above 30 year's experience (14.00%), which means that the sample is composed of respondents with different work experience levels. On the whole, the population structure indicates a well-balanced and experienced sample population of respondents that can be used to analyze the financial performance and management practices of Indian Railways.

Obj 1. To evaluate the relationship between revenue generation and expenditure management in determining the financial performance of Indian Railways.

H1: There is a significant relationship between revenue generation, expenditure management, and the financial performance of Indian Railways.

Table 2: Correlation Analysis

Hypothesis	Factor			Correlation		Hypothesis Result
		Mean	SD	Pearson Correlation ( <i>r</i> )	Sig value	
H1	Revenue Generation	10.9800	2.52097	.178**	0.029	Supported
	Expenditure Management	9.6933	2.97404			

Correlation is significant at the 0.01 level (2-tailed).

The financial performance of Indian Railways was examined through a correlation analysis to ascertain the relationship between revenue generation and expenditure management. Revenue generation has an average value of 10.9800 with a standard deviation of 2.52097, while expenditure management has an average value of 9.6933 with a standard deviation of 2.97404, according to these findings. With a Pearson correlation coefficient (*r*) of 0.178, we can see that controlling spending and increasing revenue go hand in hand. There is a statistically significant relationship between the variables, as the significance value (0.029) is lower than the 0.1 level of

significance. It follows that the Indian Railways' expenditure management is positively correlated with their revenue generation, and Hypothesis H1 is accepted.

Obj 2. To study the impact of government policies and subsidies on the revenue and expenditure structure of Indian Railways.

H2: Government policies and subsidies have a significant impact on the revenue and expenditure structure of Indian Railways.

Table 3: Regression Analysis

Hypothesis	Regression Weights	Beta Coefficient	R2	F	t-value	p-value	Hypothesis Result
H2	Government Policies and Subsidies > Revenue and Expenditure Structure	0.482	.232	44.701	6.839	0.000	Supported

The Indian Railways' income and expenditure structure was to be examined through regression analysis in order to determine the impact of subsidies and government policies. The results show that government policies and subsidies positively affect the revenue and expenditure structure, as indicated by the beta value of 0.482. Government policies and subsidies explained about 23.2% of the variation in the revenue and expenditure structure ( $R^2 = 0.232$ ). Further evidence that the regression model is statistically significant is provided by the F-value of 44.701. A t-value of 6.839 and a p-value of 0.000, both of which are lower than the 0.05 level of significance, demonstrate a statistically significant relationship between the two variables. So, we can accept Hypothesis H2 and say that government policies and subsidies do have a significant positive impact on the revenue and spending structure of Indian Railways.

## VII. FINDINGS AND DISCUSSION

The present study's findings indicate a strong relationship between the financial system of Indian Railways and the effects of government policies and subsidies, as well as between revenue collection and expenditure control. That is, the greater the sources of revenue, the greater the financial management and the operational performance as per the correlation analysis, which indicates positive and statistically significant relationship between revenue generation and expenditure management. The success of the revenue management and financial planning determines the long-term sustainability of such a large public transportation system as Indian Railways, and previous researchers agree with this opinion (Akram et al., 2021; Khan and Purohit, 2023). The analysis also proves that the government policy and subsidies also play a significant role in

determining the revenue and expenditure structure in the railway industry as evidenced by the fact that the regression value is high. The same can be said of Yadav and Kundap (2025), who have observed that the budget allocation by government and investment policies play a significant role in the performance and success of the railway projects. Furthermore, Narayanaswami and Saini (2022) observed that most passenger services are run at a loss because of social requirements, so the government has to subsidize transport services to ensure affordability. Gopalan et al. (2020) also emphasized the significance of cost management and financial transparency as it has recommended that financial efficiency can be improved with better costing systems. In addition, modernization and sustainability efforts like electrification and enhanced freight services are deemed to be significant in terms of enhancing finances and operational results in railway (Garg & Kashav, 2020; Chakraborty and Dutta, 2022). All in all, the results bode well with the current literature by illustrating that greater revenue streams, good expenditure management and government policies that enable Indian Railways are crucial in enhancing its financial stability.

### VIII. CONCLUSION

It has examined the effects of subsidies and government policies on the bottom line of Indian Railways, its revenue collection, and expenses control. The results indicate that there is a positive (statistically significant) correlation between revenue generation and expenditure management. This implies that effective sources of revenue like freight services, passenger income and non-fare revenue can play a role in enhancing financial control and operational efficiency. The findings also reveal that the subsidies and government policies are significant influencing factors in the way Indian Railways earn and use the money. In conclusion therefore, the railway system needs to be supported by financial aid and policy support to be sustainable. The research further reveals that the optimal solution towards enhancing the overall performance of the Indian Railways is through expenditure control, revenue growth and financial management. In order to enhance operational strength and financial stability of the rail system, the rail system should be modernized,

the infrastructure constructed and administrative behavior enhanced. Overall, the paper has found that the financial sustainability and efficiency of operations of Indian Railways in the long-term and whether it is capable of performing its role as an essential transportation system in India is based on revenue generation mechanisms, spending management, and government policies that are helpful.

### Implications, Limitations, and Recommendations for Further Studies

The study highlights the major limitations, implications, and the areas that require additional research. The findings indicate that Indian Railways can enhance its financial sustainability through revenue generating strategies and expenditure control. Revenue sources should be diversified in order to increase financial stability and development of infrastructure. This may be facilitated by the freight services, non fare income and commercial utilization of the railway assets. Besides, cost control and favorable state policies play an important role. However, there are some caveats of the study. The first is that it is based on the data of questionnaires, which may result in the bias of responses, and the second is that the sample is limited (150 respondents) and selected by purposive sampling. The study did not involve innovation in technology, operational efficiency and competition in the market as they were regarded as insignificant variables. Digitalization, logistics management, modernization of infrastructure, the partnership between the government and the business, and sustainability efforts are other variables that could be explored in future research using a larger and more varied sample to establish their impact on the operational and financial performance of Indian Railways.

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