



DIGITAL INNOVATION AND ESG INTEGRATION IN MUMBAI'S PUBLIC TRANSPORT: A STUDY OF THE CHALO APP

Dr. Remya George

Assistant Professor

Bunts Sangha's S.M Shetty College of Science Commerce & Management Studies
Powai, Mumbai, Maharashtra India

Abstract

In today's world ESG (Environmental, Social, and Governance) goals are influencing stakeholders and business outcomes. The Chalo App, used for Mumbai's BEST buses and other public transport systems across India, ties to ESG goals in various ways by promoting sustainable mobility, improving accessibility, use of technology for governance and technology. Digital passes and QR-based tickets, reduce paper wastage, supporting resource conservation. Transparency in transactions with digital payments have reduced revenue leakage and corruption. The research is conducted among bus travelers across Mumbai Region to know more about the environmental impact of E-ticketing on public transport operations. The study also covers the awareness and usage of Chalo App among the regular Bus travelers.

Keywords

ESG (Environmental, Social, and Governance), digital, technology.

INTRODUCTION

The deliberate development and uptake of new or enhanced digital technology to promote substantial modifications in goods, services, business models, and practices is known as digital innovation. To raise efficiency, develop new value, enhance user experiences, and achieve a competitive edge, it takes use of technologies like artificial intelligence (AI), cloud computing, and the Internet of Things.

Advantages of Innovation in Digital Technology

- Enhanced Efficiency: Process optimization and workflow automation.
- Better Customer Experience: Customizing communications and providing superior services.
- New Business Models: Developing completely original strategies for producing income and providing value.
- Market Adaptability: Assisting businesses in remaining flexible and meeting changing consumer needs.
- Enhanced Growth: Finding new opportunities and learning about the market to propel long-term growth.

A company's influence on the environment is the emphasis of environmental factors; its interactions with employees, communities, and society are the focus of social factors; and its leadership, internal controls, and shareholder rights are the focus of governance. ESG principles, also referred to as responsible or sustainable investing, are applied in the investment process to evaluate companies for long-term value and risk and to match portfolios with individual values.

Environmental (E): The focus is on how a business affects the environment and manages environmental hazards; examples include energy use, carbon emissions, waste management, pollution, and the utilization of renewable resources.

Social (S): Relationships between a business and its workers, clients, communities, and society at large; examples include data protection, fair labor practices, community investment, and employee diversity and inclusion.

Governance (G): Leadership, executive compensation, audits, internal controls, and shareholder rights; examples include accountability, openness, moral leadership, and diversity on the board.

The Significance of ESG

- Responsibly Investing: Investors look for businesses that share their values, such as social justice or sustainability, using ESG criteria.
- Risk management: ESG guidelines assist in identifying businesses that have strong management procedures, lowering the possibility of social blunders or environmental harm.
- Long-Term Value: Businesses with robust ESG policies may be better positioned for resilience and long-term growth.
- Greater Transparency: ESG reporting encourages accountability and deters "greenwashing" by informing stakeholders about a company's performance and impact.

Chalo is the first bus transportation technology startup in India, offering contactless payment options and live bus tracking services to make regular bus travel safer and more dependable. The legal name of Chalo is Chalo Mobility Private limited. In collaboration with the Brihanmumbai Electric Supply and Transport (BEST) project, it is introduced in Mumbai. The Chalo app is a smartphone application designed to improve Mumbai bus commuting. It offers functions like digital ticketing, real-time bus tracking, and timetable and route information. Additionally, users can buy mobile bus passes and tickets, as well as receive a Chalo Card (BEST Chalo Card) for convenient tap-to-pay.

Important Features

1. Real-time bus monitoring- It displays the bus's current location and anticipated arrival times. aids travelers in making travel plans and cutting down on wait times.
2. Mobile Passes & Ticketing- Using the app, purchase day passes, monthly passes, or single journey tickets scanning a QR code to verify it.

3. Payment Methods & Digital Wallets- It accepts digital wallets, debit/credit cards, and UPI.
4. QR Card Offline Passes- QR passes on paper or smart cards that may be reloaded with an app.
5. Route Information -Provides stop information, bus numbers, and routes.

REVIEW OF LITERATURE

Mrs. Sampada Kulkarni et al. (2023), have done study on e-ticketing for public buses. The study states the acceptance and the benefits of e-ticketing. This method have given new direction for the policy makers. The introduction of digital ticketing pattern have played an important role in revolution of public transport system and user-friendly framework.

K Chriselda Kiruppa and S V Praveen (2024) have done study on satisfaction on Chalo Application. The study has done on various factors like the usage, frequency, accuracy of timings, network reliable and preferable factors. The study focused more to identify the satisfaction of the users. The study highlights the need for continuous development of the applications, include more services and make it more reached out the large number of people. As per increase in demand and improvement in digital knowledge among people, usage of such digital services have been increasing.

Prof. Bharat Kisan Shirgaonkar (2024) have done study on innovative step adopted by BEST buses. The use of advanced technology and digitalization have created new interest among the users. The new innovative method adopted have increased efficiency and productivity of the particular firm. The study also focuses about the importance of such new initiatives and innovation in commerce and service industry as the part of digital revolution.

OBJECTIVES OF STUDY

1. To assess the role of Chalo App in driving digital innovation in Mumbai's public transport system.
2. To analyze how the Chalo App contributes to Environmental, Social and Governance (ESG) goals.
3. To evaluate the environmental impact of digital ticketing through the Chalo App in reducing paper usage and promoting sustainable practices.

RESEARCH METHODOLOGY

The research compromise on data collected through data collected through primary sources and secondary data from various articles, research papers etc. The primary data is collected from 120 people across Mumbai city.

ANALYSIS AND RESULTS

1. Age of respondents

Age Group	Total	Percentage
Below 18 years	14	12
18 to 25 years	105	88
30 to 50 years	01	0
Total	120	100

Interpretation:

The respondents below the age 18 years are 12%, between age 18 to 25 years are 88%, between 30 to 50 years are Nil.

2. Gender of respondents

Gender wise	Total	Percentage
Male	50	42
Female	70	58
Total	120	100

Interpretation:

The respondent's male is 42% and female are 58%

3. Qualification of Respondents

Qualification	Total	Percentage
SSC	05	4
HSC	09	7
Pursuing Graduation	105	88
Post-Graduation	01	1
Total	120	100

Interpretation:

The qualification of respondents 4% of respondents have SSC, 7% have HSC, 88% are pursuing graduation, 1% are post graduate.

4. Occupation of Respondents

Occupation	Total	Percentage
Student	118	98
Employed	02	02
Total	120	100

Interpretation:

The occupation of respondents 98% are students and 2% are employed.

5. Awareness about Chalo App

Awareness	Total	Percentage
Yes	114	95
No	06	5

Total	120	100
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Interpretation:

95% respondents are aware about Chalo application and 5% are not aware.

6. Usage about Chalo App

Usage	Total	Percentage
Yes	94	78
No	26	22
Total	120	100

Interpretation:

The respondents using Chalo application are 78% while 22% are not using Chalo application.

6. Frequency of usage Chalo App

Usage	Total	Percentage
Daily	58	48
Occasionally	12	10
2-3 times in a week	18	15
Rarely	32	27
Total	120	100

Interpretation:

The respondent's frequency of using Chalo application on daily basis are 48%, occasionally 10%, around two to three times a week are 15% and rarely are 27%.

7. Chalo app promotes cashless and eco-friendly travel

Opinion	Total	Percentage
Strongly agree	32	27
Agree	55	46
Neutral	31	26
Do not agree	02	1
Total	120	100

Interpretation:

The respondent's response to Chalo application promotes cash less and eco-friendly those strongly agree are 27%, agree are 46%, neutral is 26% and do not agree is 1%.

8. Environmental benefits

Opinion	Total	Percentage
Very easy to use	32	27
Paper less travel	30	25
Less time consuming	35	29
Reducing queuing	23	19
Total	120	100

Interpretation:

The respondents' response towards environmental benefits about chalo application very easy to use are 27%, paper less travel are 25%, less time consuming are 29%, and reduce queue are 19%.

9. Major reason for you to use Chalo Apps

Opinion	Total	Percentage
accessibility	68	57
digital promotion	10	08
financial inclusion	13	11
user-friendliness	29	24
Total	120	100

Interpretation:

The respondents on major reason for using Chalo application accessibility are 57%, digital promotion are 8%, financial inclusion are 11%, user friendly are 24%.

10. E-ticketing significantly reduces the environmental impact of public transport operations in Mumbai.

Opinion	Total	Percentage
Yes	89	74
No	31	26
Total	120	100

Interpretation:

The respondents' opinion on E-ticketing significantly reduces the environmental impact of public transport operations in Mumbai 74% agree and 26% disagree.

FINDINGS

Majority of the respondents are aware about the Chalo Application.

Majority of the respondents are using Chalo Application.

The respondents using Chalo Application are using it more frequently.

Majority of the respondents agree that Chalo Application promotes cashless and eco-friendly travel.

The respondents have the opinion that the Chalo Application is very easy to use, it offers paper less travel and it less time consuming and reduce queue.

The respondents find major reason for using Chalo application is because of accessibility, some find the reason as it promotes digitalization.

Majority respondents agree that the E-ticketing significantly reduces the environmental impact of public transport operations.

SUGGESTIONS

As per the present study done in Mumbai Region the respondents are aware about such digital application and prefer to use it. The respondents are aware about environmental benefits, so government and other concern authorities should take initiative in developing such new innovative user-friendly applications which supports environment reduces pollution, waste emission and reduces environmental hazards. More digital encouragement needs to be done as it improves governance and also brings down corruption. NMTC the buses operation in Navi Mumbai are neighboring BEST should take such initiatives encouraging ESG goals promotion.

LIMITATIONS OF THE STUDY AND SCOPE FOR FURTHER RESEARCH

The present study is done in Mumbai region and with respondents 120. Further research can be done covering other areas, more respondents can be covered. Other digital applications available and which encourages environmental benefits can be considered in further research.

CONCLUSION

With the increase in use of smart phone and availability of fast internet the number of people aware and using various application have increased. Financial inclusion among the people have made more people using digital mode in various financial transactions. Digital methods available like Chalo Applications are adopted very fast among the bus travelers as its easy, user friendly, helps in cash less transactions. The regular bus travelers don't have to carry cash and coins of small denomination as the money gets directly transferred from the account, and ticket is digitally seen in mobile after the completion of the transactions so no printed papers to be provided. Chalo Application has been exclusively playing a vital role in digital revolution which is encouraging ESG integration. Public Transport in Mumbai BEST has been supporting ESG integration by initiating and encouraging use of Chalo Application encouraging ESG implantation.

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