



# A study of Sustainable Green Practices by Brihanmumbai Electricity Supply & Transport Undertaking

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## **Abstract:**

Nowadays, due to the increasing environmental pollution in India, it has become necessary to run a business with a sustainable strategy in a society. Sustainable green business practices focus to running a business in an environment friendly, economic and social manner. Sustainability in Green Business brings a stronger public image which reduces wastage and becomes cost efficient which leads to maximum utilization of the resources. One such initiative by the Brihanmumbai Electricity Supply and Transport Undertaking (B.E.S.T), Mumbai has taken, by launching the electric buses and double decker electric buses on the streets of Mumbai with the help of Modern Technology they started a small step towards a sustainable green practice in Mumbai. These undertakings made by B.E.S.T have taken steady measures to control pollution levels with Modern Technology. They introduced CNG buses i.e., buses powered by Compressed Natural Gas. As well as providing bus service in Mumbai and Thane region, the Mumbai BEST operates a ferry service in the northern outskirts of the city and provides electricity for green business vision. The undertaking provided by Brihanmumbai Electricity Supply and Transport (B.E.S.T) has a well-equipped training center for traffic staff and a designated program to re-educate on relevant topics like fuel conservation, safety measures, behavior towards the public, etc. All these initiatives help the community build a promising and better lifestyle.

## **Purpose:**

The main purpose of the research is to study the sustainable green practices initiated by Brihanmumbai Electricity Supply and Transport (B.E.S.T) to keep eco-friendly environment.

## **Methodology:**

The research is supported by the primary data base with data sampling method with required data collected from Mumbai as well as Thane region of all ages to know current behavior of Brihanmumbai Electricity Supply and Transport (B.E.S.T) towards green sustainability.

## **Finding:**

The research found out that an autonomous body, the Brihanmumbai Electricity Supply & Transport Undertaking (B.E.S.T), Mumbai was a government owned organization currently run by the Mumbai City's Municipality named as Brihanmumbai Municipal Cooperation, working towards the progress of the city by offering the most affordable travelling service in the capital city of Maharashtra.

**Contribution:**

Though it is difficult to build a relationship between the environment and development, the outcomes are satisfactory. The basic purpose of the research is to study the sustainable green practice which is beneficial to everyone to understand the necessity to green business practice an initiative taken by B.E.S.T in Mumbai for the betterment of the Maharashtra citizen.

**Keywords:** Green Business, Modern Technology, Brihanmumbai Electricity Supply and Transport (B.E.S.T), Sustainability.

**INTRODUCTION:**

At present, humans have gone through phenomenal developments that has caused extreme pressure on our planet and its natural resources. The notion of green business emerged at the end of the 20th century due to ever-increasing public concern about the sustainability of economic development. In the same way, Sustainable development make the world a promising place without destroying the opportunities for the next generation. Sustainability works on three main objectives economic prosperity, social fairness, and environment. Numerous businesses have started to inculcate sustainable green practices in their products/services. Likewise, an initiation is undertaken by Brihanmumbai Electric Supply and Transport undertaking (B.E.S.&T Undertaking) toward sustainable green practices.

The Brihanmumbai Electricity Supply and Transport Undertaking (B.E.S.&T Undertaking) is a civic transport and electricity provider public body based in Mumbai, Maharashtra, India. It came into existence when Bombay Electric Supply & Tramways Company Limited (B.E.S.&T. Company) was taken over by the Bombay Municipal Corporation in the year 1947. The loss-making tramway network was eventually terminated in the year 1964. The company was renamed Brihanmumbai Electric Supply and Transport Undertaking (B.E.S.& T Undertaking) in the year 1995, It now operates as an autonomous body under the Municipal Corporation. The Brihanmumbai Electric Supply & Transport Undertaking of the Brihanmumbai Mahanagarपालिका provides Bus Transport within Brihan-Mumbai limits and also in Navi Mumbai, Thane. On average, 2.9 million passengers are traveling daily through 63,700 trips operated on 505 bus routes with the help of 3800 eco-friendly buses. These buses cover approximately 6.42 Lakh kilometers per day. They have introduced many electronic buses and CNG buses i.e., buses powered by compressed natural gas. Lately, they have also introduced an electric luxury bus service aimed primarily at office-goers. The bookings of these buses can be easily done on BEST's Chalo app. The BEST Chalo bus service is air-conditioned, zero-emission, and electric. There are two ways to use the BEST Chalo bus service, the Express, and the All-Day routine, one of the best parts is that the fares are fixed for both routes. There is also the BEST Chalo Card, a tap-to-pay bus card that stores a prepaid wallet. This service is expected to ease the traffic on busy paths and go a long way in shifting people to public transport instead of choosing private vehicles.

**Literature review:**

1. **Sebastian K Antony**<sup>1</sup> published research about the efficiency of the Brihanmumbai electricity supply and transport undertaking (B.E.S.&T undertaking) in "Skill Development: The Key to Economic Prosperity" (2014). India is a developing nation. Development can be obtained rapidly if the Skillful utilization of resources gets allocated and organized in a proper manner, which will lead to progress in the future. Developing a relevant workforce will lead to not only prosperity for the workforce, but also substantial national gains in the form of saving scarce resources. The researcher proposed that B.E.S.T as an organization needed an urgently acquire the necessary skills to enhance its efficiency in resource utilization. A public sector entity like B.E.S.T has the potential to survive with public funding. Accounting to current findings B.E.S.T undertaking has taken significant initiatives such as introducing a training center for traffic staff and a designated program to re-educate on relevant topics like fuel conservation, safety measures, behavior towards the public, etc.
2. **Mrs. Shefali rai**<sup>1</sup> and **Ms. Sayali Jambhulkar**<sup>2</sup> researched on the topic: An Analytical Study of Green Business Practices in India with Specific References to Selected Indian Companies it was published in the international journal of management and social science (2018). Their research paper talks about how practicing sustainable green business have a less negative impact on the global environment, community, and economy. They took a few reputed companies in India to showcase the current scenario and analyzed how sustainable green practices impacted their performance. They took companies like TCS, ONGC, ITC, WIPRO, and MRF to analyses green business practices. Multiple measures were taken by these companies for the conservation of energy by utilizing alternative sources of energy, carbon management, sustainable

development, water reduction, and reuse, and steps taken for noise pollution control. In addition, they also proposed that along with the private-sector government, initiatives are essential, and significant actions should be made by them for following these practices for the well-being of the next generation.

### Objective:

- To understand initiatives taken by B.E.S.T buses for the practice of sustainable green business.
- To know the priorities of the public while traveling.
- To examine the frequency of locals using B.E.S.T buses.
- To know the problems faced by common passengers while traveling in B.E.S.T buses.

### Limitation:

While studying the research paper, we encountered these issues mentioned below

- The research is being strictly restricted to Mumbai limits, Thane region only.
- The data has been collected only from the youth of Mumbai up till 30 years of age.

### Research Methodology:

- 1.Data Source:** The data for this study has been collected from primary sources as it is illustrative. It is being collected through a questionnaire most of the respondents were students from different colleges in Mumbai and the Thane region.
- 2. Tools and Techniques applied:** For the representation of the data in the research paper statistical data pattern is used and a few images are used to show the graph which conveys the percentages and frequency to show the preciseness.
- 3. Sampling Method:** To study the analysis with practical information, a simple random data sampling was collected. In order to collect the data samples, the link to the google form was collected.
- 4.Sampling Size:** The data was collected from 179 respondents from Mumbai and the thane region.
- 5.Scope of The Study:** The scope of the study is focused on collecting primary data related to sustainability practices done by B.E.S.&T undertaking
- 6.Data Interpretation:** The research is endorsed by the primary database. The required Data is collected mostly from Mumbai and Thane regions.

(Table 1: General questions to the respondents – Primary Data)

PARAMETER	CATEGORY	FREQUENCY	PERCENTAGE
<i>Age Category</i>	Below 18	26	14.5%
	19-21 years of age	152	84.9%
	22-30 years of age	1	0.6%
	<b>Total Respondents</b>	<b>179</b>	<b>100%</b>
<i>Gender</i>	Male	80	44.7%
	Female	99	55.3%
	<b>Total Respondents</b>	<b>179</b>	<b>100%</b>
<i>Occupation</i>	Student	177	98.9%
	Professional Job	1	0.6%
	Service Job	1	0.5%
	<b>Total Respondents</b>	<b>179</b>	<b>100%</b>

(Sources: Primary Data)

The aggregate number of responses received from the survey is **179**, out of which *14.5%* of respondents belong to the age group of below 18 years old, the maximum number of responses received were from the age group of 18-21 years old i.e., *84.9%*, and only *0.6%* response was received – from age group 22-30years old.

The second section of table no.1 indicates the gender proportion of the respondents initiated in the survey, the maximum number of respondents 55.3% were female and 44.7% were male

The third section of the table no.1 talks about the occupation of the respondents initiated in the survey. 98.9% are students from universities, 0.6% are from professional jobs, 0.5% are from service sector.

(Table 2: Questionnaires related to sustainability and transport preference)

PARAMETER	CATEGORY	FREQUENCY	PERCENTAGE
<i>Which of the following statement about sustainability below resonates with you?</i>	sustainability looks the same for every business	43	24%
	Sustainability is solely about the environment	37	20.70%
	Only technology, sustainability cannot solve or problem	15	8.40%
	Sustainability means going green	51	28.50%
	None of the above	33	18.40%
	<b>Total Respondents</b>	<b>179</b>	<b>100%</b>
<i>Which mode of transportation do you utilize?</i>	Public Transport	139	77.70%
	Private Transport	40	22.30%
	<b>Total Respondents</b>	<b>179</b>	<b>100%</b>

(Sources: Primary Data)

In the table 2, the first section talks about which statements about sustainability resonate more with the respondents 24% of respondents articulate sustainability looks the same for every business. 20.7% chose sustainability solely about the environment.

8.4% chose only technology sustainability cannot solve our problem. 28.5% chose sustainability means going green. 18.4% did not agree with any of the statements.

In the section of table 2 preference of transportation was asked; 77.7% of respondents prefer public transport, 22.3% of respondents prefer private transport.

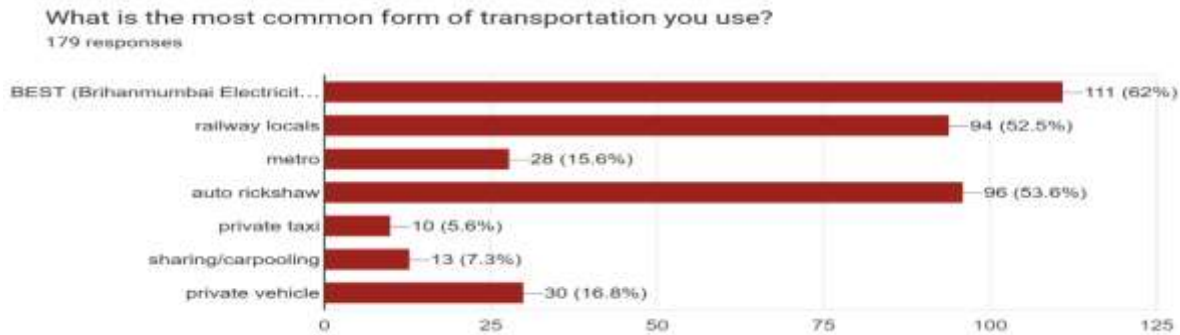
(Table 3: Questionnaires related to B.E.S &T undertaking)

PARAMETER	CATEGORY	FREQUENCY	PERCENTAGE
<i>have you journeyed using B.E.S.T services?</i>	Yes	155	86.6%
	No	24	13.4%
	<b>TOTAL RESPONDENTS</b>	<b>179</b>	<b>100%</b>
<i>How frequently do you travel in B.E.S.T electric buses</i>	Regularly	73	40.7%
	Often	42	23.5%
	Sometime	25	14%
	Rarely	39	21.8%
	<b>TOTAL RESPONDENTS</b>	<b>179</b>	<b>100%</b>
<i>In these years, do you see any improvement in BEST bus services (e.g.: an increase in frequency of</i>	Yes	133	74.3%
	No	46	25.7%

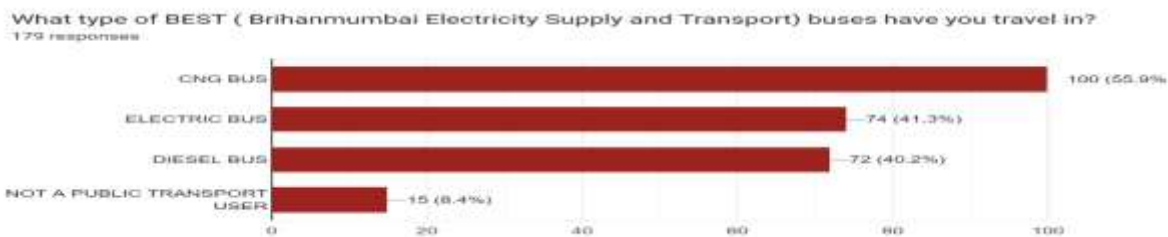
<i>the buses, quality of service provided by them)</i>	<b>TOTAL RESPONDENTS</b>	<b>179</b>	<b>100%</b>
<i>what are the possible reasons for not using or avoiding BEST buses</i>	Crowdie	121	67.6%
	Limited buses	35	19.6%
	No service in your area	9	5%
	Risky travelling	8	4.5%
	I don't travel much	4	2.1%
	Less frequency	1	0.6%
	Traffic	1	0.6%
	<b>TOTAL RESPONDENTS</b>	<b>179</b>	<b>100%</b>
<i>Do you think BEST (Brihanmumbai Electricity Supply and Transport) buses are cost efficient than other available transport services?</i>	Yes	158	88.3%
	No	21	11.7%
	<b>TOTAL RESPONDENTS</b>	<b>179</b>	<b>100%</b>
<i>Brihanmumbai Electricity Supply and Transport (BEST) came up with initiative of BEST APPLICATION with live tracking of the buses and digital bookings named as CHALO APP are you aware about it?</i>	Yes	157	87.7%
	No	22	12.3%
	<b>TOTAL RESPONDENTS</b>	<b>179</b>	<b>100%</b>

(Sources: Primary Data)

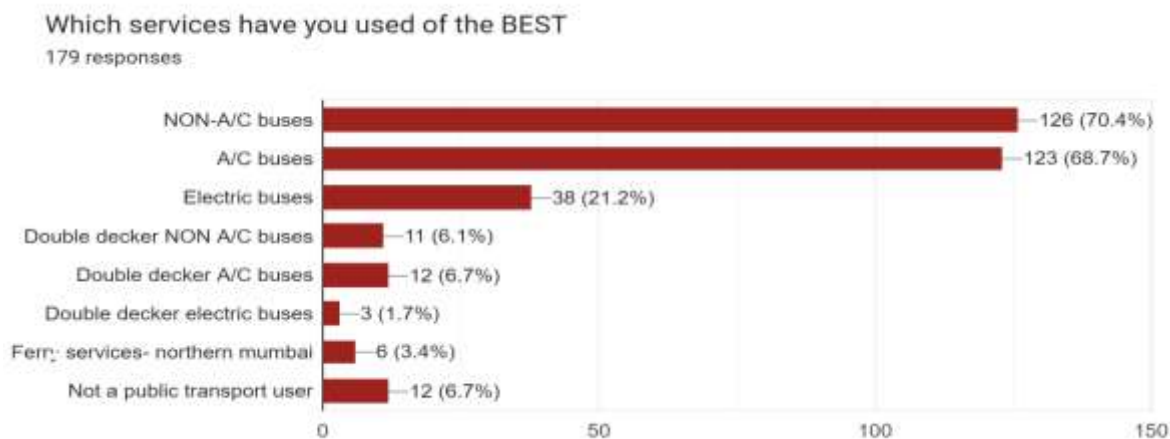
Table 3, indicates the questionnaire related to B.E.ST according to the data 86.6% of respondents have travelled using B.E.S.T services, and 13.4% of respondents have not journeyed using B.E.S.T services. 40.7% of respondents travel regularly, 23.5% travels often, 14% of respondents travels sometimes and 21.8% travel rarely in B.E.S.T electric buses. 74.3% of respondents saw improvement in B.E.S.T services while 25.7% of respondents didn't. Problems faced by respondents while traveling were crowded (chosen by 67.6% of respondents), limited buses (chosen by 19.6% of respondents), no service in your area (chosen by 5% of respondents), I don't travel much (chosen by 4.5% of respondents), less frequency (chosen by 0.6% of respondents), traffic (chosen by 0.6% of respondents). 88.3% of respondents agreed that B.E.S.T services cost efficient than other available transport services, and 11.7% of respondents did not agree. 87.7% of respondents are aware of the Chalo application while 12.3% of respondents are not aware of this innovative application initiated by B.E.S.T.

*(Sources: Primary Data)**(Fig:1.1)*

The above figure 1.1, indicates that B.E.S.T is used by most of 111 people out of 179 respondents, and railway locals are used by 94 people out of 179 respondents, only 30 respondents use private vehicles.

*(Sources: Primary Data)**(Fig:1.2)*

The above figure 1.2, indicates the types of buses used by respondents, CNC buses are the most used bus at 55.9%, and electric buses are the second most travelled bus by the respondents. 40.2% of respondents travel on diesel bus, remaining do not use public transport while traveling.

*(Sources: Primary Data)**(Fig:1.3)*

The above Figure 1.3, shows the graph of respondents using what type of services are provided by B.E.S.T. Non-A/c buses are the most used service of 70.4%. 68.9% of respondents chose an a/c bus service. 21.2% of respondents have used electric buses.

**Findings:**

1. The study states through primary data that, most of the respondents are using public transportation for traveling as it is easily to access for the public.
2. The Findings have stated that people are aware of the CHALO app as this application is useful for the live tracking of the buses and digital booking.
3. The study found out B.E.S.T undertaking are coming up with innovative ideas in their business for sustainable development.

4. It has been observed that there is a misconception about sustainability from the survey most of the respondents selected sustainability means going green which is a misinterpretation, going green indicates just using environment-friendly products/services, and sustainability indicates using products/services aiming towards environment-friendly and socially responsible manner considering the future generations.
5. It has been also observed that B.E.S.T provides services that are cost-efficient compared to other transportation services to reduce the usage of private transport and aiding public to mobilize at less price.

### Conclusion:

Innovation is essential to bring novelty to existing organizations. In the same way, sustainable green practice is one kind of innovative method initiated by Brihanmumbai electricity supply & transport (B.E.S.T) buses. They provide services 18 × 7 by using CNG buses, Diesel buses with fewer emissions, and electric buses, a/c buses. Hence the people have started preferring more public transport. The new application called CHALO has been an advantage for passengers to track buses, it helps to accept digital payment and also provides Chalo tap to pay cards. However, this organization still needs improvement to some extent though B.E.S.T buses are cheap means of transport helping to connect places in Mumbai and its outskirts people are still facing problems due to a lack of proper planning and organization. The main problem found from the data is that B.E.S.T buses are crowded and if the frequency is less, it can be organized if proper time management is done by rescheduling of trip, choosing better routes and to increase the frequency of the buses in this way the over crowdedness can also be controlled and public can enjoy their ride.

### Reference:

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