

# **Study The Approach Of Environmentally Sustainable Transport Strategy**

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## **Abstract**

This article will focus on one of the three pillars that a sustainable transportation system must be built on: the environment. At first, cause-and-effect diagrams are used to show how the different parts of transportation and traffic networks work together. There are some general problems with traffic flow, and the reasons for these problems are grouped. The chart shows how actions on both the demand and supply sides can be taken to make transportation systems greener. With the help of these rules and procedures, emissions can be cut and efficiency can be raised. Some of the problems that these solutions are meant to fix in cities are traffic jams, accidents, damage to the environment, and wasted energy. This essay says that travel demand and land use management are two of the most important things to think about when making green transportation options. It compares strategies that are based on supply to those that are based on demand and gives criteria for making that comparison. This helps decision-makers weigh the pros and cons of each policy option and choose the best one.

**Keywords :** Environmentally , Sustainable Transport , policy option.

## **1. Introduction**

A wide range of environmentally friendly ways to get around is one of the most important parts of a city that is both sustainable and easy to live in. Urban transportation networks that are good

for the environment are a key part of making a city greener. At the moment, transportation systems around the world are running at a rate that can't keep up.

### **1.1 Sustainability**

The term "sustainability" comes from the definition of "sustainable development" by the Brundtland Commission, which was made in 1983. Sustainable development is defined as "development that meets the needs of the present without making it hard for future generations to meet their own needs." Sustainable transportation meets the first criterion because it looks to the long term or to the future. Even though there isn't a clear definition of a "sustainable city" or "sustainable transportation," both ideas are becoming more popular.

### **1.2 The role of transportation in modern cities**

Modern cities need to be able to move around easily, which is why family activities in industrialised cities around the world revolve around the personal automobile. Before developing countries can be called "developed," they still have a long way to go. The negative effects of traffic have a big effect on the quality of life of people who live in cities. See [Citation needed] for a list of sources. The quality of the natural environments in most of the world's most populated cities has gone down, especially in terms of air pollution and noise pollution. Important cities around the world are quickly becoming unlivable because their transportation systems are growing too fast without any rules. New Delhi, India, is a great example of how city life is getting worse and worse, which is a scary trend. The fact that traffic is getting worse in some of the largest U.S. cities is not good news for people who want to make cities better places to live in the long run.

### **1.3 Current transportation systems are unsustainable**

The way transportation is going now can't continue. The amount of greenhouse gases in the air is growing most quickly because of what people do. Even though there are stricter rules on car emissions, the amount of ozone and particulate matter at ground level has continued to rise in urban areas. This is because more cars are being made, their average size is getting bigger, and they drive more miles each year. It looks like the lack of sustainability is caused by the competitive advantage of transportation methods that use a lot of energy, a growing population,

and low-density urban settlement patterns. The path to transportation methods that are bad for the environment starts with the values and habits of today. Some of these are the desire to live in a comfortable suburb, to show off one's wealth by owning a sports car or a recreational vehicle, and the need or desire to travel on one's own terms. But the cost of transportation right now is by far the biggest thing that makes it hard to think about sustainable growth. For the sake of economic efficiency, people don't pay enough attention to the full costs of transportation, which makes them too dependent on it.

#### **1.4 Sustainable Transportation**

Sustainable ways to get around are those that meet the long-term needs of their users, fit with the way of life they want, are cheap and good for the environment, and use energy sources that will never run out.

### **2. Related work**

**Shadimetov, et al. (2022)** In the middle of the 1990s, OECD countries realised that the transportation trends at the time were not sustainable and that the policies in place were not likely to move society toward more environmentally friendly transportation systems. It was time for a new transportation policy that reflected the wide range of goals of sustainable development more accurately. To work toward this goal, a programme called "Environmentally Sustainable Transport" (EST) was started. The research team behind this initiative wanted to give the term "environmentally sustainable transport" (EST) more meaning by using measurable criteria that are important for the natural world. Backcasting is a way to get from where you are now to where you want to be in the future. We did this with a method called "backcasting." This article gives an overview of the project's results, which were found through local, regional, national, and international case studies in which 12 OECD member countries took part. The experiment showed that about 60% of the work that needs to be done to meet the EST standards can be attributed to demand-side management and a shift toward more environmentally friendly ways to get around. EST needs a lot of different tools to work. Some of these are spreading knowledge, promoting understanding, changing people's views, and spreading new information. All of these things are put together into coherent sets of tools that are used in a methodical way. Other types of instruments include rules and regulations, economic measures, changes in the way

government works, and educational efforts. Parakram et al.(2022) This chapter looks at the complicated relationship between globalisation and sustainability and outlines a plan for putting sustainability into action. Sustainability is built on three things: the environment, the economy, and society. In the first part of this talk, we look at how globalisation affects the natural world. To figure out what this link is, we can look at how globalisation has changed energy use, resource depletion, greenhouse gas emissions, and pollution of the environment. After that, we look at the current economic model of green growth and how it relates to sustainability in the context of globalisation. Alternatives to the green growth model are also looked into. When looking at the effects of globalisation on social sustainability, things like life expectancy, urbanisation, and equality are also taken into account. Finally, a way to make globalisation sustainable is shown, one that takes into account how the environment, economy, and society are all linked. [S] The goal of this study is to talk about whether or not globalisation can be done in a way that is sustainable.

**Grzegorz Sierpiński et al.(2019)** In this article, we'll talk about how to get loads from one place to another. The environmental needs of this industry have been compared to the choices that are available right now. One part of the idea that has been put forward as a possible solution is a customised travel planner that takes into account a number of non-standard factors. At the same time, the authors have pointed out that the algorithms being used need to be made more powerful in order to deal with the full scope of the problem. But in this article, we will only talk about the first and last parts of supply chains. The research-based planner is currently being made as part of an integrated platform that is being used as part of a global effort called S-mile. A Look at the Ways the Study Was Done: The use of information and communication technologies has been suggested as a way to plan transportation. After looking at all of the options, it's clear that one of the planners that are already being used will be the basis for a more advanced freight transportation planning tool that is made for the first/last mile segment. The planner's job is to use different optimization methods, such as those that look at route parameters, the number of fleet vehicles that are available, how the cargo is spread out in the vehicle, and so on. The article lists environmental factors as one of the main and secondary criteria that a planner of this kind should look at. The writers also pointed out to the readers that open data sources can be used. With their idea, environmental awareness can be raised at both the

beginning and end of the supply chain management process. Since so many things about transportation have been thought about, this also makes planning easier. Goals: The goal of this article was to look into a possible green way to get around that can help protect the environment. Conclusions: Because of the solution suggested in the paper, urban freight transit management may change. Transportation can hurt the environment, but if ecological factors are taken into account, the damage can be lessened. Planners have to think about a lot more factors when figuring out the best ways to move goods than when figuring out the best ways for people to travel. The comprehensive fleet management platform that is being built will, among other things, connect big freight companies with carriers who take care of the first and last miles. This platform will have a planning module in addition to the other parts of the S-mileSys system.

**Sierpiński et al(2019)** In this article, we'll talk about how to get loads from one place to another. Current options have been looked at in light of the environmental standards that this industry must meet. One part of the idea that has been put forward as a possible solution is a customised travel planner that takes into account a number of non-standard factors. The authors have also pointed out that the algorithms that are already being used need to be widened in order to deal with how big the problem is. But in this article, we will only talk about the first and last parts of supply chains. The research-based planner is currently being made as part of an integrated platform that is being used as part of a global effort called S-mile. A Look at the Ways the Study Was Done: The use of information and communication technologies has been suggested as a way to plan transportation. After looking at all of the available planners, we've found one that can be used as a starting point for making a more advanced freight transport planning tool for the first/last mile segment. The planner's job is to use different optimization methods, such as those that look at route parameters, the number of fleet vehicles that are available, how the cargo is spread out in the vehicle, and so on. The article lists environmental factors as one of the main and secondary criteria that a planner of this kind should look at. The writers also pointed out to the readers that open data sources can be used. With their idea, environmental awareness can be raised at both the beginning and end of the supply chain management process. Since so many things about transportation have been thought about, this also makes planning easier. Goals: The goal of this article was to look into a possible green way to get around that can help protect the environment. Conclusions: Because of the solution suggested in the paper, urban freight transit

management might change. Transportation can hurt the environment, but if ecological factors are taken into account, the damage can be lessened. Planners have to think about a lot more factors when figuring out the best ways to move goods than when figuring out the best ways for people to travel. The comprehensive fleet management platform that is being built will, among other things, connect big freight companies with carriers who take care of the first and last miles. This platform will have a planning module in addition to the other parts of the S-mileSys system.

**Abbasi, Maisam et al.(2016)** The goal of this research is to look at some of the problems and challenges that come with making logistics processes less harmful to the environment.

The strategy and the design are both meant to find out what works best. All of the ten examples are logistics service providers (LSPs) with a strong presence in the Nordic countries.

The main points are shown by analysing the steps that have been taken and those that will be taken in the future to make logistical activities less harmful to the environment. Also, four different kinds of roadblocks have been found. These include the priorities of clients, the complexity of managers, network imbalances, and the fact that the state of technological development and regulatory regulation is unknown. Logistics service providers (LSPs) and product owners who work together to research and plan how logistics systems will be set up in the future are likely to be in high demand.

The proposed paradigm is both comprehensive and integrative, which makes it possible to look into new lines of inquiry. This design is based on a way to work in three dimensions at the same time. More research needs to be done on how LSPs and their clients work together to make it easier to come up with long-term logistics solutions that are good for the environment.

This article takes the results of the case studies and the study of the relevant literature and puts them together to make some suggestions for the logistics sector's long-term growth. Managers and politicians will be able to use this information to solve long-term problems with logistics. To build a sustainable society, we need to come up with new ways to solve problems that have been around for a long time.

### **3. Methodology**

The EST method takes into account environmental factors right from the start. Sustainability in the natural world comes about when both the good and bad effects of humans are lessened. On the other hand, traditional planning takes into account the effects on the environment after the planning stage. This means that mitigation measures are developed after the project has already been done.

A feedback system was used to make the national EST strategy. The system's mechanism took into account the big picture, the policy environment, and the way the system was put together. This method also requires long talks with a lot of interested parties, like government agencies and business leaders. The stakeholder consultation process was made easier by putting them into five groups:

- Protection of public health and treating everyone fairly
- Roadside Pollution;
- Transport Planning;
- Road Safety; and
- Advocacy and Awareness

Here are the results of the participatory method that was used. As a result of these workshops and focus groups, relevant descriptors, methods, and indicators have been picked out (FGDs). We talked about the near future, as well as the middle and far futures. The final solution was chosen from the many options suggested by all the people involved. The next parts will be used as examples.

When making plans for EST in the Philippines, the major players in the transportation industry need to be able to make money. So, near-term and medium-term plans must work with the ways and ways of doing business in the transportation sector right now. A program's strategic planning must start with a clear understanding of what it wants to achieve. In this section, we'll talk about the results of the workshops and meetings that were held to figure out the most important themes and good goals (also called "descriptors" here). These plans take into account the environment,

society, and economy, as well as how each of these parts of sustainable development work together.

#### **4. Strategies for Public Health**

From what we've talked about, it's clear that reducing the bad effects of transportation is very important if we want healthy people to use the roads. Some of the things that should be done to reach this goal are a public information campaign, a strengthening of public health services, the writing of the necessary department administrative orders, and making sure that PUV drivers and affected communities get regular general and audiological checks. Some of the other strategies found were the same as those used in other thematic areas. Some of the things that can be done are putting in place TSM/TDM programmes to make traffic flow better and strictly following the law about not spewing smoke. The main goal of the campaign should be to make more people aware of how good it is to use environmentally friendly transportation options. We need to pay special attention to the different levels of local government if we want this project to be more successful.

#### **5. Conclusion**

The modern transportation system has made it easier to move around and more accessible, which are both good things. However, it has also caused traffic jams and other problems, which are both bad things. The goal of this research was to come up with a way to group policies and measurements that can be used to make transportation plans that are good for the environment. A plan like this would look at ways to make traffic less bad for the community as a whole while still giving people the mobility and access they need. One well-known way to reduce traffic jams is to think of mobility as the ability to move people instead of cars.

#### **Reference**

[1]. Shadimetov, Yusufzhan, and Dmitriy Ayrapetov. "CURRENT ISSUES in the STRATEGY for ENVIRONMENTALLY SUSTAINABLE TRANSPORT." *Universum:Technical Sciences*, vol. 97, no. 5-5, 28 Apr. 2022, 10.32743/unitech.2022.97.4.13343.

[2]. Parakram Pyakurel. Rethinking an Approach for Sustainable Globalization

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DOI: 10.5772/intechopen.105141

[3]. Grzegorz Sierpiński, Marcin Staniek. ENVIRONMENTALLY SUSTAINABLE TRANSPORT PLANNING IN THE SUPPLY CHAIN'S FIRST AND LAST MILE SECTION January 2019

DOI:10.26411/83-1734-2015-2-42-6-19

[4]. Sierpiński Grzegorz , Staniek Marcin, Environmentally Sustainable Transport Planning in the First and Last Mile Section of the Supply Chain Logistics and Transport 2019 | 42 | 83-92

[5]. Lutkovska, S. "GLOBALIZATION STRATEGY for ENVIRONMENTALLY FRIENDLY SUSTAINABLE DEVELOPMENT." Efektywna Ekonomia, no. 3, 27 Mar. 2020, 10.32702/2307-2105-2020.3.81.

[6]. Sierpiński, Grzegorz, and Marcin Staniek. "ENVIRONMENTALLY SUSTAINABLE TRANSPORT PLANNING in the SUPPLY CHAIN'S FIRST and LAST MILE SECTION." Logistics and Transport, vol. 42, no. 2, 2019, pp. 83–92, 10.26411/83-1734-2015-2-42-6-19.

[7]. Abbasi, Maisam, and Fredrik Nilsson. "Developing Environmentally Sustainable Logistics: Exploring Themes and Challenges from a Logistics Service Providers' Perspective." Transportation Research Part D: Transport and Environment, vol. 46, 1 July 2016, pp. 273–283, www.sciencedirect.com/science/article/pii/S1361920916301821, 10.1016/j.trd.2016.04.004.

[8]. Shadimetov, Yusufzhan, and Dmitriy Ayrapetov. "CURRENT ISSUES in the STRATEGY for ENVIRONMENTALLY SUSTAINABLE TRANSPORT." Universum:Technical Sciences, vol. 97, no. 5-5, 28 Apr. 2022, 10.32743/unitech.2022.97.4.13343.

[9].

"Development Strategy on Environmentally Friendly Aquaculture." Chinese Journal of Engineering Science, vol. 18, no. 3, 2016, p. 1, 10.15302/j-sscae-2016.03.001.

- [10]. Bai, Chunguang April, et al. "Blockchain for the Environmentally Sustainable Enterprise." *Business Strategy and the Environment*, 30 Mar. 2022, 10.1002/bse.3026.
- [11]. Fenton, Paul. "Sustainable Mobility as Swiss Cheese? - Exploring Influences on Urban Transport Strategy in Basel." *Natural Resources Forum*, vol. 40, no. 4, 6 June 2016, pp. 143–155, 10.1111/1477-8947.12093.
- [12]. Chiarini, Andrea. "Strategies for Developing an Environmentally Sustainable Supply Chain: Differences between Manufacturing and Service Sectors." *Business Strategy and the Environment*, vol. 23, no. 7, 4 July 2013, pp. 493–504, 10.1002/bse.1799.
- [13]. Elvik, Rune, and Farideh Ramjerdi. "A Comparative Analysis of the Effects of Economic Policy Instruments in Promoting Environmentally Sustainable Transport." *Transport Policy*, vol. 33, May 2014, pp. 89–95, 10.1016/j.tranpol.2014.02.025.
- [14]. Wang, Zhen, and Shu Xia Yu. "Policy Planning for Environmentally Sustainable Transport in Beijing, China." *Advanced Materials Research*, vol. 295-297, July 2011, pp. 2374–2381, 10.4028/www.scientific.net/amr.295-297.2374.
- [15]. Tesfay, Yohannes Yebabe. "Environmentally Friendly Cost Efficient and Effective Sea Transport Outsourcing Strategy: The Case of Statoil." *Transportation Research Part D: Transport and Environment*, vol. 31, Aug. 2014, pp. 135–147, 10.1016/j.trd.2014.05.019.
- [16]. Fürst, Elmar. "Making the Way to the University Environmentally Sustainable: A Segmentation Approach." *Transportation Research Part D: Transport and Environment*, vol. 31, Aug. 2014, pp. 1–12, 10.1016/j.trd.2014.05.017.
- [17]. The Global Economy. Energy use per capita - Country rankings [Internet]. 2022. Available from: [https://www.theglobaleconomy.com/rankings/energy\\_use\\_per\\_capita/](https://www.theglobaleconomy.com/rankings/energy_use_per_capita/). [Accessed: April 04, 2022]
- [18]. Zhao H, Geng G, Liu Y, et al. Reduction of global life expectancy driven by trade-related transboundary air pollution. *Environmental Science & Technology Letters*. 2022;9(3):212-218

[19]. Tang S, Wang Z, Yang G, Tang W. What are the implications of globalization on sustainability?—A comprehensive study. *Sustainability*. 2020;12(8):3411. DOI: 10.3390/su12083411

[20]. De-greening of logistics? – Why environmental practices flourish and fade in provider-shipper relationships and networks *Industrial Marketing Management*, Volume 74, 2018, pp. 276-287