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Abstract

Ever since human beings exist, there are needs to communicate with each other. Because there are needs to communicate, the transportation is necessary. The revolution in transportation helps the growing of economy in human society. But human shall not only focus on economy or themselves, the natural environment also needs to be taken care of. Now in 21st century, as the fast improvement of technology and globalization, transportation is causing a greater emission of greenhouse gases and other pollutants than ever before. As a result, the sustainable transportation is one of the most critical sustainability problems. This project focuses on the sustainability of transportation on University of Toronto Scarborough Campus from multiple angles including private and public transportation, parking facilities, and electric vehicle practicality. This essay will analyse the sustainability issues that UTSC faces in terms of on-campus transport methods. The methodology of research chosen for this particular case will be a survey in the form of an open-ended questionnaire, which will allow the respondents to express their true feelings on the issue. Based on the research findings, we were able to come up with solutions that will bring the university closer to a sustainable mode of transport.

Keywords

There are five keywords available to identify the work. They are sustainability, transportation, greenhouse gases, public transportation, and electric vehicle.

Introduction

When talking about transportation, people always think about transporting people or cargo from point A to B. Since the industrial revolution, transportation has been heavily relied on internal combustion engines, which would inevitably emit CO₂ and other kinds of GHG into the atmosphere, causing damage to environment.

After about 100 years of using internal combustion engine in transportation, people started to realize that transportation was more than travelling from A to B, tran

sportation must be done in a more sustainable way. For which, it must be done in a way that it could meet the needs for present, yet it would not compromise the future generation to meet their needs (Allen, 1993). With this in mind, a research which mainly focused on UTSC campus was conducted, in order to examine the current sustainability of transportation, and to improve sustainability of transportation for the future.

A university is a small-scale community whose population increases yearly, therefore, increasing the transport demands. Transportation has been dubbed as the most prominent sustainability problem in most institutions, UTSC included. As a result of the increment in the number of students on campus, the usage of transport to and around campus has significantly increased. A majority of these commuters use private means of transportation. Research showcases that, on average, yearly cars produce around 28.9% of greenhouse gases, making them the biggest contributors of greenhouse gases on earth (Oswald, 2017). As a result, the quality of the environment spirals downwards not only on campus grounds but in the surrounding environments. The first of these problems is congestion, as most of the students struggle to find parking spots. Another issue that is generated from the usage of numerous automobiles is noise pollution.

Consequently, this will have a significant social impact in that it will affect the health and the wellbeing of students and campus staff (Profillidis et al. 2014). For instance, there will be an increment in the number of on-campus accidents as a result of the numerous numbers of cars. The noise pollution combined with the emission of greenhouse gases contributes significantly to the growth of mental health problems (Oswald, 2017). As a result, interactions with other students will enable us to derive the primary issues affecting UTSC and how they will ultimately be solved to improve the wellbeing of the campus fraternity. Primarily by enhancing the sustainability of transport at the university, the overall quality of life will be enhanced, leading to improved performance.

Method

The orchestration of this research was built around the case study formula. The contents of the case study were derived from open-ended questionnaires. This que

questionnaire was divided into four significant parts. The first part of the survey was focused on the main modes of transport for the students and the staff and the parking facilities that were available on campus grounds. It also aimed to assess the demographics of the campus and how they are relevant to transportation. General questions such as age, gender, and level of education were asked in the first section. The second question wanted to assess the preference of students when it came to the primary transportation method while transiting around campus to access campus facilities. The third section wanted to evaluate the steps taken by the university to ease transportation around the school. For instance, the questionnaire asked if there were enough buses on campus and how effective and convenient, they were based on their schedules. The last section was focused on how the university can improve transportation and make it more sustainable by going green. The students and the staff were also asked for their suggestions on how transport can be improved overall. The questionnaire was handed out to all the departments both at the student and staff levels to ensure that the whole campus was represented.

Demographic profile

Characteristics	Staff		Students	
	N	Sample %	N	Sample %
Gender; Female	200	52	300	47
Male	170	46	325	49

Results and Discussion

Based on the questionnaire, it was evident that UTSC severely lacks in the transportation sector. The findings first revealed that there are four main modes of transport to campus and within the school, which are personal vehicles, buses, bicycles, and feet. A high percentage of the students were observed to prefer private automobiles as the primary means of getting to school. They attributed this to the convenience

personal automobiles offer. In transiting within the campus, most students and staff said they walked mainly; however, their preferred mode of transport would be UTSC busses; however, the schedule of the buses is not convenient for their class schedules. Other issues arose concerning the quality of transport facilities on campus. Some of these issues include the quality of pavements, the width of pedestrian paths, and security lights that diminish the quality of sidewalks. It was noted that the width of pedestrian paths did not encourage cycling. It was also observed that the intervals of the streetlights along the campus walkways were too far apart, which resulted in reduced security for students at night. A majority of students who use cycling as their primary mode of transport reported that there are inadequate parking facilities for bicycles, and most of them were concerned about the safety of their bicycles. There were also insufficient bike lanes, which made using bicycles around campus challenging. Most students seemed to live on campus; however, most of the staff were seen to live off-campus. The students and the staff who lived off-campus suggested that personal automobiles are the most convenient form of transport since the bus routes are inconvenient. It was also observed that the campus had made no long-term strategies to address the transportation issues affecting the students. Primarily, implementations of the transport systems are carried out on an as-needed basis, which is detrimental to sustainability.

Recommendations

Sustainable transport is any form of transportation that can reduce the overall carbon footprint at UTSC. As a result, the following implementations should be made to encourage the use of alternative modes of transportation both on campus and its environments. First of all, university management should focus on increasing the quality of physical infrastructure to motivate the usage of alternative forms of transport. To encourage cycling, the campus should work on increasing the number of bicycle lanes and bicycle stations (Balsas, 2003). This will ensure that more students and staff embrace cycling cutting back on the usage of personal vehicles around campus. To encourage walking around campus, the pathways should be made wider since congestion on the paths discourages walking. The university should also increase the number of streetlights to ensure the safety of the students. The campus should also incorpo

rate surveillance cameras on the sidewalks to ensure that the students feel safer as they will discourage crime. It was also noted that for disabled students, accessibility to the paths was limited, hindering their movement around campus. As a result, UTSC management must include elements such as ramps to ensure smooth movement for physically disabled students. Primarily, by encouraging the students to use alternatives to vehicular transportation, the overall emission of greenhouse gases will be reduced, bringing the university closer to sustainability.

Strategies go a long way in ascertaining the credibility of sustainable goals. As a result, the university must implement long term strategies to address the transportation department. The campus should implement a committee purely dedicated to addressing transportation issues on the campus. It is also crucial that the university management liaises with the local government to ensure that there are better bus schedules that will make transportation to school more efficient (Balsas, 2003). The university should also create awareness on the importance of going green by using sustainable modes of transport. Students should be encouraged to socialize to make carpooling a viable method of getting into school. It should also ensure that students are made aware of the different ways of reducing fuel intake, such as limiting the use of air-conditioning by opening windows. Lastly, the university should find ways of cutting back on costs in other departments to enable more funding for on-campus buses that will reduce the number of personal vehicles. Primarily, good strategies create a sense of direction that will foster the implementation of sustainability goals.

Conclusion

Transport connects people and improves their quality of life. However, it is important to consider the impact current transportation means will have on current and future generations. Noise pollution and air pollution have largely contributed to myriads of health problems. Air pollution results from the emission of greenhouse gases by vehicles. As a result, being global leaders, universities should strive to promote the use of alternative modes of transport that will cut back the emission of these gases. This requires that the university implements long term strategies such as involving the local government to come up with solutions to transportation problems. Summarily, going green will ensure that the planet is safer for generations to come.

Citation

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