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Commuter behaviour in public transport and their implications to policies and optimal use

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Abstract
The study aims to find the differences in the behavior of commuters in public transport, determine the implications of these behavior differences as to safe regulations and technologies, optimal transport use and to analyze the behaviours that will lead to an effective transport demand management. The research employs the descriptive quantitative method because it characterizes the phenomenon of the population of the study. The study comprised of 78 respondents; purposive sampling is employed in the study because it provides divers cases relevant to the study. Results show that most commuters were 41 years old and above, women and whose type of employment is on the government sector. Respondents also disclose that they would rather use taxi over other means of transportation as they think that this lessens the danger of being delayed from their work or other appointments. It also shows that price of transport has the greatest bearing on the choice of transportation among the respondents. All these factors give significant insights on the policy making for public transport system and optimization of its use.

Keywords: Commuter behavior, public transport, mode of transportation, public utility vehicle, policy on public transport, and optimal transport use

Introduction

Public transportation helps to connect people with jobs and opportunities as well as save a lot of money every year in commuting costs. Likewise, it also offers reduction in road congestion and travel times, air pollution, energy and oil consumption all of which benefit the public. All these put together reduce greenhouse emissions by facilitating compact development which conserves land and decreases the distances that people need to travel to reach their desired destination. It is significant accessibility system of transportation outcome. It attracts commuters on door to door development and mobility service in the community. It is accessible and vital in the system of transit sustainability and mobility.

It is a transport of system in the impact of considerable satisfaction in life accessibility and preciseness. It is a provision accessibility in the public transportation in daily life and noticeable in the environment (Saif, Zefreh, & Torok, 2019). On the other hand, impact of public transport is a multitasking and choice mode depends on the comfort of the commuters. The allocation of the public transportation affects its utilisation. Individual can choose public transit trip for more productivity travel. These can be through vans, buses, private cars, or any public utility vehicles. The preferences provide various alternatives behavior and attitude of the commuters (Malokin, Circella, & Mokhtarian, 2019).

Furthermore, it is evident that public transport is a vital part of people's life that there should be a creation of best-in-class transport systems that require significant investments of the concerned sectors. This is for the development and maintenance of roads and rail infrastructures, renewal of public transport fleet, investment in intelligent transportation system (ITS) and digitization. Public transport examines through understanding the practice of the perspective of the transport users and depends on the society mobility structure in the area location of place. Public transport access and needs of groups of various citizens and resources on how and where they live and it meets their needs mobility to transportation in the public. It indicates public transport confidence for sustain mobility on the part of peoples live (Levin, 2019). In addition, public transport explores the opportunities and options in the activities of the commuters. It applies to the approach of capability concept and framework. Consider, the contribution of public transport in the perceived health, cohabiting, condition, and place as part of life among the commuters and the quality and quantity of public transport as modal option in the travel in carrying the activities and value of the commuters because it contributes and highlights issues in transportation in the society and community. Public transportation service provides transport in some options and modals (Ryan, & Wretstrand, 2019).

Nevertheless, there are however, a lot of factors that affect the overall experience of commuters in their use of public transportation anywhere in the world. A better understanding of these factors that influence individual travel behavior can reveal new insights that can improve existing transport planning, policies and future infrastructures to further encourage more people to use public transport system in the optimum basis. Commuter profile such as age and gender as well as their behavior in regard to the use of public transport are vital determinants of how they perceive the system of mobility in their locality. It explores that public transport in the subject well-being connectivity mode commute. Public transport associated connectivity policies and designs for promoting behavior to commuting change (Chng, White, Abraham, & Skippon, 2016). Similarly, commuter satisfaction is the significant factor in any service industry retention. It concentrates the people commuter satisfaction with the system of public transport. It contributes to the attribute focus on the improve transport quality of service. This can evaluate the commuters, passengers satisfaction in the success of public transportation to sustainable develop society (Nguyen, 2019).

Similarly, transport policies alone do not generate maximum encouragement to all individuals, as each individual faces different set of constraints which could be a result of the role played in the household. Commuters do not play the same role in a household which also might be considered in laying out plans, policies, and infrastructures in the transportation sector. These differences among the commuters invariably offer some concerns in reaching an optimum utilisation of public transport system so they will be given appropriate attention by those who are in authority. Transport services that provide equal benefits across all types of commuters can only be provided if there is better understanding of the needs of all public transport users. Public transportation demand on the behavior of the commuters affected evidently in series and in relation to diversity, design, destination, density, and built environment. The policies affect the built conjunction of the features in the environment. It examines the reform policy in riders' public transportation. The smart transport reform policy on travel journey on cost system fare examines the impact of policy fare change on the commuters featuring the density, diversity, population, and commuters' accessibility and destination. It employs a data analysis offer to framework generic policy in public intervention and context (Liu, Wang, & Xie, 2019). Hence, the impact accessibility of transport evaluates and implements measures and opportunities based on threshold time of travel. It explores appraisal accessibility of plan transport to be used for plan scenarios policy with different impacts of social group sensitive to threshold time and choice. It analyses scenarios

differently in implementation partially on impact of accessibility which is distributed significantly depends on the chosen threshold of time chosen travel. It highlights choice threshold of time cumulative measures and opportunity implication and evaluation policy on mobility and transport (Pereira, 2019).

Subsequently, developing cities may have different transport services and different levels of commuter equity compared to the developed cities, but similar issues may arise from the commuting public. Hence, this research tried to determine commuter behavior in public transport system and its implications to policies and optimal transport use. The model of simulation of transport provides evaluation which accessibility on public transportation enabling the real data on commuters. System simulation simplifies the personal face and behavior pattern optimisation in trip of public transport with real target style characteristics. The transport system evaluates the uses of all public transportation destinations of commuters with intervals and select variants appropriate to derive parameters in expected scenario. It confirms that accessibility potential elucidates issues of transfers, time of commuting, mode usage of transportation, accessibility, and offer trips improved of local situation and understanding to assess and to help the impact changes plan of transport services (Horak, Tesla, Fojtik, & Vozenilek, 2019).

Objectives of the study

1. To show the differences in the behavior of commuters in public transport.
2. To determine the implications of these behavior differences as to safe regulations and technologies and optimal transport use.
3. To analyse the behaviours that will lead to an effective transport demand management.

Statement of the Problem

1. What is the demographic profile of the commuters as to age, gender, and type of employment?
2. What are the commuters' behaviours in public transport as to schedule, and preference?
3. What are the implications of commuter behaviours as to safety regulations and technologies in public transport, and optimal transport use?

Methodology

Research Design

The research employs the descriptive quantitative method because it characterizes the phenomenon of the population of the study. This method focus on what and why the research is all about. The descriptive quantitative research focuses on the nature of the study on the behaviour of commuters in optimise public transport as formulation of policy to transportation. It provides description on specific research employed in the study. It reflects the application of the quantitative research content and method (Riffe, Lacy, Fico, & Watson, 2019).

Respondents of the Study

The participants of the study are commuters who have optimal usages of public utility vehicles like van, bus, private vehicle and other mode of transportation. The study comprised 78 respondents. This number of respondents is based on the number of participants who answered the questionnaire for data gathering analysis.

Sampling Technique

Purposive sampling is employed in the study because it provides divers cases relevant to the study. It is to provide insight on the commuter behaviour in the public transport and optimal use among them. It is a characteristic that defines significance of the people as part of the study. It provides the quantitative description essential in the assessment of the behavior and attitude of the respondents. It is appropriate method used as sampling in the study. It provides specific and effective elusive phenomena in the content of the study as to detail, indicator, issue, classification, and technique. It illustrates the categories and object of the implementation of the study (Serra, Psarra, & O'Brien, 2018).

Result of the Study

Table 1. *Demographic Profile*

Variable	Frequency	Percentage
Age:		
25 years and below	11	14
26-30 years	12	15
31-35 years	9	12
36-40 years	11	14
41 years and above	35	45
Gender:		
Male	18	23
Female	60	77
Type of employment		
Business	1	1
Government	53	68
Private	12	15
Self-employed	12	15

It shows that age bracket of commuters are 41 years and above with a frequency of 35 or 45% among the respondents. Female respondents got a frequency of 60 or 77% among the respondents, and government commuters are 53 or 68% among the respondents.

Table 2. *Opinion and behaviours in public transport*

Opinion	Frequency	Percentage
My travel schedule is:		
Daily	59	76
Weekly	9	12
Monthly	4	5
Others:	6	8
My purpose of travel is		
Job	60	77
Errand	5	6
Leisure	9	12
Others:	4	5
I prefer to travel in the		
Morning	66	85
Afternoon	5	6
Evening	4	5
Others:	3	4
My travel time is usually		
Short	41	53
Long	18	23
Indefinite	19	24
I prefer to travel by		
Bus	31	40
Private car	32	41
Train	10	13
Others:	5	6
I like my public transport to have		
Radio	22	28
TV	9	12
WiFi	33	42

Others:	14	18
My priority in using public transport is		
Convenience	27	35
Mobility	23	29
Safety	21	27
Others:	7	9
If I have the choice I like to travel on a		
Bus	12	15
Taxi	32	41
Train	16	21
Others:	18	23
The highest danger in using public transport is		
Delay	32	41
Health hazard	30	38
Theft	14	18
Others:	2	3
I use public transport because it is		
Cheap	60	77
Safe	5	6
Comfortable	6	8
Others:	7	9

It shows that travel schedule is daily with a frequency of 59 or 76% among the respondents. Purpose of travel is job with a frequency of 60 or 77% among the respondents. Preference of travel is morning with a frequency of 66 of 85% among the respondents. Travel time is short with a frequency of 41 or 53% among the respondents. Preference vehicle is private car with a frequency of 32 or 41% among the respondents. Public transport Wifi with a frequency of 33 or 42% among the respondents. Choice of travel vehicle is taxi with a frequency of 32 or 41% among the respondents. Danger of public transport is delay with a frequency of 32 or 41% among the respondents. Public transport is cheap with a frequency of 60 or 77% among the respondents.

Discussion of the study

Demographic Profile

The respondents were described in terms of their age, gender and type of employment which are deemed as important factors in determining the behaviours in using public transport. As to age, most of them are 41 years and above (45%), followed by 26-30 years old (15%), tied at 14% are ages 25 years old and below as well as 36-40 years old and finally 31-35 years old with 12%. These data showed that most of the commuters are at their prime age and may be part of the workforce, in the peak of their strength and are able to do profitable endeavors. It examines the moral norms of individual characteristic in standard theory on behavior and predictors, attitude in the intentions of the influences to characteristic demographic of the respondents (Botetzagias, Dima, & Malesios, 2015).

Furthermore, it also showed that as to gender most commuters are females attested by 77% while only 23% of them are male. With this figure, it can be surmised that majority of the commuters who go out and look for transportation are women who are either going for work, for shopping, leisure or any other reason. It develops the individuals to identify the behaviours among male and female sensitivity during the process of commuting at their own choice which is a parameter on the commuter behavior and function (Sermons & Koppelman, 2001). Hence, it analyses the individual commuting behavior, (Gimenez-Nadal, Molina, & Velilla, 2018).

On the other hand, as to type of employment, most respondents are in the government sector which attribute to 68%, followed by those who are self-employed and in the private sector each at 15%, and last those who are in business with 1%. As gleaned from these data, it is evident that majority of commuters are working in the government sector and are in the routine of using public transportation

who may not have their own private cars or vehicles. It offers the quality of vehicles to the public transport. It reviews and understands the key to public transport on the development of mobility on public transport and services through government and non government employees for future development in the automation of vehicle implication and policy (Lazarus, et. al., 2018). It provides services to public quality transport. It measures and adopts the quality of service on public transport input and outputs. The various types and kind of public transit assess the perspective concept and analyses the quality and address the public transport services to the commuters, (Ojo, 2019).

Behaviour in Public Transport

Nonetheless, when asked about the frequency of travel, most respondents revealed that they travel daily as attested by 76% of them, 12% said that they travel weekly, while 8% said they travel at random and finally 5% travel on a monthly basis. This shows that travelling is a part of most people's lives and needs to be attended to in terms of safety, convenience and mobility. This is especially important with the knowledge that most of these commuters are women who may be pregnant or under some conditions that need specific requirements in their transportation use. It is in this light that such factors like gender and frequency of travel be considered as important in decision-making for transport policies and implementation. The various mode of travel tends to cohorts in a potential phenomenon. It is a multimodality travel choices because of the crises counterparts travel behaviour. It classifies the travel form of modality attitude and preferences. It explores the affect and analysis of the different demographic to the adoption environment of modality (Lee, Circella, Mokhtarian, & Guhathakurta, 2019). It focuses on the public transport passenger in multitasking travel. It is determinant potential travel based, travel modes among the respondents. It predicts the travel time and function of the respondents as to transit and auto passenger riders. Commuters using the mode of riding in the public engage in the different activities on auto, buses, van, taxi or bicycle. Commuters are active and enjoyable on their travel time and preferences (Singleton, 2019).

Each travel of the commuters have purpose otherwise they would rather stay at home. So as to their aim of travelling, 77% of them revealed that it is because of their job while 12% said it is for pleasure, 6% attributed their travel for errands and 5% for other reasons. It can be surmised then that these commuters are workers who go to offices, shops, and other place of work that need transportation on a daily basis. Having this in mind, and other fact, previously revealed it becomes more necessary that those in the authority to decide on transportation matters be mindful of these aforementioned factors if they want to truly implement policies beneficial to the public. The purpose of the commuters provide benefits on their lasting emotion positively particularly on their behaviour on their travel in the improve transportation experiences and services (Zhu & Fan, 2018). It builds a characteristic sensitiveness to the environment on the purpose and type of the travel in intuitive situation. Knowing the situation of the public utility vehicle in the society and it provides choices on their travel. It associated with the purpose of their travel toward their destination to work and the likes. It employs the control of their selection of the public transport using different alternatives. It explores and focuses on the understanding of the purpose of their travel to identify the choice of their mode of transport choices (Salon, 2015).

The respondents were also asked in regard to their preferred time of travel which revealed that most of them travel in the morning shown by 85%, followed by 6% in the afternoon, 5% in the evening and 4 % at any other time of the day. This is not surprising as most of their travels are job related that they need to report every day in the morning to do their duties in their work. The daily morning travel is a routine to them that if their mobility, safety, and convenience are compromised, they might not be able to perform their duties effectively and efficiently. Any problem or issue on their daily routine in commuting is a factor that should be given proper attention by those in the public transport sector. Transport system provides preference travel of the commuters and it is sometimes called as vehicle automation. It is important to note the travel time schedule of the different utility vehicle to the comfort of the commuters. The system of the transport will provide the demands of the passengers' success and integration. It is a way of the experiences of the commuters to travel that may lead to their time convenience in their travel (de Almeida Correia, Looff, van Cranenburgh, Snelder, & van Arem, 2019).

It is considered as vehicle of transformation in the public transport and mobility. It assesses the impact related to transport, development, mode, models and simulation. It proposes the simulation based on the majority commuters, travelers, simulations and decision making attributes. It explores the different advantages on the preference impact of both the public transport and the commuters. It proposes the methods and illustrates the system in the public transport simulation preference of the travelers or commuters according to their purpose (Kamel, Vosooghi, Puchinger, Ksontini, & Sirin, 2019).

As to the length of their travel, 53% of them said that their trip is usually short while 24% said that their travel duration is indefinite and lastly 23% revealed that their travel time is long. This implies that with the majority of them who travel in a short period of time but on a routine basis, they should have fast mobility, safe, and convenient commuting experience for them to become productive individuals. It extends and retracts the length of travel based on the status of the number of vehicles on the road. It provides dense on the subsurface length flowing pathways on the road. Consider the traffic and peak hour of travel. It determines the distance of the transport from the destination as to speed flow of the public transport. It calculates the extension and even calculates the retraction travel time substantially to distribution of time travel condition on the dynamic mode of catchment (Van Meerveld, Kirchner, Vis, Assendelft, & Seibert, 2019). It predicts time of arrival of the vehicle and time of travel which is crucial to public transport reliability. It provides the system in the public transport to be attractive in the accuracy of the time providing in the transit information system. It is a prediction of successful system and accuracy depends on the situation on the road inputs and techniques. It predicts the time travel usage based on the improve accuracy prediction (Kumar, Jairam, Arkatkar, & Vanajakshi, 2019).

In regard to the preferred transport means of the respondents, it was revealed that most of them prefer to travel by private car (41%) followed by 40% who said that they like to travel by bus, 13% by train and 6% by other means of transportation. This is not surprising, since traveling by private car is the fastest and most convenient way of going to work or do some errands. However, it shouldn't be ignored that a good number of people and basically only lagging by 1% are those who prefer the bus as a means of their transportation, hence a factor that should not be neglected at all. It provides parameters on to the ambiguity of the situation. It provides mode of transport conveniences of the commuters and provides decision making alternative and preferences on the public transport. It is a mode of transport preference of the commuters. It is a degree of alternative selections and of public transport mode (Samanta, & Jana, 2019). It categorises the gaps of the commuters to public transport in different behavioral and attitude of the commuters base on the benefits, opportunities and concerns related to their preferences of public transport (Malokin, Circella, & Mokhtarian, 2019).

Moreover, as to amenities that the respondents like in their public transport, 42% said they like to have WiFi on board, while 28% said they want radio, 18% other amenities and 12% said they like TV on their public transport. In this age of technology, connectivity has become a necessity wherever a person is, so that WiFi is also a big factor in the use of public transportation. Transport internet also provides entertainment that commuters need while travelling so as to make their commuting experience pleasant. It provides approach on innovation to different level of public transport in terms of the services offered to the passengers. It serves as a good foundation in support to resources of the public transport demands, Hu, Legara, Lee, Hung, & Monterola, (2016). It is a diverse factor that provides the public transport quality on the passengers' perspective according to frequency of service, mode, fares, and hours of operation to include internet services (De Gruyter, & Currie, 2019).

Consequently also, when queried about their priority in using public transport, 35% of them said convenience, 29% for mobility, 27% for safety and 9% for other reasons. It can be seen here that commuters prioritise convenience over mobility and safety, another factor that may be considered by policy makers in the transport sector if they want the public to use public transportation. As it was revealed that this is their first consideration in the use of public transportation, it is but in order to make this as a matter of concern to lure more people to use public transportation and decongest roads of private cars. It develops and systematic framework and optimisation of public transport which is effective in the management planning and control of the public transport. The propose framework on public transport provides methods and analysis in operation of the public utility vehicle. It addresses

problems in the schemes and control parameter. It can provide the regulation of the public transport independently. It provides system of sustainable transportation policy in a traffic scheme (Haitao, Yang, Liang, Menendez, & Guler, 2019). It comprehensively considers the system development of the public transport policy support and services. It establishes the performance priority of the public transport implementation. It pays to the harmonious system and development in the priority of public transport services level in the improve performance level and priority of the public transport (Zhang, Zhang, Sun, Zou, & Chen, 2018).

Additionally, the respondents also revealed that if given a choice, they would choose taxi as their means of transportation with 41%. It is followed by those who chose other means of transportation with 23%, some respondents on the other hand chose train with 21% and lastly those who chose bus account to 15%. This data is a result of other factors such as their consideration of amenities where WiFi is on the first spot and their priority in using public transportation is convenience. Having this response, it is highly important that the conditions in using the bus be improved so that more people will shift from other forms of transport to using buses. It provides determinant analysis on the mode travel and process behaviour and intention according to profile, type and mode in sustainable policies of public transport (Mars, Ruiz, & Arroyo, 2018).

Likewise, as to their responses as to the highest danger in using public transport, they said that it is from delay with 41%, followed by health hazard (38%), then theft (18%) and lastly from other factors with 3%. This then gave reason why they prefer private car over other means of transport because this offers them the fastest way to reach their destination whether for job, errand or any other purposes. Having responded this way, the authorities on public transportation are challenged to provide efficient way of mobility for the public. It explores the danger in public risk in the public transport. Commuters are exposed to risk and danger from their travel. This risk is a big challenge in the transport group and association to regulation for tangible responsible care and dimension to satisfy customers' transport delivery services (Belay, 2020). However, safe transportation must be considered. It is crucial issue on busses transit perspective on passengers and operators. This can provide and improve opportunity to performance safety on public transport. The risk accident in public transport exposes severity to its function. Moreover, it implements the safety traffic road system management of public transport in monitoring the performance safety on accident risk routes in the norms of safety process (Porcu, Olivo, Maternini, & Barabino, 2020).

Finally, when the respondents were asked on the reason why they use public transport, the primary reason is because it is cheap which garnered 77% of the responses. It is followed by other factors (9%), comfortable (8%) and safe (6%). These figures signify that the respondents take the price of transportation as an utmost consideration when choosing their means of mobility and all other factors fall as secondary reasons for using public transport. As such, it is imperative on the decision makers in the public transport sector to regulate and monitor the price for public transport to make it widely available to the commuters. Public transport is connected critically among the commuters on real arrival and departure to public utility vehicle transport and asset. It enables the integration and support to driven transport system and decision. It becomes promising to the smarter system approach in the rules and policies of the transportation. The system is described and is illustrated in the methods of analysis in the system and resources (Sun, Dubey, White, & Gokhale, 2019). It provides quality services, satisfaction, expectancy, effort and determines factors that perceive public services and opportunities to commuters' behavior (Liébana-Cabanillas, Molinillo, & Ruiz-Montañez, 2019).

Conclusion

From the data gathered, it can be concluded that most commuters were 41 years old and above, women and whose type of employment is on the government sector. They travel daily because of their job and do their travelling mostly in the morning to perform their respective duties. They do short trips only and prefer to travel by private car on the account that they like to have WiFi on board and that they prefer convenience above any other factors while travelling. However, if given a choice, the respondents disclosed that they would rather use taxi over other means of transportation as they think that this lessens the danger of being delayed from their work or other appointments. Finally, the price of transport has

the greatest bearing on the choice of transportation among the respondents. All these factors give significant insights on the policy making for public transport system and optimisation of its use.

Recommendation

The policies that are to be made may consider the majority of women commuters who use transportation. This may be in terms of safety features and frequency of transport arrivals and departures. Convenience and provision of WiFi as well as affordable price may also be some of the prime concerns that policy makers in the public transportation sector may look into to encourage more commuters. The transport sector may also take accessibility and availability of public transportation into priority if they want optimal use of the facility. The public transportation major decision makers may consider all factors affecting commuter behaviour to upgrade their transport system in terms of infrastructure, efficiency and affordability. A more extensive study is recommended to be done to gather more data that will enhance and confirm the insights gained in this research.

References

Belay, D. G. (2020). Assessing Risks of Urban Public Transport Governance: A Study of Bus Passengers. *International Journal of Risk and Contingency Management (IJRCM)*, *9*(2), 19-32.

Botetzagias, I., Dima, A. F., & Malesios, C. (2015). Extending the theory of planned behavior in the context of recycling: The role of moral norms and of demographic predictors. *Resources, conservation and recycling*, *95*, 58-67.

Chng, S., White, M., Abraham, C., & Skippon, S. (2016). Commuting and wellbeing in London: the roles of commute mode and local public transport connectivity. *Preventive medicine*, *88*, 182-188.

De Gruyter, C., & Currie, G. (2019). *Valuing Public Transport Customer Amenities: International Transit Agency Practice* (No. 19-00269).

Gimenez-Nadal, J. I., Molina, J. A., & Velilla, J. (2018). The commuting behavior of workers in the United States: differences between the employed and the self-employed. *Journal of transport geography*, *66*, 19-29.

Haitao, H., Yang, K., Liang, H., Menendez, M., & Guler, S. I. (2019). Providing public transport priority in the perimeter of urban networks: A bimodal strategy. *Transportation Research Part C: Emerging Technologies*, *107*, 171-192.

Horak, J., Tesla, J., Fojtik, D., & Vozenilek, V. (2019). Modelling Public Transport Accessibility with Monte Carlo Stochastic Simulations: A Case Study of Ostrava. *Sustainability*, *11*(24), 7098.

Hu, N., Legara, E. F., Lee, K. K., Hung, G. G., & Monterola, C. (2016). Impacts of land use and amenities on public transport use, urban planning and design. *Land Use Policy*, *57*, 356-367.

Lazarus, J., Shaheen, S., Young, S. E., Fagnant, D., Voege, T., Baumgardner, W., ... & Lott, J. S. (2018). Shared automated mobility and public transport. In *Road Vehicle Automation 4* (pp. 141-161). Springer, Cham.

Lee, Y., Circella, G., Mokhtarian, P. L., & Guhathakurta, S. (2019). Are millennials more multimodal? A latent-class cluster analysis with attitudes and preferences among millennial and Generation X commuters in California. *Transportation*, 1-24.

Levin, L. (2019). How may public transport influence the practice of everyday life among younger and older people and how may their practices influence public transport?. *Social Sciences*, *8*(3), 96.

Liébana-Cabanillas, F., Molinillo, S., & Ruiz-Montañez, M. (2019). To use or not to use, that is the question: Analysis of the determining factors for using NFC mobile payment systems in public transportation. *Technological Forecasting and Social Change*, *139*, 266-276.

Liu, Y., Wang, S., & Xie, B. (2019). Evaluating the effects of public transport fare policy change together with built and non-built environment features on ridership: The case in South East Queensland, Australia. *Transport Policy*, *76*, 78-89.

Kamel, J., Vosooghi, R., Puchinger, J., Ksontini, F., & Sirin, G. (2019). Exploring the impact of user preferences on shared autonomous vehicle modal split: A multi-agent simulation approach. *Transportation Research Procedia*, *37*, 115-122.

Kumar, B. A., Jairam, R., Arkatkar, S. S., & Vanajakshi, L. (2019). Real time bus travel time prediction using k-NN classifier. *Transportation Letters*, *11*(7), 362-372.

Malokin, A., Circella, G., & Mokhtarian, P. L. (2019). How do activities conducted while commuting influence mode choice? Using revealed preference models to inform public transportation advantage and autonomous vehicle scenarios. *Transportation Research Part A: Policy and Practice*, *124*, 82-114.

Mars, L., Ruiz, T., & Arroyo, R. (2018). Identification of determinants for rescheduling travel mode choice and transportation policies to reduce car use in urban areas. *International journal of sustainable transportation*, *12*(8), 572-582.

Nguyen, X. P. (2019). The bus transportation issue and people satisfaction with public transport in Ho Chi Minh city. *Journal of Mechanical Engineering Research and Developments*, *42*(1), 10-16.

Ojo, T. K. (2019). Quality of public transport service: An integrative review and research agenda. *Transportation Letters*, *11*(2), 104-116.

Pereira, R. H. (2019). Future accessibility impacts of transport policy scenarios: Equity and sensitivity to travel time thresholds for Bus Rapid Transit expansion in Rio de Janeiro. *Journal of Transport Geography*, *74*, 321-332.

Porcu, F., Olivo, A., Maternini, G., & Barabino, B. (2020). Evaluating bus accident risks in public transport. *Transportation Research Procedia*, *45*, 443-450.

Riffe, D., Lacy, S., Fico, F., & Watson, B. (2019). *Analyzing media messages: Using quantitative content analysis in research*. Routledge.

Ryan, J., & Wretstrand, A. (2019). What's mode got to do with it? Exploring the links between public transport and car access and opportunities for everyday activities among older people. *Travel behaviour and society*, *14*, 107-118.

Saif, M. A., Zefreh, M. M., & Torok, A. (2019). Public transport accessibility: a literature review. *Periodica Polytechnica Transportation Engineering*, *47*(1), 36-43.

Samanta, S., & Jana, D. K. (2019). A multi-item transportation problem with mode of transportation preference by MCDM method in interval type-2 fuzzy environment. *Neural Computing and Applications*, *31*(2), 605-617.

Sermons, M. W., & Koppelman, F. S. (2001). Representing the differences between female and male commute behavior in residential location choice models. *Journal of transport geography*, *9*(2), 101-110.

Serra, M., Psarra, S., & O'Brien, J. (2018). Social and physical characterization of urban contexts: Techniques and methods for quantification, classification and purposive sampling. *Urban Planning*, *3*(1), 58-74.

Singleton, P. A. (2019). Multimodal travel-based multitasking during the commute: Who does what?. *International Journal of Sustainable Transportation*, *14*(2), 150-162.

Sun, F., Dubey, A., White, J., & Gokhale, A. (2019). Transit-hub: A smart public transportation decision support system with multi-timescale analytical services. *Cluster Computing*, *22*(1), 2239-2254.

Van Meerveld, H. J., Kirchner, J. W., Vis, M. J., Assendelft, R. S., & Seibert, J. (2019). Expansion and contraction of the flowing stream network alter hillslope flowpath lengths and the shape of the travel time distribution. *Hydrology and Earth System Sciences*, *23*(11), 4825-4834.

Zhang, X., Zhang, Q., Sun, T., Zou, Y., & Chen, H. (2018). Evaluation of urban public transport priority performance based on the improved TOPSIS method: A case study of Wuhan. *Sustainable cities and society*, *43*, 357-365.

Zhu, J., & Fan, Y. (2018). Daily travel behavior and emotional well-being: Effects of trip mode, duration, purpose, and companionship. *Transportation Research Part A: Policy and Practice*, *118*, 360-373.