Reconsideration of sustainable mobility in Budapest - A students' perspective

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DOI 10.29180/9786156342560_8

Abstract

The world today is in the industrial 4.0 with the fast pace of technology development. This urbanization and the high density of the population are paralleled by environmental issues such as high levels of CO2 emissions, plastic waste, or climate change from urban areas. Transport is a crucial actor as a means of advancing socioeconomic development. Moreover, it contributes to the overall sustainability strategy by encouraging public transportation as part of sustainable mobility. Subways, buses, and trains have all been improved to make them more efficient and accessible as part of the city's numerous initiatives to promote the use of public transportation. Hungary's capital, Budapest, is undergoing rapid urbanization while playing a significant geopolitical role in fostering convenient transit for locals and tourists. Budapest is located in central Europe and acts as a bridge linking Western and Eastern Europe. Hence, Budapest attracts a high concentration of mobility. Budapest's municipal and local bodies outlined their plan for sustainable urban mobility in 2016 with the vision of 2030. This plan focuses on people residing or visiting the city and increasing public transport usage. It is expected that by lowering pollutants and greenhouse gas emissions, reducing congestion, and enhancing transit options, these efforts will enhance the quality of life for locals. Furthermore, Budapest's dedication to efficient transportation serves as a strong global example of how cities can improve public transportation while minimizing negative environmental effects. This study collected data through focus groups interview method, the selected students discussed the different drivers that affect their mobility. This study sheds light on the city's sustainable mobility and some of the factors that persuade and discourage students from using public transport. Based on the perspective of students residing in Budapest, this study identified some of the factors that may accelerate the city's sustainable mobility. Through analysing the drivers affecting urban mobility, a wider picture of Budapest's sustainable mobility was concluded.

Keywords: Urban Mobility, Budapest, Public Transport, Sustainability, Drivers

JEL codes**:** R11, F21, F64, O44, Q56

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INTRODUCTION

In recent years, Budapest has made tremendous progress toward sustainable transportation, implementing a number of programs to lower carbon emissions, enhance air quality, and encourage more sustainable forms of transportation like cycling and public transportation. Sustainable mobility is recently capturing the attention of many countries and society as it emphasizes on the sustainability of mobility. It is regarded as a strategic plan as it combines transportation for economic development while considering sustainable factors. Transport fosters economic growth is efficient, and coordinated, and helps to reduce obstacles to access to goods and services (World Bank, 2023). Budapest is not an exception to this trend; the complex nature of urban mobility is a pressing concern for major cities around the world. Budapest, where about 18% of the population resides, is the country's political, economic, logistical, and cultural hub (Hivatal 2018). Pest County has a population of 1,247,372 and Buda had a population of 1,749734 in 2017. According to the Hungarian Central Statistical Office (HCSO), 837,532 people resided in the Budapest metropolitan area (Hivatal 2018).

Budapest draws a workforce from a sizable area because of its strategic location. The transportation system is an important economic sector, therefore society anticipates a number of good consequences, even though the operation has a number of drawbacks such as the high emission of greenhouse gases, which are detrimental to the city and the EU sustainability goals (European Parliament,2021).

Budapest is currently dealing with a distinct set of urban transportation issues that need careful thought and creative solutions. Yet, it must actively support environmental sustainability while ensuring efficient integration and land usage (IRJ, 2014). For instance, reducing the EU transport emission has been a target for the region, this has led to the development of policies such as the 2016 strategy for low-emission mobility, the European Green Deal which was introduced in 2019, and the Sustainable and smart mobility strategy(European Parliament, 2021).

Urban areas account for 64% of all travel kilometers now; by 2050, this percentage is predicted to quadruple (Lerner, 2012). These issues are obstacles for the near future as well, therefore specialists must start thinking about solutions now. They are in fact, recently formed bottlenecks, but as time goes on, they will increasingly define the degree of standard.

In recent years, quality and cost have been the most significant factors for passengers (Tica et al., 2011), with performance and technology also playing a significant role (Dell'Olio et al., 2012). Yet, these regions have the most spatial issues; as a result, sustainability has lately been essential for building a successful public transportation system (Cerny et al., 2014).

1.1. LITERATURE REVIEW

Our lives and livelihoods depend on mobility. The contribution of transportation to economic development and human capital is crucial. Transportation shapes the people’s lifestyles and influences everything that they do including the way that they travel to work or leisure, and the way they do their businesses such as shipment of the products to distribution centers.

The global mobility system clearly is dominantly unsustainable. Mobility is associated with intensive fossil-fuel use, high levels of greenhouse gas emissions, air and noise pollution, environmental damage, and the exclusion of rural communities and poor urban dwellers from economic opportunities. In a world increasingly rich and aspiring to more mobility, getting the mobility system to be sustainable has become a defining factor of society’s future.

Banister (2008) argued that creating an alternate paradigm for investigating urban complexity and strengthening the connections between space usage as well as transportation is

the ultimate objective of building sustainable mobility. Moreover, the most sustainable urban form would be applied to the city which is home to the majority of the world's population (70–80%) (Banister, 2008).

Sustainable mobility refers to the provision of infrastructure, services, technologies, and information to enable access to goods and services, and participation in activities in a manner that, like all other forms of sustainability, allows for the continuation of such access and participation across future generations (Budnitz, 2019). The World Bank defines sustainable mobility with four main focuses as follows:

- Universal Access: Connect all people, including women and communities to economic and social opportunities.
- Efficiency: Optimize the predictability, reliability, and cost-effectiveness of mobility.
- Safety: Drastically reduce fatalities, injuries, and crashes.
- Green: Minimize the environmental footprint of mobility (GHG emissions, noise, and air pollution).

In addition to the four above pillars, Gallo and Marinelli (2020) identified the factors associated with sustainable mobility which were "Environmental Socio-Economic Technological". Moreover, the European Council (2006) defined "sustainable transport" as, to guarantee the transportation systems meeting society's economic, societal and environmental demands while minimizing any negative effects on those factors. Hence sustainability in mobility is in need, however, it should link with society's demands.

The change in model of urban transportation is becoming more and more widely recognized worldwide. It aims to decouple transportation from fuel supplies and pave the way for future cities in a cleaner, more prosperous and social sense (Mozos-Blanco et al., 2018). The EU (2019) defined the Sustainable Urban Mobility Plan (SUMP) as a strategic plan designed to satisfy the mobility needs of people and businesses in cities and their surroundings for a better quality of life. It builds on existing planning practices and takes due consideration of integration, participation, and evaluation principles. Hence, future sustainable mobility is a hope for reducing pollution and congestion.

Melkonyan et al. (2022) stated that Sustainable Urban Mobility (SUM) was a part of sustainable urban systems, organized into collective, individual, and freight transportation. It is defined as a system that provides efficient access to goods and services, job markets, and social connections while limiting short- and long-term adverse consequences for environmental, social, and economic services. Melkonyan stated in his research that there are 3 drivers for SUM.

- Climate Change—rising transport-related carbon emissions, driven by oil dependence, and climate change impacts.
- Environment and Health—resulting in poorer air quality, congestion, and health effects.
- Economic—rising fuel and congestion costs, wasted time, and resources.

Hence, transport can be regarded as a dominant factor leading to sustainable mobility. The European Commission has put intensive pressure on the EU member states, including Hungary, by validating a White Paper on the Roadmap to a Single European Transport Area. This White Paper recognizes the pillars as guidelines for EU member states such as the optimization of transport systems, alternative energy sources, alternative vehicles with zero-emission and the promotion of high-efficiency and low-emission transportation (The European Commison, 2011).

The Balázs Mór Plan – Budapest Mobility Plan – was ratified by the Budapest General Assembly in 2013 which indicated a sustainable vision for a sustainable mobility plan for Budapest. The policymakers have set very ambitious goals for Budapest regarding public transportation participants.

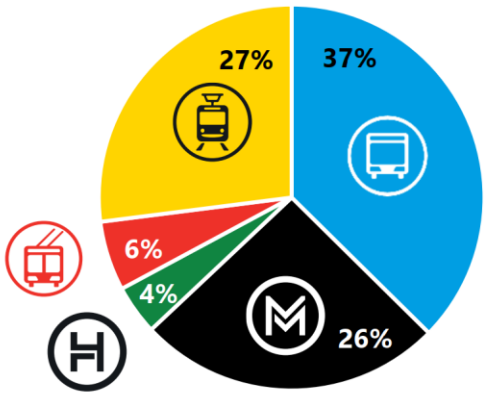
1. Table Estimated values of transportation in Budapest

	Public transport	Individual car	Walking	Cycling
2014	45%	35%	18%	2%
2030	50%	20%	20%	10%

Source: A Sustainable Urban Mobility Plan (2016)

According to BKK (2021), the most used public transports was divided respectively into bus, tram, metro, trolley and HEV (suburban railway).

1. Figure Usage of public transport in 2021



Source: BKK (2021)

1.2. RESEARCH QUESTIONS

1. What are the driving forces which influence the sustainable transport mobility in Budapest?
2. How do the driving forces influence the behavior of the city's public transport users?
3. How are the driving forces grouped?
4. What is baseline (most probable future) future or trend that we can detect from analysis?

1.3. DOMAIN DEFINITION

This study is designed to look into the most probable future for sustainable mobility. Linking mobility to sustainability will need to deeply involve the use and development of public transportation.

Sustainable mobility refers to the creation of facilities, amenities, technologies, and information which can enable the resilient continuation of access to goods, services and other economic activities in the most sustainable way. In this study, the most important factor is transportation as this is the key to the sustainability of mobility, according to scholars and supranational institutions like the EU (Mozos-Blanco et al., 2018; the EU, 2019, Melkonyan et al., 2022). In order to utilize the term "sustainable," factors should be taken into consideration in relation to environmental, economic and societal issues. In addition, technologies and political practices are also crucial additional factors contributing to the advancement of sustainability within mobility. The research will regard the perspective of students in Budapest as objective by investigating how they shape their viewpoint about transportation in general and public transportation in particular.

1.4. CURRENT ASSESSMENT

It is indispensable to say that the key stakeholders of this study are the students living in the city. This is due to the intensive exploitation of public transportation by students. The number of students employing public transportation keeps increasing because of the vast variations of scholarships and attractive program offers. Other stakeholders are the policymakers who are capable of influencing behavior and the effective usage of public transportation. The tools utilized by these stakeholders are policies and actions such as purchasing more low-to-zero emission vehicles or increasing the availability of public transportation, etc. These policies will be discuss as driving forces that drive the behavior of students. Regarding the mode of public transportation, BKK, which is the organization responsible for providing these modes of transport to the public, supplies many means of transportation. In this sense, this study will only opt for those forms of transportation employed by students, including buses, trolley buses, metro lines, tramways and HEV (suburban trains). Other services that could give more insight are cycling, shared car services like MOL, Bobi (public bicycle system) or Green Go and Share-now car sharing services. In 2017, Budapest 2024 (2017) is the non-profit organization sponsored by the Municipality of Budapest to envision Budapest as a smart city in 2030 with the extension of public transportation using sustainable mobility. In order to achieve this plan, the government decided to purchase more environmental-friendly buses in 2020 (About Hungary,2020), and they are being tested in the suburbs of Budapest (Hungary Today,2023).

1.5. METHODOLOGY

The researchers used several instruments to help them forecast the most plausible futures. These instruments where used to map change and illustrate the elements which may influence the future (Hines, 2017). This study's research methodology used the following steps for data collection:

1. A literature review was conducted and subsequently,
2. A PESTLE analysis was conducted and,
3. A focus group consisting of students was created.

To analyze the data the following steps were subsequently taken:

4. An importance and certainty graph was created and,
5. A SWOT analysis / futures wheel was conducted.

1.5.1. PESTLE ANALYSIS

The researchers used PESTLE analysis to conduct an external environmental analysis. According to Albalik and Citilai (2019) PESTLE analysis is a pivotal component of scanning the external business environment. These researchers further explain that the PESTLE analysis tends to focus on political, economic, social, technological, legal, and environmental factors. As part of this analysis, we investigated which factors (political, economic, social, and technological) may affect Budapest's urban mobility. The data was collected from existing literature and internet sources such as EU mobility strategy, Sustainable Urban Mobility Plan (2016); BKK (2021). Table 2 illustrates the various factors that were identified by the researchers.

2. Table PEST Analysis

Political	Economic	Social	Technology
The goal of Budapest municipal is to make the city become a compact city based on "short distances, walking and public transport"	Having more benefits such as tax haven to attract a higher number corporations	Number of people moving to Budapest is increasing significantly	Renovating roads To increase the railway Network
Attracting a higher number foreigners to Budapest because Hungarian skilled labor moving out of Hungary	Attracting a higher number of foreigners to Budapest because Hungarian skilled labor moving out of Hungary	Increasing the number of workforce due to a higher number of foreign companies moving to Hungary and Budapest specifically	Increasing environment-friendly mode of transport – Priority
The EU policy: mobility of people. This policy promotes the free movement of EU citizens amongst the member states. Policy attracts workers and students to study in EU	Salary in Hungary is low comparing to other EU countries	Salary in Hungary is low comparing to other EU countries	Increasing the amount of cyclist-friendly roads
The EU policy "low carbon Economy" and "innovation" has influenced Hungary and Budapest to increase the number of transport modes that are environmentally friendly	Creating a favorable environment for future generation	Public mobility is intensive from January – mid 12	The improvement of application for public transportation
Increasing the coverage of public transport	Number of people is increasing significantly	individual mobility	Increasing the capacity of parking facilities
Promoting walking	reducing health costs through healthy living	Increasing the awareness of water public transportation	Building parking facilities near public stations
The cooperation between different economic operators, local authorities, and training and research institutes	Ticket price stability	Increasing pedestrian accessibility	
The EU white paper encourages member states to adopt more sustainable mobility	Energy price stability	Increasing the amount of cyclist - friendly roads	Barrier-free means of transport
Internal conflict			

Source: Own compilation

1.5.2. FOCUS GROUP

The researchers used a focus group as another method to collect data for this study. A focus group provides researchers with the opportunity to analyze the opinions of different participants and gain information from them about the phenomenon being studied (Busetto, Wick & Gumbinger, 2020). Focus groups typically consist of six to eight people (CDC, 2018). For this study, six people who were students, residing in Budapest, and frequently use public transport, participated in the focus group. Before conducting the focus group, the researchers asked the research participants for permission to record the virtual meeting. The focus group had two sessions which took place over four hours online. The research participants joined the online meeting utilizing both their audio and video. In both sessions, the meetings were conducted and moderated by one of the researchers.

The topics which were discussed in the focus group were derived from the PESTLE analysis they conducted and from existing literature on the usage of public transport in Budapest. This study focused on public transport because according to the European Investment Bank Group (2022) it is used daily by students and employees, and it is considered an affordable alternative. Additionally, the European Investment Bank Group (2022) reported that the greenhouse emissions that were emitted from transport are continuously rising and account for approximately twenty-seven percent of the EU total emissions.

This study explored ten main questions: (1) How do you find public transportation in your area? (2) What means of transportation are you using mostly? (3) Which metro line, bus, tram do you use mostly? (4) On average how much time do you spend in public transport per day? (5) Are there challenges that you face when using public transportation? (6) What means of transportation do you prefer? (7) Are there any improvements that you would suggest? (8) How do you perceive the price of tickets for public transportation? (9) What are the advantages of using public transportation over personal transportation? (10) Does climate change affect your choice of transportation?

The results gathered from the online meeting were first transcribed verbatim, the researchers then used the transcription to:

1. Identify the different drivers which encouraged and discouraged the research participants to use public transport.
2. The drivers were grouped into categories (economic, technological, environmental, legal, political and social)
3. The researchers (coders) then had another meeting to discuss whether the drivers were in the correct categories.

In summary, the data that was collected was converted into ‘futures data’. This data was then used to create the drivers’ table.

Drivers and Themes

The drivers and themes table was used as a tool to analyse the data that had been collected through the focus group. By using this table, the researchers were able to group the data received into themes. Subsequently, this table also illustrated the level of importance and certainty the research participated allocated to the drivers that were identified by the research participants. The following section will discuss the results that the researchers acquired through the study, it will also answer the study’s research questions.

1. What are the driving forces which influence sustainable transport mobility in Budapest? The researchers conducted an in-depth literature review and a focus group. From the focus group the drivers were identified and illustrated in table three.
2. How do the driving forces influence the behavior of the city’s public transport users?

From the focus group the participants were asked to highlight their perceived level of

importance and certainty to the different drivers. Table three communicates the level of certainty and importance they thought each driver should have.

3. How are the driving forces grouped

The driving forces were grouped into different themes which were identified by the World Bank in 2020. The themes focus on sustainable mobility which are "universal access", "efficiency", "safety", and "green" to enhance the articulation and the interrelationship of the driving forces towards sustainable mobility. As Gallo and Marinelli (2020) claimed that "environmental", "socio-economic" and "technological" are factors which are associated with sustainable urban mobility. Hence the authors decide on the 4 pillars of sustainable mobility defined by the World Bank (2020) as these pillars are more inclusive. Table three illustrates how the different drivers are part of the different themes.

3. Table Drivers and Themes

Drivers	**Importance (0-10)**	**Certainty (0-10)**
universal access (social, technological)		
different modes of transportation are more connected and integrated	8	8
Accessibility of public transport increases	9	9
Road congestion is worsening	9	9
Public transports will be modernized	8	8
Metro line system will be repaired and maintained affecting the availability and schedule	9	8
Charging stations are extended and more available for electricity vehicles	8	9
Fuel stations are extended and more available for low-to-zero emission vehicles (hydrogen, biofuel)	8	9
Increasing in car sharing service provider and coverage (GreenGo - E-car service)	8	5
Public Health concerns are raising	8	8
Increasing the public choices of low-emission vehicles	4	5
Metro line system will be repaired and maintained affecting the availability and schedule	9	8
Raising awareness about consequences of choosing the mean of transportation	7	2
Increasing tax for using high-emission vehicles	9	9
Pressures from the NGOs and IGOs are increasing	8	8
Public bicycle providing services are made available in a wide coverage of location	8	7
English is gradually being made available in public transportation to reduce the language barriers	9	8
efficiency (economic)		
Ticket price is stable	10	8
Energy and fuel price increase	7	8
Prices of low-to-zero emission vehicles is high	7	6
Many Investment opportunities in alternative energy sources emerge	9	9
Investment in sustainable mobility infrastructure increase	9	6
Increasing and improving the capacity of parking facilities	6	3
Increasing tax for using high-emission vehicles	9	9
safety (political, social)		

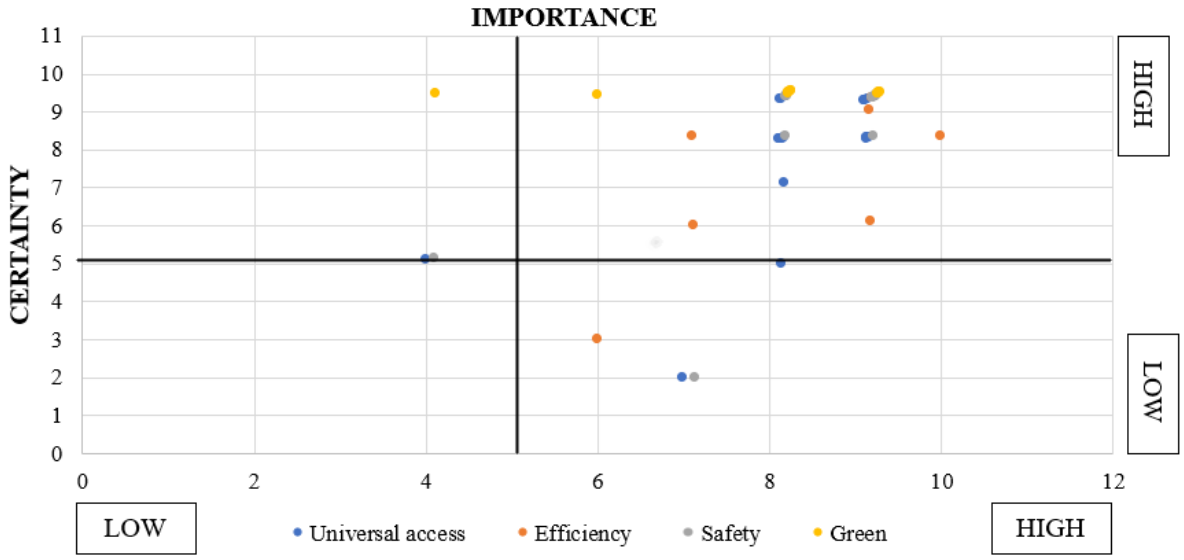
Accessibility of public transport increases	9	9
Road congestion is worsening	9	9
Public Health concerns are raising	8	8
Increasing the public choices of low-emission vehicles	4	5
Metro line system will be repaired and maintained affecting the availability and schedule	9	8
Raising awareness about consequences of choosing the mean of transportation	7	2
Increasing tax for using high-emission vehicles	9	9
Pressures from the NGOs and IGOs are increasing	8	8
Public bicycle providing services are made available in a wide coverage of location	8	7
English is gradually being made available in public transportation to reduce the language barriers	9	8
Increasing in car sharing service provider and coverage (GreenGo - E-car service)	8	5
Governmental policies are being discussed and implemented to support sustainable practices within transportation	9	7
green (environmental)		
Increasing and improving the capacity of parking facilities	6	3
Accessibility of public transport increases	9	9
Metro line system is extended	8	7
Road congestion is worsening	9	9
Increasing the public choices of low-emission vehicles	4	5
Many Investment opportunities in alternative energy sources emerge	9	9
Charging stations are extended and more available for electricity vehicles	8	9
Fuel stations are extended and more available for low-to-zero emission vehicles (hydrogen, biofuel)	8	9
Investment in sustainable mobility infrastructure increase	9	6
Increasing in car sharing service provider and coverage (GreenGo - E-car service)	8	5
Public bicycle providing services are made available in a wide coverage of location	8	7

Source: Researchers own compilation.

1.5.3. IMPORTANCE AND CERTAINTY ANALYSIS

The importance and certainty graph was created to help analyse the drivers that were identified by the focus group according to their level of importance and certainty.

2. Figure The drivers that are part of the importance and certainty graph



Source: Researchers' own compilation

Figure 2 illustrates the certainty and importance of all drivers. Using this chart, the authors could identify the visible significant drivers that would be focused on by society in the future. These drivers have a high rate of certainty and a high rate of importance. The drivers that have a high certainty and a high importance were then conveyed to table 4. The drivers that are illustrated in table four were used to create the baseline future for the mobility of Budapest.

4. Table Drivers that have high importance and certainty.

Drivers	**Importance (0-10)**	**Certainty (0-10)**
universal access (social, technological) (13)		
different modes of transportation are more connected and integrated	8	8
Accessibility of public transport increases	9	9
Road congestion is worsening	9	9
Public transport will be modernized	8	8
The Metro line system will be repaired and maintained affecting the availability and schedule	9	8
Charging stations are extended and more available for electricity vehicles	8	9
Fuel stations are extended and more available for low-to-zero emission vehicles (hydrogen, biofuel)	8	9
Public Health concerns are raising	8	8
Increasing tax for using high-emission vehicles	9	9
Pressures from the NGOs and IGOs are increasing	8	8

Drivers	**Importance (0-10)**	**Certainty (0-10)**
Public bicycle providing services are made available in a wide coverage of the location	8	7
English is gradually being made available in public transportation to reduce the language barriers	9	8
efficiency (economic) (6)		
The ticket price is stable	10	8
Energy and fuel price increase	7	8
Prices of low-to-zero emission vehicles are high	7	6
Many Investment opportunities in alternative energy sources emerge	9	9
Investment in sustainable mobility infrastructure increase	9	6
Increasing tax for using high-emission vehicles	9	9
safety (political, social) (10)		
Accessibility of public transport increases	9	9
Road congestion is worsening		
Public Health concerns are raising	8	8
The Metro line system will be repaired and maintained affecting the availability and schedule	9	8
Increasing tax for using high-emission vehicles	9	9
Pressures from the NGOs and IGOs are increasing	8	8
English is gradually being made available in public transportation to reduce the language barriers	9	8
Governmental policies are being discussed and implemented to support sustainable practices within transportation	9	7
green (environmental) (9)		
Accessibility of public transport increases	9	9
The Metro line system is extended	8	7
Road congestion is worsening	9	9
Many Investment opportunities in alternative energy sources emerge	9	9
Charging stations are extended and more available for electricity vehicles	8	9
Fuel stations are extended and more available for low-to-zero emission vehicles (hydrogen, biofuel)	8	9
Investment in sustainable mobility infrastructure increase	9	6
Public bicycle-providing services are made available in a wide coverage of the location	8	7

Source: Researchers' compilation

Figure two was constructed to illustrate the study's drivers and to identify which drivers had high importance and high certainty. The drivers that had high importance and high certainty were then used to identify a possible trend of what could happen. Additionally, it was used to forecast the city's baseline 'most probable' future. Drawing from the figure it was most likely that every driver that was of high importance and high certainty in the future would have an impact on Budapest's sustainable mobility. In addition to figure two, table four, named all the drivers that had a high importance and high certainty. From analyzing Table 4 it was concluded that the largest number of elements that were going to influence the city's baseline future are going to be derived from the 'universal access' category.

1.6. BASELINE FUTURE

The drivers that occur most frequently among all four categories included: “accessibility of public transport increases”, “road congestion is worsening”, “metro line system will be repaired and maintained affecting the availability and schedule”, “fuel stations are extended and more available for low-to-zero emission vehicles (hydrogen, biofuel)”, “increasing tax for using high-emission vehicles”, “Pressures from the NGOs and IGOs are increasing”, “many investment opportunities in alternative energy sources emerge”, “investment in sustainable mobility infrastructure increase”. These drivers are most likely happening now based on the perspectives of the focus group and analysis. Accessibility of public transportation refers to increasing the network, to enable more people to access it. Road congestion is worsening because of the increase in the population regardless of nationality which promotes the use of personal vehicles. The situation has already been harsh, especially during rush hours. “Metro line system will be repaired and maintained affecting the availability and schedule” is another important driver because the metro systems are being maintained consistently. One iconic example is that all the stations of M3 have been reopened again. This driver is intersecting with the driver “accessibility of public transport increases” due to its impact on accessibility. In the future, these systems will be kept maintained. “Fuel stations are extended and more available for low-to-zero emission vehicles (hydrogen, biofuel)” will be a hot topic in the future. Moreover, tax on high-emission vehicles increasing will be the key to demotivating people from using personal cars due to environmental issues. Alternative transportation in this sense is to motivate people to use public transport. The rise in electricity and low-emission transportation especially personal vehicles is visible and will be strongly promoted. Following this trend, these fuel stations will be in high demand if society needs to shift its use of personal vehicles. The two factors related to investments are on track for their implementation. Fundamentally, in order to achieve sustainability in transportation leading to more sustainable mobility, domestic investment, and FDI are most likely the key to enhancement. Hungary will focus on accelerating and attracting more investment which will be dedicated to the green and efficient aspects of sustainable mobility.

1.7. SWOT ANALYSIS

In order to consider the viability of the baseline, it is important to analyze this future by using the SWOT tool. The government of Queensland, Australia (2022) claimed that one of the best instruments for decision-making is a SWOT analysis, which offers a vision of the internal and external environment affecting the future.

	Strengths	Weaknesses
Internal	- The number of investments in infrastructures and environmental-friendly vehicles is increasing. - Significant support from society and the government. - The promotions for the use of low-to-zero emission vehicles and public transportation are stronger than in the past indicating the commitment from citizens and the government. - Creating a new market with more fair competition with new products. - One of the strengths of city's public transport is its wide network throughout the city.	- Political instability is caused by internal conflicts between local authorities and the government. - Taxation issues especially increasing tax on high-emission vehicles will cause dissatisfaction among citizens. - The average wage of Hungarian citizens is still low, making it impossible to afford environmental-friendly vehicles.
	Opportunities	**Threats**
External	- Multiple options for support in terms of policies and funds from the IGOs such as the EU or the European central bank, etc. - FDI flow will increase, especially for green investments. Hence, sustainable mobility will be beneficial. - MNE encourages the development of infrastructure. - The development of more civil organizations such as the Hungarian cycle club.	- Pressures from IGOs and NGOs might cause internal and external conflicts which will delay innovation and the development of sustainable mobility. - The different criteria from different institutions, especially investments do not match with the national capacity. - The increase in the inflation rate and global conflicts might destabilize the price and decrease people's spending.

CONCLUSION

The density of Budapest is heavy in districts in, or near the city centre where firms and tourists gather, and the population residing in the area is high (Pintér & Felde, 2022). Nevertheless, the reasoning of the participants is reasonable. The number of international students is increasing every year. The Tempus Public Foundation (2018) reported that there is a significant number of international students residing in Budapest. Combined with the rental price, accommodation could be transiting to the suburbs near Budapest. Hence, it is required that the public transport system be developed to integrated and extended also to include the drivers "The cover of public bicycle providing service". Financial aspects like the price and stability of tickets must be maintained as this is a most attractive price, especially when comparing Budapest to other capital cities. Looking at the environmental and societal aspect, drivers such as "Public Health concerns" indicate the awareness of how the environmental issues affect the public health in general. And Pressures from NGOs and IGOs, which are also one driver, will increase on the government in order to push forward sustainable mobility. This could be translated as Budapest has many bus lines with very old vehicles. Hence, the responsibility of the government is to extend its support by investing in alternative energy sources and in sustainable mobility

infrastructure which could be based on a form of Public-Private Partnership. These drivers also have a very high score of certainty. Sustainable mobility should be composed of the PESTLE factors including Politics, economics, society, technologies, legal, and environmental aspects. The highest tendency detected is the research and application of new technologies on public transportation. This could create an environment that supports sustainable mobility in the future. Despite several elements that might be obstacles from the perspective of the focus group, these driving forces are certainly happening. Pressures from society, and politics, especially from the EU institutions and other member countries, will make the Hungarian government and Budapest municipality jointly push these essential drivers. These drivers have the nature of sustainability demonstrated in three spheres which are economics, society, and environment. Budapest is on the right track to develop sustainable mobility within the city. This is important as it will not only be beneficial on the societal side but will also attract more foreign direct investments. As a city linking the Western EU and the Central–Eastern EU, this will open many opportunities for Hungary in general and Budapest in particular.

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