



**Youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services
during and post-COVID period in the district of Vhembe, Limpopo Province, South Africa**

By

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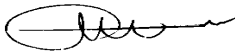
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2024

DECLARATION

I Mabina Karabo Suzan (15015241), hereby declare that this thesis for the degree of Doctor of Philosophy in Gender Studies at the University of Venda, hereby submitted by me, has not been previously submitted at this institution or any other institution and that this is my own work in design and execution. All reference materials contained herein have been duly acknowledged.



02 July 2025

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Signature

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Date

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DEDICATION

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Abstract

The outbreak of the COVID-19 pandemic held the whole world captive, with many businesses losing their operations. E-hailing transport services were no exception to the challenge. The COVID-19 pandemic has changed the face of transport services and underscored disparities in their provision. On the other hand, the pandemic seems to have opened the door for new and expanded business opportunities in the E-hailing transport services that seem to be thriving. This study seeks to uncover youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period. The window period for this study is between 2019 and 2023, during COVID and post-COVID. Through a qualitative approach, this study explored Youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Limpopo Province, South Africa. The study uses the empowerment theory and some feminist theories as guiding tools to understand the participation of women in this business venture. These theories are the standpoint theory and the Masculinity theories. The study adopted a qualitative research approach to gather in-depth information on e-hailing transport services. The exploratory research design was used to expose Youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services. A non-probability purposive sampling method was used to select youth from the age group of 18-35 in the E-hailing transport service sector. The thematic analysis method was adopted in the study to identify patterns of E-hailing services that provided answers to the research questions. Ethical considerations were ensured in the study to ensure that participants were not harmed. The findings of the study are, among others, the lack of safety and restrictions on travel, as well as the highest levels of unemployment, which resulted from the closure of many companies due to the pandemic. The study's findings show that there is a prevalent gender wage gap which is often linked to differences in driver experience and productivity. Barriers to women's participation in the transport sector are present within each stage of the employment lifecycle, including in relation to women's attraction, recruitment, and retention; policies and practices in the workplace; and leadership and career progression. Legal approaches to enhance women's participation in e-hailing services should focus on creating safer and more equitable environments for both drivers and passengers. This includes addressing gender-based violence, promoting equal pay, and ensuring robust legal protections against harassment and discrimination.

Keywords: COVID-19, E-hailing, Entrepreneurship, Public transport, Ride-hailing, Transport services, Youth, Youth entrepreneurship

ABBREVIATIONS AND ACRONYMS

USA	United States of America
WHO	World Health Organisation
PSV	Public Service Vehicle
UK	United Kingdom
ICT	Information and Communications Technology
CCMA	Commission for Conciliation, Mediation and Arbitration
GTA	Greater Toronto Area
SMEs	Small and Medium-sized Enterprises
PSV	Public Service Vehicle
DOS	Department of Statistics
TNCs	Transportation Network Companies
IoT	Internet of Things
DIT	Diffusion of Innovation Theory
TAM	Technology Acceptance Model
PU	Perceived Usefulness
PEOU	Perceived Ease of Use
NYDA	National Youth Development Agency

TNCs	Transportation Network Companies
MTM	Ministry of Transport Malaysia
SEUK	Sharing Economy UK
ITS	Intelligent Transportation System
IIT	Indian Institute of Technology
CPUC	California Public Utilities Commission
TNC	Transportation Network Companies
VAR	Vector Autoregression
CBP	Customs and Border Patrol
BTS	Bureau of Transportation Statistics
SEIR	Susceptible-Exposed-Infected-Removed

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1. Introduction and Background of the Study

This chapter covers the introduction and background of the study, problem statement, aim, and objectives, research questions, the significance of the study, delimitation of the study, and the definition of concepts. The study explores youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Limpopo Province, South Africa.

The world has been held captive by the COVID-19 outbreak, and countries have been trying to stop its spread (Ghinai, 2020). All ages were affected by COVID-19; however, the risk was higher in the elderly and in patients with pre-existing conditions, including diabetes, cancer, chronic respiratory diseases, or cardiovascular diseases. In addition to the loss of life and sickness, there have been significant financial losses, business closures, job losses, and severe interruptions of educational, religious, cultural, and social activities (WHO, 2021). The COVID-19 virus can evolve, which appears to raise the possibility of further deaths and diseases in addition to a serious economic downturn. As a result, on March 11, 2020, the United States declared it a global public health emergency because it had a profound effect on many people's lives and caused challenges for medical personnel because of an increase in hospitalizations (Keni *et al.*, 2020). Worldwide, both corporate and individual initiatives were taken to resolve the COVID-19 problem. Governments created regulatory measures to reduce the possibility of corona/virus transmission from person to person (Daniels & Turcic, 2023). Extensive travel restrictions, stay-at-home directives, social segregation, temporary closures of schools and some commercial sectors, mask wear, sanitization, and the protection of vulnerable persons were all implemented by numerous national governments. To prevent the coronavirus outbreak from spreading, lockdown measures limited people's movement in local and regional areas while allowing only essential services to continue.

E-hailing services, while initially gaining significant popularity have experienced a decline in patronage due to factors like increased competition, price wars, and offer comparable services at lower prices, and the rise of alternative transportation options like ride-sharing and public transit

has also impacted the e-hailing's market share (Keni *et al.*, 2020). In recent years, e-hailing services have transformed the transportation landscape in South Africa. With just a few taps on a smartphone, passengers can now summon a ride from the comfort of their homes, making getting around more convenient than ever before. E-hailing gained popularity in South Africa in the early 2010s with the introduction of companies like Uber and Bolt (Ghinai, 2020). These platforms have quickly become household names, offering a reliable alternative to traditional taxis. The convenience of cashless payments, real-time tracking, and the ability to rate drivers has made e-hailing a preferred choice for many South Africans (Chen *et al.*, 2020). With the digital and knowledge-based economy becoming the trend, innovation happens fast due to the interaction between mobile Internet technology and business platforms, in terms of which, e-hailing becomes a good example of the "Internet Plus Transportation" model, reshaping the traffic service market.

While transportation is a vital component of city life, the travel needs of men and women differ from each other. Studies show the inequality between men's and women's mobility opportunities (Sattari, 2021). The complexity of transportation modes is positively correlated with the complexity of networks that connect urban dwellers within a city and between towns through social and economic interactions. Traditional public transportation planning seems to serve men's needs better than women's (Wright, 2018). The ride-hailing systems increase women's physical mobility by making different parts of the city more accessible at a higher cost. From the point of view of women, these systems might be advantageous and empower them. Women, nevertheless, are not a homogeneous group that has the same opportunities and resources in life. According to the statistics, 93.3 percent of U.S. households had access to at least one vehicle in 2019 (Rosen & Nofziger, 2019). Also, there are 227,254,100 licensed drivers in the US, and 50.6 percent of them are female. California has the highest number of people with driver's licenses compared to its population; 84 percent of 26 million Californians have a driver's license (Ng & Acker, 2020).

Women's participation in a traditionally male-dominated sector, such as driving to make a living, is a barrier that is hard to break. The statistics show more female ride-hailing drivers than there are female taxi drivers in the US (Sattari, 2021). This difference in the sex composition of jobs in private mobility services likely happens because unregulated ride-hailing systems and regulated taxis provide different job opportunities to their drivers. The unregulated gig work leaves its workers outside of the essential employee benefits, such as minimum wage and health benefits

(Ng & Acker, 2020). Furthermore, it provides time flexibility as it allows its drivers to choose the times and days they wish to work. Women's economic empowerment includes their ability to participate equally in existing markets. Despite advancements in education and income, the gender gap in the economy remains (Rosen & Nofziger, 2019). Although the participation of women in the sharing economy model of the private mobility sector is higher than in the classical personal mobility systems, women are still a minority compared to men in the industry (Bhana et al., 2021). However, the gender distribution of labor is more balanced in the sharing economy models than in the traditional models. This alternative can be a way to welcome women in this male-dominated sector.

In the United States, E-hailing services like Uber and Lyft have become a significant source of income for many, offering flexible work arrangements and a way to supplement or replace traditional employment (Mao *et al.*, 2020). These platforms have reshaped urban mobility, providing convenient and affordable transportation options. The ride-hailing industry has seen massive growth in Western societies, especially in the United States. This success has led to the widespread adoption of app-based taxi services globally, including in Western and Central Europe (Wilmoth, 2020). Beyond the rapid development of Uber and Lyft, ride-hailing services have had significant societal impacts. The convenience and accessibility of ride-hailing services provide access to private vehicles.

The increased mobility also leads to benefits such as increased local spending and government revenue, and this has suddenly become the major entrepreneurial source for youth (Verbergt & Schechner, 2019). However, the increased popularity of ride-hailing has also created drawbacks, as its emergence is a significant factor in the decline of taxis and car rentals. Over the past few years, ride-hailing services have rapidly gained in popularity and grown extensively in the United States (U.S) (Wilmoth, 2020). The ride-hailing market in the United States is expected to see a considerable rise in revenue in the coming years. The ride-hailing services in the United States have seen a rise in demand due to the pandemic, with consumers preferring private transportation options. It is also worth noting that China is expected to generate the highest revenue in this market globally, with a projected revenue of US\$64bn in 2025 (Clark, 2020).

In China, The E-hailing platform has shaped a new travel service market. The E-hailing platform, under the participation of capital, can cultivate the economic habits of both the supply and demand sides through subsidies, quickly reach the basic market capacity required for the platform's economic development, and change the life cycle of the Internet platform enterprises (Wilmoth, 2020). From the perspective of matching expansion, the E-hailing platform is based on its own diversified elements, and conducts rapid trial and error to achieve continuous and incremental innovation in business development (Hossain, 2021). From the perspective of matching monopoly, the E-hailing platform has the characteristics of bilateral market, and it is easy to form a monopoly position of winners, but the implementation of mandatory monopolistic behaviour will pose a threat to the diversity elements on which the platform depends, so the E-hailing platform itself not have incentive to implement monopoly (Clark, 2020). Instead, capital is induced and pressurized by the monopolistic behaviour of the platform under the stimulation of profit. As an economic organization, the E-hailing car platform undertakes the social functions of urban quasi-public transportation supply and coordination. For travellers, more travel options are available. For urban traffic managers, platform-making rules organize loose and diverse market elements and reduce the cost of managing individuals (El Financiero, 2019). They do not rely on government subsidies and enrich the supply market through marketization.

E-hailing gained popularity in South Africa in the early 2010s with the introduction of companies like Uber and Bolt (Roa *et al.*, 2020). These platforms have quickly become household names, offering a reliable alternative to traditional taxis. The convenience of cashless payment, real-time tracking, and the ability to rate drivers has made e-hailing a preferred choice for many South Africans. One of the key factors driving the rise of e-hailing services is urbanisation (Hossain, 2021). As more people move to cities like Johannesburg, Cape Town, and Durban, the demand for efficient transportation options has surged. E-hailing services have stepped in to fill this gap, providing easy access to rides at all hours of the day and night (El Financiero, 2019). Moreover, e-hailing has introduced a level of flexibility that traditional taxi services often lack. Passengers can choose their preferred type of vehicle, from economical options to luxury rides, catering to various budgets and needs. This flexibility is particularly appealing to younger generations who value choice and convenience.

However, the rise of e-hailing services has not come without challenges. Traditional taxi drivers have raised concerns about competition, leading to protests and calls for regulation (Bautista-Hernández, 2020). The South African government has been working to create a framework that balances the needs of both e-hailing services and traditional taxi operators, aiming to ensure fair competition and safety for all users (Daniels & Turcic, 2023). Despite these challenges, the future of e-hailing in South Africa looks promising. As technology continues to evolve, we can expect innovations such as electric vehicles and enhanced app features that will further improve these e-hailing experiences. The ongoing demand for convenient and safe transportation options suggests that e-hailing services will remain a vital part of South Africa's transportation system for years to come (Roa *et al.*, 2020). The rise of e-hailing services has reshaped how South Africans travel, offering a modern solution to urban mobility challenges. With their growing popularity, these services are set to play an increasingly important role in the country's transportation landscape.

Governments in pandemic-affected nations encouraged people to avoid unnecessary travel for non-essential goods and purposes, which led to a sharp decline in the usage of both private motor vehicles and public transportation (Beck & Hensher, 2020). There were fewer passengers travelling from one location to another, which caused changes in the transportation sector due to mobility restrictions. The important requirement to maintain physical separation and follow safety and hygiene precautions had an impact on the capacity of these services. Early in April 2020, compared to pre-COVID-19 days, everyday public transportation use was routinely 80 percent lower (Fabeil *et al.*, 2020). Bus and minibuses services, which carry large numbers of passengers, were impacted by this. Even though they carry a few people, transportation services have become necessary and relevant. Private taxis that carry one or two passengers entered into widespread use in metropolitan regions as well as some rural ones (Puriwat *et al.*, 2021). Contrary to towns and cities with street infrastructure, poor, rural communities were neither expected nor capable of supporting private taxis. Many businesses have recently resumed operations as the economy works to recover from the COVID-19 outbreak, and travel is anticipated to grow as a result. Ride-hailing services have gained popularity in South Africa because of their ability to provide a reliable alternative to traditional modes of transport.

Prior to COVID-19 in South Africa, the transportation sector would handle numerous people on a single trip (Phun & Yai, 2020). For instance, buses could carry up to 70 to 75 passengers at once,

minibus taxis could carry up to 15 passengers, and trains and aeroplanes could accommodate more than 500 passengers. Due to the pandemic, the available transportation options were limited to small groups or individuals (Abdullah *et al.*, 2020). There are various drawbacks to using public transportation, including taxis, buses, trains, and aeroplanes, particularly during the COVID-19 pandemic. Travelling in buses and taxis can be slower than using a personal vehicle due to strictly enforced speed limitations. The prices have a modest ceiling and are subject to change. Another issue is that travellers may get COVID-19 and other diseases during this worrying period of the epidemic, since extra cleanliness is not practised. It was necessary to develop transportation methods that could comply with COVID-19 requirements and provide enough room for social distancing by carrying a single person rather than a sizable group of people due to the necessity for safety and dependability.

The COVID-19 lockdown has had a significant impact on numerous transportation-related corporate operations and has had additional impacts on the worldwide economy (Giones *et al.*, 2020). Regulations pertaining to certain industries, which covered the provision of transportation services in general, were added to restrictions on the movement of persons and commodities. The COVID-19 epidemic has altered the nature of transportation and highlighted inequalities in its delivery. It has impacted all types of transportation, including private vehicles, urban public transportation, as well as domestic and international buses, trains, and aeroplanes (Rasca, Markvica, and Ivanschitz, 2020). The transportation sector is now dealing with several difficulties, such as adverse economic conditions, which are reflected in decreased levels of consumer discretionary expenditure and the resulting margin pressure on the sector as a whole.

The COVID-19 epidemic appears to have had the most influence on youth entrepreneurship in the E-hailing transportation sector, especially women (Giones *et al.*, 2020). Integration of young people into society and the economy has been a problem even before the crisis started. Youth entrepreneurship may have been negatively impacted by COVID-19 issues, but some of them appear to have a positive effect and serve as a catalyst for growth by opening new opportunities in the transportation sector (Gkiotsalitis and Cats, 2020). To reduce youth unemployment in the nation, encouraging young people to start businesses in the transportation sector could help create jobs, reduce poverty, and boost the economy. Women can also benefit more if they are allowed to equally participate in this lucrative business. The COVID-19 pandemic appears to have created

opportunities for new and expanded economic ventures as customers adjust to the pandemic. Youth can explore pursuing several specialised industries and digital spaces during the pandemic, such as e-hailing transportation services that provide opportunities for self-employment.

E-hailing, also known as ‘ride hailing’, refers to the practice of establishing a connection between a passenger and a driver using an application software that can be downloaded from the internet through computers and smart devices (Rayle *et al.*, 2016). Users of E-hailing services can make a precise online transport request from their mobile device and receive a lift in a matter of minutes. For drivers and passengers to control and receive transportation services, e-hailing transportation services function online through a smartphone application (Aloi *et al.*, 2020). To put it another way, their platform technology links passengers with drivers to facilitate their travel. The passenger must enter their information on the app, pick their location, and select a vehicle to request a drive. At least four passenger seats can be accommodated by E-hailing services. However, clients appear to prefer one passenger each journey when using e-hailing transportation services. The fact that the rides cater to individual interests rather than group interests and allow passengers to choose their own travel times is a benefit for them (Daniels & Turcic, 2023). E-hailing firms like Bolt appear to have given young people jobs driving people to and from their preferred destinations.

Bolt is Europe's first mobility super-app, providing a better alternative to every service provided by a private car, including ride-hailing, shared cars and scooters, and food and grocery delivery, when looking at first-world countries such as Europe (Jenelius & Cebecauer, 2020). Bolt, founded in 2013 by Markus Villig, has over 150 million customers and 3 million in over 45 countries. According to Bolt (2013), it is dedicated to reducing the environmental impact of mobility and neutralizing the carbon footprint by supporting sustainable projects worldwide. Bolt is the leader in the South African ride-hailing industry. It has been 10 years since Bolt started its journey in the ride-hailing industry and it has been an incredible one. With over 40,000 driver partners in 23 cities across the country (Ghosh, 2020). Bolt’s commitment to providing safe and reliable transportation services has allowed it to become the go-to option for millions of customers. Since launching in Johannesburg in 2016, Bolt has leveraged its footprint and spread beyond ride-hailing, partnering with restaurants to launch Bolt Food in Cape Town and Johannesburg in 2021 (Brough, Freedman, and Phillips, 2021). This was ensured to take things to the next level, and working hard to make sure customers get delicious meals delivered to their doorsteps.

Coming to a third-world country such as South Africa, Bolt introduced a new audio trip recording safety feature that allows both drivers and passengers to record audio during their trip (Bolt, 2023). It was brought for them to feel safe and make it easy to report the recorded audio to the customer support team, who will take swift action to address any safety concerns. The aim of this initiative is to show Bolt's dedication to implementing safety measures on its platform (Mlambo, 2023). Users can activate it while their Bolt trip is in progress to use the audio trip recording feature. The recorded audio can be shared with customer support as evidence in a safety case. Initially, this feature was made available in specific cities in South Africa, and users had to update their Bolt app to access it (Naidoo, 2023). This new feature was an addition to Bolt's existing safety measures for passengers and drivers, making their in-app safety toolkit stronger. Bolt aims to provide all users with a secure and reliable transportation experience by continuously investing in safety improvements.

Over the last few years, ride-hailing services in South Africa have seen significant growth (Mlambo, 2023). However, several concerns plague the industry, including safety issues, the lack of a regulatory framework and drivers crying foul over low wages. Bolt along with government shared some their experiences across other African and global markets, and how measures by government can unlock earning opportunities for young people (Naidoo, 2023). It can be said that Bolt believes that government can create the platform for standards and streamlined processes that support licensing conditions, where young people and women can have a pathway for professional driver permits and licensing conditions. Ensuring ride-hailing is recognised as a distinct and standalone mode of transport, bolt strongly believe this will enable the sector to grow, and create economic opportunities for thousands of drivers, as well as provide an alternative mode of transport for people.

Over the years, Bolt drivers have been targets of violence at the hands of criminals and metered taxi operators, who accuse them of “stealing” their customers (Rangel *et al.*, 2022). There have also been many reports of passengers accusing E-hailing drivers of various crimes, including theft and sexual assault. The past few years have seen E-hailing drivers and operators from Bolt, Uber, and InDrive hold nationwide protests, urging the government to intervene by signing the National Land Transport Amendment Bill, which has been updated to accommodate the E-hailing service

industry, among other changes (Bolt, 2023). The Bill stipulates that E-hailing companies must introduce strict vetting procedures to ensure drivers do not participate in criminality. It also ensures E-hailing firms are subject to relevant transport regulations and will pay fair wages and provide better working conditions for all drivers and operators.

Bolt, as a company in general, has come with a strategic focus that is focused on security features for the riders (Mlambo, 2023). This includes the commitment to increase women drivers on the platform, and for women riders to have an option to choose a female driver for their trips. They are going to be increasing the number of women drivers for women riders, for purposes of choice and safety assurances. The level of abuse against women in SA is high. Companies like E-hailing services must be safe spaces for them to use. Since the birth of the e-hailing sector in South Africa, the market has been embedded with duality, in the form of successes and challenges. The E-hailing sector has had its fair share of wins and losses from providing convenience when one needs it, to being at the centre of criminal syndicates preying on women.

Since Bolt's arrival in SA, there has been an introduction of safety interventions that created regulations that improved safety standards for both driver partners and customers (Saeidizand *et al.*, 2021). These include the Professional Driving Permit issued to drivers by local authorities, a police clearance certificate and the recently introduced Bolt Driver Selfie Verification feature, to combat driver impersonation on the app (Wang & Noland, 2021). Additionally, the bolt vetting process for drivers includes professional licence clearance by SAPS on traffic transgressions, and Bolt conducts background crime checks of drivers. To be honest, the work at Bolt is very demanding. Operating in a highly competitive and fast-developing industry like ride-hailing, one can never know what might happen in a month, week, or even a day (Wilmoth, 2020). That is why Bolt literally launches new products in less than a month. This requires quick adjustment and resilience from the team (Gan *et al.*, 2021). It is not always possible to leave work at 5 pm, but Bolt team members are given a lot of freedom. Bolt trust its people to get things done, be it by working 4h per day or sometimes going the extra mile and staying in office for a 12h marathon, works for the person and the teams surrounding them (Gan *et al.*, 2021). There is also an opportunity to do a restart to one's brain from time to time, either challenging someone in a game, playing music or taking a break in the kitchen. In the end, it is all worth it because there seems to

be no other tech company that has recently grown at such a speed, offering so much responsibility, growth, and international experience.

Regulation concerns have been highlighted by the e-hailing industry's explosive growth as a subsegment of the transportation sector, both in terms of the companies (competition and legally between companies and drivers) and the drivers (labour categorization, worker rights, and tax treatment) (Flores and Rayle, 2017). Additionally, there may be a serious issue with the e-hailing industry's lack of targeted regulation. For example, in the United States of America (USA) and other developed nations, big businesses in the E-hailing sector were able to ignore rules that are relevant to the metered taxi sector (Flores & Rayle, 2017), resulting in major competition policy difficulties. These rules, which serve as entrance hurdles into the metered taxi business, mostly take the shape of licensing requirements and health and safety laws. Taxi unions have thus decried the lack of comparable restrictions for ride-hailing services in several places throughout the world (Tang *et al.*, 2020).

The lack of regulation effectively removes barriers to entry and creates an unfair advantage for the ride-hailing industry (Puriwat *et al.*, 2021). Although the metered and minibus taxi industry in South Africa is different from the USA and other developed countries in terms of structure and regulation, the same issues exist. The introduction of ride-hailing services in South Africa quickly led to contention between taxi unions and the government, protests by taxi-industry workers, and acts of violence by minibus taxi drivers against ride-hailing drivers, which persisted for several years (Burke, 2017; Dlamini, 2018). However, it is anticipated that the most recent proposed amendment to South Africa's National Land Transport Act in 2020 is likely to ease tensions between the minibus taxi and ride-hailing sub-industries.

The National Land Transport Amendment Bill also promised to implement new laws for the South African ride-hailing industry and levy fines for non-compliance to promote fairness within the sector and increased safety for ride-hailing consumers (Tang *et al.*, 2020). The possibility for criminals to utilise E-hailing platforms for criminal activity is another difficulty facing the ride-hailing industry in South Africa, one that is much more difficult to police (Sasidharan *et al.*, 2020). Drivers with Bolt are accused of abducting, robbing, sexually assaulting, or killing passengers on several instances (Puriwat *et al.*, 2021). In response, E-hailing businesses say that they take every

measure to screen and evaluate candidates before recruiting drivers and should not be held legally accountable for drivers' criminal behaviour.

Furthermore, the law frequently favours the ride-hailing businesses in this area because drivers are not officially employed by them. In the industrialised world, ride-hailing services also put public transit modes, including buses, trains, trams, and subways, at risk of competition. Clewlow and Mishra (2017) found that a sizable proportion of users switched from ride-hailing services to light rail (trams and subway trains) and bus services in a survey spanning seven major US cities. Puriwat *et al.* (2021) found that ride-hailing services supplemented commuter train services, and they contend that when designing public transportation networks, city planners, regulators, and policymakers should be cognizant of these changes in consumer behaviour. The public sector has started working with ride-hailing companies in some places, according to research by Ganapati and Reddick (2018), which could reduce the number of public transit options that compete with ride-hailing services.

As a result, it appears that these difficulties pose a serious threat to young people's ability to continue their new businesses in the E-hailing sector during the pandemic (Puriwat *et al.*, 2021). Despite this, creative policies and methods can be used to take advantage of several opportunities in the E-hailing transportation sector. Understanding and assisting young entrepreneurs using e-hailing services in terms of their potential, motivations, and constraints is necessary to lessen the impact of the problem. This can help them become more entrepreneurial and improve their abilities in the E-hailing industry. It can also help identify business gaps that could be filled during and after the COVID-19 pandemic. As a result, the critical question is whether E-hailing services will result in long-term change in terms of sustainability and job creation.

According to Clewlow & Mishra (2017), many Americans are using E-hailing services like Bolt, Uber, and metered taxis instead of buses, cabs, and railroads. The survey also found that when it comes to consumer behaviour and the planning of public transit networks, regulators and legislators take E-hailing services seriously. However, Ganapati and Reddick (2018) discovered that since the use of public transportation has gradually declined, there is no collaboration or

partnership between the public sector and E-hailing companies. E-hailing is expanding as well in the services provided by the transportation sector. Regulation-related worries have been expressed about drivers, including skilled and unskilled labour, worker rights, and taxation, as well as organizations that deal with competitiveness and legal issues between businesses and drivers (Flores & Rayle, 2017). A significant issue may be the absence of focused regulation of ride-hailing in the transportation sector. Given how major E-hailing businesses in the United States of America (USA) have managed new transportation rules, there has been tremendous rivalry and regulatory concerns. These restrictions, which mostly take the form of licensing requirements and health and safety standards, act as a barrier to entry into the metered taxi industry.

Numerous American communities and taxi unions have expressed their displeasure over the lack of regulations governing E-hailing firms (Nicola *et al.*, 2020b). The absence of regulations makes it tough to get started and gives the ride-hailing company an unfair edge. The expansion and success of ride-hailing services are probably influenced by South Africa's dearth of accessible and dependable public transportation. Uber and other E-hailing services have produced a practical and secure substitute for the restricted possibilities of public transportation (Henama & Sifolo, 2017). They provided examples of how Bolt has affected South Africa's transportation sector. Additionally, Bolt is now developing affordable transport choices, adding to their current suite of E-hailing services, in locations where buses, trains, and taxis are still prohibitively expensive and the only options for many customers.

According to Berger *et al.* (2018), despite having lower incomes than other workers, drivers report higher levels of job satisfaction. E-hailing has created a platform where drivers may earn a good livelihood in a pleasant workplace. This is partly because they have more flexibility. The South African unemployment problem has prompted this investigation. In terms of organization and regulation, the metered and minibus taxi sector in South Africa is distinct from that in the USA and other nations (Vaccaro *et al.*, 2020). On the other hand, E-hailing businesses guarantee that they take all reasonable precautions to screen and evaluate applications before hiring drivers and that they are not accountable for such criminal conduct. Since the drivers are not technically employed by the ride-hailing companies, the law safeguards the businesses in this situation

(Daniels & Turcic, 2023). There appears to be a concern about competition for public transportation systems, including trains, trams, subways, and buses, when looking into E-hailing.

For generations, the taxi industry has been male-dominated (Daniels & Turcic, 2023). Men were behind the wheel both literally and figuratively. The majority of taxi business owners were men, and almost every driver in every country was also a man (Beck & Hensher, 2020). With the appearance of ride-hailing, the situation has changed: more and more women have discovered that driving is a job that allows them to make a living and support their families. The industry is not as closed anymore and allows anyone to install an app and apply, so the number of female drivers keeps growing (Jenn, 2020). Being a female driver comes with several challenges: it is often dangerous to drive at night, and the driver needs to be mindful of unsafe areas. Cases of attacks and harassment of female drivers have led to women drivers choosing to avoid night shifts and to drive in only specific locations (Spiteri *et al.*, 2020). This means they often make less profit from driving than their male colleagues.

At the same time, women have always been active taxi riders (Zeng *et al.*, 2022). With complicated daily schedules that often include having a job, performing domestic chores, and taking care of children, women use taxi services and ride-hailing services to the fullest, and this is not always a smooth ride (Wang, 2019). Stories of harassment, intimidation, and discomfort during taxi rides have been all too common. Feedback forms, reports, and social media keep exposing safety issues that women face while regularly finding themselves in a closed space with a stranger. When women-for-women taxis arrived, they gave women a chance to avoid all these issues (Spiteri *et al.*, 2020). The concept of women-for-women taxis is simple yet profound: these services are exclusively operated by women, for women. This ensures a safe, comfortable, and reliable means of transportation for the driver and the customer.

According to Pojani and Stead (2015), traditionally, men dominated the supply side of urban public transport in Germany. Despite male domination in the taxi industry, Pojani and Stead (2015) further articulate that women drivers are now a familiar sight in towns. Women have always been an important part of the workforce in Germany, not least in transport enterprises (Pojani & Stead,

2015). Furthermore, Pojani & Stead (2015) also indicate that up to the First World War, women were segregated, employed merely as track cleaners, or as general cleaners.

On the other hand, the International Transport Forum (2015) indicates that the role of women in the transport sector is something that needs to be addressed. In this regard, the International Transport Forum (2015) states that women account for only 17.5 percent of the workforce in the European Union's urban public transport and hold less than 10 percent of technical and operational jobs. Similarly, Ng and Acker (2020) indicate that in 2018, females represented less than 20 percent of the global transport workforce (Ng & Acker, 2020). Subsequently, within the European Union (EU), in the same year, Ng and Acker (2020) thus allude that the average female participation rate in the transport-related workforce was 22 percent, while the EU average female participation rate for the total workforce was 46 percent (Ng & Acker, 2020). Moreover, the International Transport Forum (2015) demonstrates that in the United States, women comprise only 15 percent of transport and related occupations, and only 4.6 percent of commercial truck drivers are women. The Forum reiterates that changing these numbers to achieve inclusivity and gender balance in the transport sector is a very ambitious agenda (International Transport Forum, 2015).

Despite this gap, the World Economic Forum (2021) indicates that the EU has one of the highest rates of female employees in the transport workforce compared to other parts of the world. While women do participate in the transport workforce, relatively few women rise to managerial positions. Furthermore, Ng & Acker (2020) also note that in global supply chains and logistics, women occupy less than 20 percent of top executive positions across all sectors. According to Pojani and Stead (2015), traditionally, men dominated the supply side of urban public transport in Germany. Despite male domination in the taxi industry, Pojani & Stead (2015) further articulate that women drivers are now a familiar sight in towns. Women have always been an important part of the workforce in Germany, not least in transport enterprises (Pojani & Stead, 2015). Furthermore, Pojani & Stead (2015) also indicate that, up to the First World War, women were segregated, employed merely as track cleaners or as general cleaners.

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Despite this gap, the World Economic Forum (2021) indicates that the EU has one of the highest rates of female employees in the transport workforce compared to other parts of the world. While women do participate in the transport workforce, relatively few women rise to managerial positions. Furthermore, Ng and Acker (2020) also note that in global supply chains and logistics, women occupy less than 20 percent of top executive positions across all sectors. Many taxi industries were formed by those women who loved the industry. These women also realized that there is discrimination leveled against them because of their gender. And they wanted to solve the problems of safety and discrimination against women, especially in the ride-hailing industry, and to secure their niche in the ride-hailing market. For instance, in Nigeria, an organization called HerRyde was launched in August 2022 in Nigeria's capital city, Abuja, to address the plight of women. While being a successful ride-hailing company, this organization changed the narrative that the industry is only meant for women.

In Egypt, an organization called PinkTaxi arrived as a solution to the problems that affect women taxi drivers (Stamarski & Son Hing, 2015). The first problem was female safety or, rather, lack thereof. The second problem was that taking a ride with a traditional taxi in Egypt required bargaining, knowing the route, and being constantly on guard. This was an impossible task for female drivers, and there are many female tourists in Cairo (Tessa, 2018). The company became

the go-to service for tourists. PinkTaxi targeted traveling outlets such as TripAdvisor and Lonely Planet to get represented, used social media to build their reputation as a safe and fitting method of transportation for local women and Western female tourists, and fostered active communities on Facebook and Instagram (Vegter, 2020).

The public transportation sector in South Africa is currently in crisis as captive users of these systems deal with risky, unreliable, and expensive systems. Even during the COVID-19 pandemic, E-hailing services are crucial for mobility and are the main industry (Nicola *et al.*, 2020b). As a result, the service sector has received increasing media coverage both locally and globally (Nicola *et al.*, 2020b). However, in Thohoyandou, South Africa, there is currently a knowledge gap about bolt drivers of E-hailing services. It is unknown how E-hailing services have been perceived and what variables may encourage or discourage their use. Given the substantial pushback toward these services, data from interview respondents will provide a collective summary of information that will provide insight into the acceptance and use of E-hailing services from the perspective of the drivers.

1.2. Problem statement

The transport industry is an overwhelmingly male-dominated sector, and women are predominantly absent in many transport industries across the world. Eventually, at the European Union level, Asian, SADC, as well as at the national level, transport structures and political committees in the transport industry, women have a low representation and involvement. The research literature suggests that the transport sector is a gendered work space dominated by masculine values and practices (Ng & Acker, 2020). To this point, women's participation has been hampered from moving past the glass ceiling as a result of organizational culture practices, rooted beliefs, and values found in the industry. In this regard, women's involvement in technical or operational roles, such as drivers and mechanics, is much lower than that of their male counterparts.

1.3. Aim of the study

The aim of the study is as follows:

The study aims to explore Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Limpopo Province, South Africa, to formulate a comprehensive strategy to address industry challenges.

1.4. Objectives of the study

The objectives of the study are as follows:

- Establish the extent of women's participation and involvement within the E-hailing transport services in the Thohoyandou area in the Vhembe District;
- To explore the influence of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe
- To determine the factors that may influence or limit the participation of youth entrepreneurs in the E-hailing (Bolt) transport services during the post-COVID period in Thohoyandou.
- To assess the challenges faced by youth entrepreneurs in E-hailing (Bolt) transport services during post-COVID in Thohoyandou.
- To determine measures that could mitigate challenges encountered by youth entrepreneurs in E-hailing (Bolt) transport services in Thohoyandou.

1.5. Research questions

The following are the research questions:

- What is the extent of women's participation and involvement in the E-hailing transport industry?

- What influence did COVID-19 bring on Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Thohoyandou?
- What are the factors that may influence or limit the participation of youth entrepreneurs in E-hailing (Bolt) transport services during the post-COVID period in Thohoyandou?
- What are the challenges encountered by Youth Entrepreneurs and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Thohoyandou?
- Which supporting measures can be taken to mitigate challenges encountered by youth entrepreneurs in the E-hailing (Bolt) transport services during post-COVID in Thohoyandou?

1.6. Significance of the study

This study will contribute to the current discussions about gender representation in the sectors of the taxi industry and other related industries in South Africa. The government and taxi associations may benefit by way of developing and implementing policies and programs that may promote gender equality in the taxi industry. This study will add to the body of knowledge on gender representation and serve as justification for advocating gender equity principles in the taxi industry structures. The findings will also help the taxi association to balance gender representation by increasing women's participation in the industry, help men change their attitudes and behaviour in their traditionally male-dominated industry at Thohoyandou town and in some related towns and villages around South Africa.

1.7. Delimitation of the study

This study was conducted within the District of Vhembe in the Limpopo Province, focusing on Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe.

1.8. Operational terms

COVID-19

COVID-19 refers to an acute respiratory illness in humans caused by a coronavirus, capable of producing severe symptoms and other cases of death, especially in older people and those with underlying health conditions (Krishnakumar & Rana, 2020). In the context of this study, COVID-19 will mean an illness that brought challenges to many business industries and affected their operations due to its restrictions, leaving the economy in a poor state all over the world.

Entrepreneurship

Entrepreneurship is the process of designing a new business or running an already existing business that was previously initiated on a small scale (Ratten & Entrepreneurship, 2020). In this study, entrepreneurship means various businesses that are operated by youth in the same or different sectors, which are affected by COVID-19 and its restrictions. Some of the businesses that used to operate before the pandemic are no longer in operation, while some of them during the post-COVID-19 pandemic period are still thriving but encountering difficulties.

E-hailing service

E-hailing service, also known as “Ride-hailing”, is the process of connecting a passenger and driver through an application software that can be downloaded from the internet through computers and smart devices (Rayle *et al.*, 2016). E-hailing includes services such as Bolt and Uber, which use online requests to order a ride.

Transport services

Transport service covers airlines, trucking, railroads, shipping, and logistics firms. From the content of the study, the transport sector refers to the movement of people and products from one place to another (Nicola *et al.*, 2020b).

Youth

Youth refers to the time between childhood and adulthood, which in the South African perspective covers the age range of 14 to 35 (Abdul, 2020). According to this study, youth will mean young people who are still new to businesses and want to explore entrepreneurial activities. Although that is the case, COVID-19 affected youth, leaving them unemployed and/or without business knowledge.

Youth entrepreneurship

Youth entrepreneurship refers to the art of innovation and risk-taking for profit in business. According to this study, youth entrepreneurship refers to the innovative business ideas introduced by youth (Giones *et al.*, 2020).

Representation

Representation refers to a body of legislators that serves on behalf of some constituency (Loeper, 2016). In the context of this study, representation means E-hailing representatives who continuously represent women drivers as well as women E-hailing owners.

Gender Representation

Gender representation refers to equitable or fair representation of people of different genders (Taylor, 2012). In the context of this study, gender representation refers to the transportation industry, which has been traditionally dominated by men, including technical or operational roles such as drivers and mechanics.

Public transport

Public transport refers to a system of transport for passengers by group travel systems available for use by the public, unlike private transport, typically managed on a schedule, operated on established routes, and that charges a posted fee for each trip (Public Transport, 2018). In the context of this study, public transport means the transportation industry predominantly managed and controlled by male drivers as well as owners.

Gender inequality

Gender inequality refers to unequal treatment or perceptions of individuals based on their gender (Berg, 2006). Kajawo (2012) defines gender inequality as a disparity between individuals due to gender. In this study, gender inequality means unfair treatment of individuals, unfair access to opportunities, and unfair constraints based on their gender.

1.9. Outline of the Study

Chapter 1: Introduction and background: This chapter introduced the study and provided the background of the study. The background and the preliminary literature are included to justify the study. The section also includes the problem statement, aim and objectives, research questions, the significance of the study and the definition of terms.

Chapter 2: Literature review: This chapter discussed, explained and analysed the body of literature that exists in the field of youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe. Reference is given to the historical overview of E-hailing (Bolt) transport services, trends, and patterns.

Chapter 3: Research methodology: This chapter presents the research approach, which is used to address the objectives of the study. The research design, description of the study, population, sampling, data collection, measures of trustworthiness, data analysis, and ethical considerations are discussed.

Chapter 4: Data presentation, analysis, and discussion: In this chapter, the biography profiles of the participants are presented, followed by analysis and interpretation. It focused on the challenges faced by youth entrepreneurship and gender dimensions in e-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, and highlighted factors that contribute to their vulnerability.

Chapter 5: Discussion of the findings, conclusion, and recommendations: This chapter includes an overview of the study, a summary of the findings, a conclusion, and recommendations.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Introduction

The importance of the literature review is to determine what has already been done relating to the research problem (Christen, Johnson & Tuner, 2010). The chapter provides an overview of the youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe. Theories relating to the study were reviewed and discussed in this chapter. The study obtained relevant literature on youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period from journal articles, abstracts, reviews, books, dissertations, theses, research reports, the internet, and other electronic media. Below is the detailed explanation introducing the topic of the study.

The Gender dynamics in e-hailing services are complex and multifaceted, with factors such as passenger preferences, safety concerns, and potential gender productivity gaps all playing a role (Bhana et al., 2021). In the context of e-hailing services, there are notable gender differences in both driver and passenger preferences. Many individuals, especially women, report feeling scared and vulnerable when using public transport, including e-hailing services. There are noticeable gender gaps and differences, primarily in driver roles and passenger preferences (Levant & Pryor, 2020). While e-hailing platforms are generally gender-neutral in their pricing and rules, there is a prevalent gender wage gap, often linked to differences in driver experience and productivity. Additionally, many passengers express a preference for female drivers, citing safety and comfort concerns.

The COVID-19 problem poses additional obstacles for young transportation businesses, which have been among the worst impacted by the pandemic (Clark, 2020). Youth entrepreneurs in e-hailing transportation appear to be experiencing major upheaval in the market. Despite the COVID-19 issue, E-hailing firms such as Bolt appear to have provided jobs for young people to transport passengers to and from their preferred locations (Abu-Rayash & Dincer, 2020). E-hailing transport service, also known as ride-hailing, is the process of connecting a passenger and driver

through an application software that can be downloaded from the internet through computers and smart devices.

E-hailing users can request a ride online from their mobile device at their precise location and have a lift within minutes. E-hailing transport services operate online through an App that serves as a smartphone application for drivers and passengers to regulate and receive transportation services (Aloi *et al.*, 2020). In other words, their platform technology connects passengers with drivers to help them go to where they want. The passenger has to set the destination and add their details on the app to request a ride (Fabeil *et al.*, 2020). The E-hailing services accommodate at least four passenger seats. However, customers seem to prefer one passenger per trip when using the E-hailing transport services (Budd & Ison, 2020). What is interesting about Bolt is that its rides cater to the interests of an individual rather than a collective, and with that, a passenger sets their own travel time. This is seen when the majority of people choose Bolt over public transport, such as taxis or buses.

Looking at the brief history of E-hailing services in South Africa, it began in 2013 with the US operator “Uber entering the local market (Fabeil *et al.*, 2020). This was followed by Bolt (formerly known as Taxify) two years later in 2015, and much later, the Chinese-based DiDi Chuxing. The transport economy was revolutionised, giving our country a much-needed subsector that was not only good and convenient for customer comfort and dignity but also created a new, decent market job. E-hailing services quickly became one of the most successful sectors of the platform economy, attributed to the value they have created both pre- and post-travel (Geitung, 2017). As evidence of all this, we have seen that digital platforms have been largely successful, due to their reduction in transaction costs and market barriers, making it easier for their users to access markets. The innovation and digitisation of these market sectors is often referred to as the fourth industrial revolution.

The introduction of ride-hailing services in South Africa quickly led to contention between taxi unions and the government, protests by taxi-industry workers, and acts of violence by minibus taxi drivers against ride-hailing drivers, which persisted for several years (Burke, 2017). However, it is anticipated that the most recent proposed amendment to South Africa’s National Land Transport Act in 2020 is likely to ease tensions between the minibus taxi and ride-hailing sub-industries. E-hailing service is popular in many countries, for example, in Malaysia, it was first launched in

January 2018 (Iqbal, 2019). A growing population and rising migration from rural to urban areas have put a strain on the quality of life for Malaysia's population. The service is available in Malaysia and has so far had success just like in countries like China, South Africa, the United States, Nigeria, India, and the United Kingdom (Clark, 2020). E-hailing services have become more popular than traditional taxis for a variety of reasons. Customers are also likely to seek out the providers' services as long as they pay close attention to their needs, solicit feedback often, and improve the quality of the services they give. In this instance, E-hailing services are further discussed from their origin and they they work, looking at their background. Countries that were largely affected by COVID-19 on E-hailing (Bolt) transport services are as follows: the United States, China, Europe, Australia, India, Malaysia, Mexico, Indonesia, Singapore, and South Africa. The above countries are further discussed in detail in this chapter in order to provide more insight into how COVID-19 influenced them on E-hailing (Bolt) transport services.

2.2. Background of E-hailing service and Gender Difference in the transport industry

Gender wage disparity has been a heated global economic issue. Although this gap is narrowing, the ratio of female to male earnings has increased from 60 percent in the 1980s to 79 percent in 2014 (Jayachandran, 2020); it still exists in traditional labor markets. Previous studies have tried to explain the reasons behind this disparity from different perspectives, such as human capital theory (Maina & Caine, 2013), women's weaker continuity of labor force participation, and the fact that women tend to shy away from competition. Even in a highly flexible gig economy where the gender wage gap is considered to be reduced or eliminated, women's hourly earnings are significantly lower than those of men on the same tasks after controlling for educational level, experience and feedback score, perhaps due to women's unwillingness to negotiate price and tendency to bid late in a job application (Ng & Acker, 2020). The ride-hailing market of the gig economy is slightly different because a uniform pricing strategy is set by the ride-hailing company, with ignorance of the driver's gender, and financial returns are not based on working intensity in a specific duration (Ngubane, 2016). Due to the absence of a "job-flexibility penalty" and uniform pricing mechanism, the wage gap is closely correlated with the productivity gap in the ride-hailing market.

Despite gender-neutral rules in the ride-hailing market, it is still male-dominated, and a gender wage gap has been observed among Uber drivers in the USA (Sattari, 2021). The authors found that such wage gaps are governed by gender differences in driver experience, driving speed, and choice of driving locations and periods. Although ride-hailing platforms are not biased towards women for their discontinuous work schedule, human capital theory indicates that the experience they accumulate tends to be less than that of men due to shorter driving mileages, which may result in their lower productivity (Weil, 2022). Driving speed could also be an important factor distinguishing men from women as men are more likely to drive faster and more aggressively (World Economic Forum, 2021). The productivity calculated as a ratio of earnings and work duration has a positive correlation with driving speed. Moreover, men are more willing to drive in locations with higher crime rates or during late-night hours, which might lead to a productivity gap as ride-hailing companies provide financial incentives to encourage drivers to serve undersupplied areas (Weil, 2022).

The root of E-hailing services was based on the concept of the sharing economy, whereby traditional marketplaces of business were replaced progressively by more innovative, dynamic, and intuitive platforms (Hawlitschek, Teubner & Gimpel, 2016). Sharing economy refers to a socio-economic system whereby consumers share in the creation, production, distribution, trade, and consumption of goods and services (Shaheen, Cohen, & Zohdy, 2016). This gradual change was caused by the rapid enhancement of information technology and the Internet, which fuelled the convergence and progression further. Most of the platforms within this sharing economy were developed and managed by a third party (Nicola *et al.*, 2020b). These platforms usually brought the extra resources of the owners together to match the demands of the users. Shared mobility was conceptualised from the sharing economy, which can be summarised as the shared use of a vehicle, bicycle, or other modes. This innovative transportation approach enabled users to gain short-term access to numerous methods of transportation on an as-needed basis.

With users gaining access, E-hailing service was acknowledged to be within this approach of transportation, which had steadily altered the way urban commuters interact and move around (Santi & Ratti, 2017). Previous research has defined some essential terminologies associated with shared mobility, mainly the E-hailing services (Nicola *et al.*, 2020b). For starters, Ride-sourcing/E-hailing/Ride-Hailing was described as a provision of planned and on-demand transportation

services for compensation, connecting drivers of personal vehicles with passengers. Smartphone mobile applications facilitated the booking, ratings (for both drivers and passengers), and electronic payment (Shaheen *et al.*, 2016). Entities that operate the services were identified as Transportation Network Companies (TNCs), also known as e-hailing operators, offering arranged and on-demand transportation services for a fee, which linked drivers of personally owned cars with passengers. This is evidenced as Bolt is continuously developing safety features and tools that have a real impact on addressing drivers' safety concerns to ensure a safe ride. Smartphone mobile applications were used for reservation, ratings (for both drivers and passengers), and electronic payment (Nicola *et al.*, 2020b). In Malaysia, TNCs are also known by their legal term, "Intermediation Business" which is construed as a business of facilitating arrangements, bookings or transactions of an E-hailing vehicle, whether for any valuable consideration, money's worth or otherwise (Shaheen *et al.*, 2015). The medium of transaction, or application or "E-hailing Apps", uses smartphones that connect licensed taxis or private-vehicle for-hire drivers with passengers.

Using technology to access any mode of transportation that was rendered by the company and privateers has resulted in numerous interpretations of the terms. Most academics in North America and Europe had used and accepted ride-sharing as the term to describe these types of services in the context of sharing transportation, which was commonly found in publications (Shaheen *et al.*, 2015). The US Department of Transportation (DOT) used the term "ride-sourcing" exclusively in the context of notary and legal matters. One of the significant sub-classifications of the sharing economy that emerged within the transportation industry is the "Shared Mobility" (Shaheen *et al.*, 2015). The concept of shared mobility is distinguished from the conventional methods of public transportation, whereby e-hailing, ride-sourcing, ridesharing, and carpooling services are provided to complement the needs of designated customers. The use of a private vehicle to transport a paying passenger that is facilitated by the use of technology and apps is known as "E-hailing" in Malaysia, while in North America and Europe, these services are known as "Ride-Sourcing" or "ride-hailing" (Shaheen *et al.*, 2015). This form of sharing economy is undeniably thriving as shared mobility services have become an essential part of the transportation industry of today, with the use of technology.

The use of the Internet of Things (IoT) and technology has become an indispensable feature in the business structure of commercial trade within the sharing economy in recent years (Nicola *et al.*,

2020b). Technological applications that utilise the Internet, such as smartphones, have changed the way society conducts business and individual daily lifestyles. Users and adopters of these technologies can share unused property, extra resources, time, and skills across online platforms (Wosskow, 2014), which is an economic system that fosters the sharing economy. Physical shops were no longer operating full-time as traders and buyers shifted the marketplace to online platforms, which reduced physical interaction altogether. In hindsight of these changes, business resources, stocks, and capital were revealed to be better allocated and managed, which creates efficiency that could be demanding through the traditional means of business.

According to Azevedo and Maciejewski (2015), the popularity of E-hailing transport could be due to the adeptness of the service in addressing several factors that can influence the choices made by customers of taking either the private or the public mode of transportation. These factors include the characteristics of the traveller (background, household structure and income, vehicle ownership, and availability of vehicle choice); the trips (purpose, time, and distance) and the transport facility (travel duration, costs, quality of service, availability of transportation and parking space) (Nicola *et al.*, 2020b). Hence, these shared mobility services can provide a smooth and pleasant means of transportation, which can be either impartial or integrated with another form of the transportation system (Wosskow, 2014). Moreover, E-hailing services offer on-demand services at an affordable price in comparison with other modes of transportation, such as taxis, which is sometimes below the market rates. Although the belt approach is unregulated, the E-hailing services continue to progress as a favourite mode of transportation among urban commuters. As a result, most shared mobility services are seen as disruptive to the existing transportation model. E-hailing transport is further discussed below by exploring other parts of the country.

2.3. COVID-19 and its effects on e-hailing transport services across countries

Since 2011, smartphone App-based ride-sourcing services have emerged as a new travel mode in many cities worldwide (Mlambo, 2023). Over the past decade since its inception, the service has seen a dramatic increase in popularity and market share due to features like the flexibility in the pickup and drop-off locations and times, safety, wide coverage areas, and reliability. However, in March 2020, the 2019 novel coronavirus (COVID-19) began to spread rapidly across the globe,

prompting the World Health Organization (WHO) to declare it a global pandemic (Daniels & Turcic, 2023). Consequently, governments have introduced various Non-Pharmaceutical Interventions (NPIs) to curb the spread of the virus, including lockdowns, stay-at-home orders, work-from-home policies, closing schools, universities, and non-essential workplaces, social distancing, wearing masks, and movement restrictions.

Additionally, by the beginning of 2021, different COVID-19 vaccines had been approved for emergency use by the WHO, and governments had started to immunize their population to reduce the risk of getting and transmitting the virus (WHO, 2015). Nevertheless, after more than two years since the first case was reported, COVID-19 is still an ongoing pandemic mainly due to vaccine hesitancy and inequality, as well as the emergence of new variants. This raises an important question: how did the COVID-19 pandemic impact the transportation demand in general and the demand for ride-sourcing services in particular? Previous literature revealed that the pandemic has significantly influenced demand for all modes of transportation as well as changed individuals' travel behaviour and preferences (Daniels & Turcic, 2023). During the COVID-19 first and second waves, public transit, taxi, and ride-sharing services have experienced substantial reductions in ridership. However, public transit users were more likely to change their travel mode compared with the users of other modes, due to their concerns regarding the safety of the service and fears of getting infected (WHO, 2015). Moreover, users' low confidence in public transit is expected to slow down the recovery of the system. On the contrary, the use of private vehicles, motorcycles, and active means of transportation has become more common. This is justified by the current state of post-COVID, where the majority of people opt for E-hailing transport services such as Bolt and Uber, other than public transport such as taxis and buses. Other relevant attributes of E-hailing services are comfort, security/safety, and ease of requesting the ride-hailing service. In order to give the study more vibrant information regarding the literature review, it is important to differentiate countries from the first world, second world and third world in order to derive and achieve how the research problem of the study is shaped. Therefore, the countries are further looked into details below:

In the United States, social distancing measures and stay-at-home orders implemented in March 2020 resulted in nearly 30 percent reduction of personal trips (Naidoo, 2023). The impact of the COVID-19 related interventions at the beginning of the pandemic was not limited to the motorized

modes, but they have also significantly reduced the daily walking behaviour of people in many places. However, in the subsequent months, when the weather became warmer and some commercial activities resumed, recreational walking behaviour has increased markedly. Such behaviour has given rise to the pandemic as many people spent more time outside, being exposed to the virus. As compared to the study conducted in South Africa, unlike in China, the law to restrict people from public transport and outside places has led people to spend most of their time indoors rather than outside. Again, people would rather choose E-hailing transport such as Bolt because of its safer use in order to combat the COVID-19 pandemic.

E-hailing vehicles have emerged as a significant breakthrough in the transportation industry (Rangel *et al.*, 2022). E-hailing was invented in the US and has spread quickly throughout the world. China has made impressive strides in studying the development period, rapid expansion period, and adjustment period, while being a laggard. The primary factor is that China has a sizable user base, an adequate labour pool, a favourable network innovation environment, and a liberal regulatory climate. The Chinese government's recently implemented legislation has significantly restricted the E-hailing market (Daniels & Turcic, 2023). A significant challenge is whether the E-hailing platform can continue to operate impartially and protect consumer rights as the economy develops. Indeed, we can see now, during post-COVID, that Bolt has improved, and its major concern is to safeguard both the customer and the drivers from all sorts of dangers. The improvements are implemented regularly to protect everyone who will be using their services, not excluding the safety of its drivers.

In China, the reduction of transportation demand during the early stages of the pandemic was mainly due to the COVID-19-related variables, e.g., new hospitalized cases, NPIs, as well as individuals' attitudes and perceptions towards the pandemic (Daniels & Turcic, 2023). A recent study in China explored the impact of the pandemic on the behaviour of ride-sourcing drivers using the actual data from September 2019 to August 2020. The study indicated that the daily number of new COVID-19 cases significantly affected the number of trips drivers made at the beginning of the pandemic. However, the effect of newly recorded cases decreased during the reopening phase (Mlambo, 2023). Another recent study in the same country showed that the demand for both ride-sourcing and taxi services was significantly affected by the number of COVID-19 cases, COVID-19-related policy measures, mean transportation cost, and the operational status of mass transit.

With the trend toward a digital and knowledge-based economy, innovation occurs quickly as a result of the interaction between business platforms and mobile Internet technology. In this regard, E-hailing serves as a good illustration of the "Internet Plus Transportation" model, which is reshaping the market for traffic services (Clewlow & Mishra, 2017). Economic theories inevitably have trouble understanding novel phenomena, and occasionally, they are too detached from reality to consider certain space-time aspects. There is a ton of research on e-hailing vehicles. Researchers have discovered that the collaborative models and evaluation processes used by drivers at organisations like Uber boost the value of flexible work (Gomez *et al.*, 2021).

According to Gan *et al.* (2021), Uber has recognised the taxi industry's disruptive innovation. As we can see currently, traditional taxi and public transportation trips have been replaced or overpowered by Internet taxis and also found that elderly people use Internet extremely infrequently, making training services for the elderly vital to make it easier for them to travel also. Not only do youth opt for E-hailing transport services, but even elderly people go for it for its safer and effective services. For example, E-hailing transport services are comfortable, takes one person per ride and it is also time efficient which may be one of the reasons elderly people chooses it than public transport. However, fewer people than in other nations have studied the Chinese E-hailing sector accommodating elderly people. In terms of reasons for using ride-hailing services, several studies have pointed out that ride-hailing services have some unique mobility qualities that encourage the increasing demand for the services.

China's E-hailing vehicle has gone through three very distinct stages of development: before 2013, it was the E-hailing car's initiation and development phase, and the offline car rental company served as a metaphor for the growth of the interfrom 2013 to 2015, it was the E-hailing car (Clewlow & Mishra, 2017). The network of vehicle transport services kept getting better during the period of rapid expansion, and both the number of users and the market reaction were fierce. The E-hailing automobile sector arrived, the national and local policies were implemented, and the adjustment period began in the second half of 2015 (Rasca *et al.*, 2020). The platform takes on more regulatory duties as the barrier rises. Just like in South Africa based on the aim of the study, the use of E-hailing transport services increased during the pandemic up until now in post-COVID. Even if the pandemic is silent, the use of E-hailing rides increases daily. Safety is a primary rule of life which means entrepreneurs must minimise risk of injury, sicknesses or incur losses when

operating E-hailing transport. In other words, the architecture of E-hailing platforms was designed to guarantee the safety of customers during the pandemic. Looking at recent measures implemented by Bolt, the company itself is looking for ways to make e-hailing safer for everybody, in consultation with the SAPS, the Department of Transport and other stakeholders.

Car rental businesses in China started leading the charge in attempting to link with the Internet as early as 2006 or so. Businesses like vehicle information release, user reservations, and process audit are being digitally transformed by car rental companies in China, while increasing offline service outlets (Gomez *et al.*, 2021). Although there has not been a true platform enterprise up to this point, it has set the framework for platform development. Cheyun Information Technology Co., Ltd. was created by the corporation in Beijing in 2010. The first company to aggregate travel service resources as an online information provider, Easy to Get focuses on business travel and mostly rents out cars from offline car rental agencies. It is simple to establish oneself as a platform that offers complete services to users, car lessees, and drivers. It was simple to integrate almost 5,000 automobiles by August 2012 (Vega-Gonzalo *et al.*, 2023). Didi's cab software became live in August 2012.

This type of mobile app first focuses on the car business of traditional taxis (Rasca *et al.*, 2020). Passengers can call the taxi quickly and conveniently through the app, and the driver can also conveniently take orders through the app and increase revenue by reducing the no-load rate (Clewlow & Mishra, 2017).

The emergence of taxi software optimised the traditional taxi travel service, which is helpful for solving the problem of difficult taxis, but there is no fundamental improvement (Rasca *et al.*, 2020). After a difficult push stage, the taxi software won the first batch of stable users and was recognised by the market. Indeed, the number of users has increased dramatically. It has even become a new thing for public opinion to report, and at the same time, it has become an excellent target for venture capital and the capital market. The taxi software is a typical intermediary platform. It solely offers information services, combining taxi demand and supply, and it is clearly a light asset operation.

It was dubbed "the first year of mobile Internet" in 2013 (Tang *et al.*, 2020). The network included the mobile communication base station. The growth of mobile Internet technology has a solid foundation thanks to the maturation of WAN network technology, the commercialisation of LBS

technology, and the continuing decline in price of smartphones. Mobile payments and purchasing have become more sophisticated in business practice. Internet outlets have been accessed by the O2O platform, and numerous online and offline platforms have appeared (Clewlow & Mishra, 2017). Platform firms are the driving force behind the continued development of innovative solutions across the travel market. The customised car's appearance indicates that the Internet App is more than just a support tool for the taxi sector. This is seen as people ordering rides through their smartphones to take them to and from their places of choice, anytime and anywhere. By this, it clearly shows that technology is advancing and actively taking its part in the e-hailing transport services.

The quick taxi announced the introduction of the new company brand "No. 1 Special Vehicle" in July 2014, aiming to attract mid- to high-end customers (Tang *et al.*, 2020). In August 2014, Didi also introduced a unique vehicle aimed at the mid- to high-end corporate vehicle segment. Speciality vehicles demand stricter standards for vehicle value, and drivers must complete standardised business etiquette training before beginning work. Even though the automobile has received a lot of positive feedback from customers, Didi keeps developing its product line. Express trains, shuttles, buses, shuttles, direct shuttle buses, drivers, and chartered cars were all introduced in just 2015 alone. It covers all aspects of inhabitants' daily travel by offering a large selection of alternative items for various travel preferences (Gomez *et al.*, 2021). The rivalry between the network and the automobile platform has intensified at this point. Didi and Fast have seen to have taken the top spots in the industry, started a subsidy war, and the market has also expanded quickly. The involvement of capital supported the subsidy war, and both businesses obtained hundreds of millions of dollars in funding.

After the subsidy battle, the E-hailing car market's quick development period was essentially through, and the capital force helped Didi and the swift merge (Wang & Noland, 2021). The two controlled more than 80 per cent of the market for e-hailing cars and thus established a strong market monopoly.

To transmit the attitude of tight supervision of online vehicles, the majority of local governments have adopted a kind of informal interviews and seminars; nevertheless, some local governments, including Shanghai and Hangzhou, have started to carry out conventional management work (Fabeil *et al.*, 2020). Although the Ministry of Transport also has a tendency to manage E-hailing

cars severely, it has been taking its time to propose a new contract for the cars because of concerns over policy ambiguity. There were about 294 million users overall in the online auto sector in (Miller, 2016). Overtaking the cumulative number of orders, Uber has established since its founding six years ago, the overall number of orders each year might have reached approximately billions, which is nearly twice as many as all taxi orders in the United States in 2015.

The network of automobile products has consistently improved because of the travel service platform's rapid development, particularly with the introduction of express trains and express trains (Frost & Sullivan, 2016). The service quality is outstanding, and the price benefit is clear when compared to typical taxis. The traditional taxi industry's interests have been directly impacted, and the tension between the old and new models has gotten worse. Local taxi driver strikes and protests have occasionally happened and have grown to be a significant concealed threat to societal stability. The development of e-hailing automobile management techniques and the reform of the taxi business have both been advanced by the Ministry of Transportation (Tang *et al.*, 2020). The Interim Measures for the Administration of Online Appointment of Taxi Management Services (hereinafter referred to as "Initial Measures") were jointly promulgated on July 27, 2016, by the Ministry of Transport, the Ministry of Industry and Information Technology, the Ministry of Public Security, the Ministry of Commerce, the State Administration for Industry and Commerce, the General Administration of Quality Supervision, Inspection and Quarantine, and the National Network Information Office (Fabeil *et al.*, 2020).

As a result, China is now the first nation in the world to acknowledge the legal status of the E-hailing vehicle (Wang & Noland, 2021). Since that time, the Ministry of Transportation has gradually developed a thorough management system that spans the platform, the driver, and the vehicle. Local governments now have the freedom to create specific regulations tailored to their communities thanks to the New Deal of the Internet. First-tier cities, including Beijing, Shanghai, Guangzhou, and Shenzhen, took the initiative to publish the proposed guidelines for implementing the network's standards in October 2016. The standards for cars and drivers for the network were significantly raised in comparison to the comparatively lax requirements of the Ministry of Transportation. Public discontent with this conduct is widespread (Zhang *et al.*, 2020). The primary platforms for e-hailing cars have stated that the regional regulations are excessively stringent. The expansion of the E-hailing automobile sector has been severely hampered by the rigorous

implementation requirements that the country's main cities have created as a result of pressure from the first-tier cities. The constitutionality of the establishment of administrative licences in local areas has been contested by numerous legal authorities. Additionally, some economists have questioned whether local implementation regulations can support the industry's healthy development. The national policy's launch gave the E-hailing automobile platform legal standing at the platform level, ushering in the heyday of standardised development.

The vehicles and drivers that were available on the E-hailing automobile platform, however, went off the cliff after the implementation of the local regulations (Fabeil *et al.*, 2020). Local laws have a relatively less impact on the heavy asset platform built on the B2C model than they do on the light asset platform built on the C2C model (Wang & Noland, 2021). The platform has made a big deal about internal management, increased the management of E-hailing car drivers, and improved consumer safety protection measures in an effort to establish a sustainable competitive edge. Domestic and express travellers totalled 236 million as of December 2017, an increase of 40.6 percent from the previous year. Use Didi as an illustration. More than 20 million drivers and different types of vehicles used the platform in 2017. The daily order volume was 25 million, with a yearly order volume of 7.43 billion (Rangel *et al.*, 2022). Taxi orders increased daily to 15 million. The daily average is 500,000, the average number of cars is 6, and 4,500 terabytes of data are processed per day. Through mergers and acquisitions, Didi Travel has grown to become the industry leader in the worldwide travel service platform. Didi's goal is to use DDT to serve many people globally and fulfil consumers' travel demands, making it the largest one-stop travel platform in the world.

It is worthwhile to go into further detail about the differences between the three employment states and the reasons for them (Fabeil *et al.*, 2020). These discrepancies are suggestive of work security, access to employment-related benefits, and, consequently, higher or decreased vulnerability to low wages and hyper-exploitation (Thomas, 2019). They also represent variations in ownership of the car and taxi operation licence. Taxi drivers who work for publicly owned taxi businesses are considered formal workers and typically have access to all state-mandated perks and protections (e.g., unemployment insurance and medical insurance). Taxi drivers that work for themselves are the owners of their vehicles and have their own taxi permits (Wang & Noland, 2021). Private taxi companies operating in China are distinct from those doing business in other nations in that their

status is not equivalent to that of private taxi companies operating in those other countries. They result from China's socialist economic structure in general and the taxi industry's fragmented management and regulations in particular. Going back to the study in South Africa as compared to China, the public transport modes have always been buses, trains, mini-buses, and metered taxis. Access to different areas in South Africa has been problematic for many, partly due to limited transport options, and E-hailing services have become visible and prevalent in South Africa.

Similar to many other nations, China's taxi sector is subject to stringent government regulations regarding market access, fare standards, and vehicle operating quotas (Maguire & Murphy, 2014). Although local governments, such as local Construction Bureaus, Transportation Departments, and Public Security Bureaus, are in charge of creating by-laws or specifying more specific restrictions for cars and drivers, the Ministry of Construction controls taxi regulation on a national level. Due to this, local private cab businesses frequently deal with overlapping power but unclear lines separating roles and accountability between various governmental departments and bureaus. City to city, taxi operation regulations may differ. For instance, Rosenblat & Stark (2016) discovered that of the 18 major towns in Henan Province, 11 had transportation departments in charge of the taxi industry, while the remaining seven cities' construction departments had regulatory authority.

In this situation, bureaucracy and the financial burden of administrative costs have given rise to a third kind of taxi company that collaborates with authorised government organisations or collective businesses (Xiaoyi, 2018). Although these businesses have operating permits, their management and pay structures are not at all open. Therefore, the main source of contractor drivers for these businesses is migrant labourers (who have moved from rural to urban regions in search of work). Taxi driving was viewed by migrant workers in China as a desired profession to integrate into urban society and earn a respectable wage, much like it was for immigrant drivers in New York City (Hodges, 2012). They frequently convince family members and neighbours to join them in the same trade in the city, a process similar to chain migration (Ding, 2014). As compared to South Africa, in line with the pre-existing patterns of city development, South African paratransit systems transport people from low-income residential areas such as informal settlements, generally located on the fringes of the cities, to city centres, providing work opportunities. On the other hand, middle to upper-class residents travel by private cars. In other words, people living in areas serviced by

public transport, generally outlying low-income areas, have higher transport-associated risk than those living in higher-income areas such as suburbs and estates.

Along with the population's rapid urbanisation, the multi-headed, multi-tiered management of the taxi industry (and local variations in how the sector is managed) has also given rise to a sizable black market in China (Fabeil *et al.*, 2020). Drivers in this grey market could be anyone from operators of fake taxis or unregistered private automobiles to drivers of community-based for-hire vehicles (Yang *et al.*, 2010), "blue" car owners who only accept rides from acquaintances or friends, and more. According to some estimates, the number of gypsy taxis in Beijing is almost 40 percent higher than the number of authorised taxis (Chen and You, 2012). Gypsy cabs are more common today primarily because the supply of taxis cannot keep up with the rising demand brought by the urbanisation of the population. The enormous pool of unlicensed ride-service providers and informal labour paves the way for the growth of ride-hailing applications in China. These elements are crucial for figuring out Didi's platform and labour model, as well as for comprehending how taxi drivers have adapted to and responded to Didi's rationale.

Although it has been reported that Chinese taxi drivers joined their counterparts around the world in protesting against ride-hailing apps, analyses have revealed that the reasons for the strike were more closely related to the taxi drivers' long-standing vulnerability and employment status than to technology (Harvey *et al.*, 2014). Not every protest is specifically directed against the Didi platform. Drivers of unregistered taxis and ride-hailing services that only accept taxis also went on strike in support of tighter government controls. The tactics cab drivers used for resistance and counteractions included not working and the use of a range of technology at different levels, from algorithms to a bigger media environment (Feng, 2015). These factors suggest that there is a growing space for labour activism in the digital economy, which is being more ruled by "black box" algorithms and corporate platforms. Within South Africa, studies about E-hailing services have centred around young people's travel behaviour and attitudes toward different modes of transport, which in this state is the influence of E-hailing on urban mobility in South Africa, as well as the institutional void associated with E-hailing platforms.

The variables that drivers cited as having the greatest impact on their revenue were: private hires on ride-hailing apps; unlicensed "black" or illegal taxis; and monthly commission payments levied by taxi companies (Jenn, 2020). Registered app drivers were more likely to hold ride-hailing

platforms accountable than non-app drivers because they felt taken advantage of or mistreated by these companies. More frequently than non-app drivers, the former also took part in strikes. The type of employment, the duration of the workday, and the amount of work experience were all important variables that related to drivers' participation in collective activities.

Contractor drivers had the highest participation percentage, whilst drivers employed by publicly owned cab businesses were the least likely to go on strike (Roa *et al.*, 2020). In comparison to drivers with fewer than three years of work experience, individuals with more than three years of experience were more likely to organise and participate in strikes. The drivers' comments were analysed to determine the causes of collective action, which revealed that they were more structural than technological (Roa *et al.*, 2020). The most often used keywords were business management and government inaction. In addition to the monthly commissions, more than 20 percent of taxi drivers complained about the "overlord clauses" that businesses impose (such as installation fees for security devices) and the unwritten rule that new drivers must bribe veteran taxi driver leaders in order to be hired by the company; this grey money is known in the industry as "tea and drinks fees" (Harvey *et al.*, 2014).

While operating as a raced and classed form of affective labour under contemporary capital, taxis are mobile and connected working spaces for drivers, who in turn have become a medium that, according to Benevenuto and Caulfield (2019), "both alters and is implicated in the "pace, pattern, and scale of social life. Chinese migrant workers who have become taxi drivers can negotiate and redefine the pace and pattern within and outside of the vehicle space thanks to smartphones that run ride-hailing applications. For instance, when driving, drivers may speak in dialect with their fellow village co-workers on the phone. Ding (2014) referred to this as the construction of a mobile homeland due to the dialect-based communication and connection over the airwaves that may be incomprehensible to passengers. The definition of the vehicle and the social interaction inside is helped by the overlay of a movable homeland onto a predetermined workstation.

Compared to the national average of 58 percent, almost 90 percent of drivers reported using smartphones while at work (Poushter, 2016). After engaging in social activities (80 percent), such as talking on the phone or using instant messaging, and for finding directions (48 percent), getting ride requests are among the top three things people do (56 percent). Some drivers have adopted a more favourable attitude about ride-hailing technology than they could have otherwise due to their

technological savvy (Poushter, 2016). They identified the power dynamics that enabled Didi to take advantage of them. Taxi drivers pushed on government regulation to improve their working conditions rather than making a facile association between ride-hailing applications and their unfavourable working conditions and dwindling salaries. One widespread request is for the government to regulate the ride-service business more actively.

The most crucial medium for disseminating information on strikes and mass activism is social media on mobile devices. The top four sources of information were all found on social networking sites, three of them (Zha *et al.*, 2016). The remaining sources, through neighbours and friends, showed how social networks and professional networks can overlap. Frequently, drivers themselves produce and disseminate information about mass actions and images on social media (Hwang *et al.*, 2015). With the help of this "worker-generated material," taxi drivers may now create their own narratives about their jobs and the difficulties they face. Taxi drivers are not the only ones who use social media and mobile technologies for political empowerment. Qiu (2016) noted that the Chinese working class has utilised social media platforms like QQ and WeChat to establish "an enlarged media ecology of resistance" for "collective empowerment". In a similar vein, the usage of digital technology and the development of political consciousness are "mutually constitutive" and strengthen one another.

According to Fabeil *et al.* (2020), taxi drivers started digging deeper into the system and began fiddling with the algorithms of ride-hailing apps because of this "mutually constitutive" connection between technological literacy and political activity. Drivers who use ride-hailing apps have reported installing bot apps in total at a rate of 40 percent or registering their cars on multiple devices in total at a rate of 50 percent (Poushter, 2016). Applications known as "bot apps" assist drivers in automatically evading Didi's restrictions and algorithms.

Different bolt apps are created for various goals, such as capturing the ride request with the highest fare or refusing ride requests at the driver's discretion without being penalised by Didi (Waldman, 2015). Drivers are able to compare ride-service requests in real time and select the best value from various orders using both Bot applications and multiple devices. Their informal status allows them to be "multi-homing," which means they could work on many platforms at once.

Taxi drivers have been forced to rely on their extended families and other social resources to find employment or create their own social safety net due to the lack of institutional support and formal social welfare policies linked with their informal status (Ding, 2014). However, informality may also indicate a low level of reciprocal commitment to employers, which can occasionally be turned into a strategy for getting an edge. For instance, some taxi drivers in Shenzhen abandoned their jobs and started their own vehicle fleet company to offer express car and private car service when Didi generously subsidised private hiring in 2015 (Zha *et al.*, 2016). The virtual shift of cab drivers to upstream ride-service positions is a clear rejection of Didi's algorithmic valuation of their labour. Algorithmic activism is emerging because of their deliberate attempts to control and gain an advantage over the digital platform, including their practice of multi-homing and the use of both programmes (Benevenuto & Caulfield, 2019). Since taxi drivers can accept many travel requests at once, or in parallel temporality and pace, these defiant strategies of system gaming also complicate the temporal politics inside the vehicle.

These actions produce a new temporal unit of value for each ride request (Fabeil *et al.*, 2020). Admittedly, gaming the system may not always result in taxi drivers making more money, and having to manage numerous gadgets and accounts may contribute to the increase in stress among drivers (Irani, 2015). However, the desire of cab drivers to escape being subject to an unidentified algorithmic authority and platform monopoly connects with widespread digital activism across industries, such as the opposition of call centre employees and crowd workers. In this mediated work environment, the linkages of control, exploitation, and counteractions are far from being one-way and top-down. According to Qiu (2016), the enlarged media ecology of resistance extends to the algorithmic level, and academics and activists may find common ground among workers from different industries and from different countries.

Recent years have seen a sharp increase in the amount of ride-hailing literature in the USA (Alonso-González *et al.*, 2020). A Web of Knowledge search for "ride-hailing" reveals a growth in articles from 31 in 2018 to 774 in 2020, with a focus on research from engineering, economics, and transportation-related fields, as well as places in North America, Europe, and China (Web of Science, 2020). Research has shown that levels of ride-hailing adoption and use are related to factors like income, education, digital connectivity, and propensity to own a car (Dias *et al.*, 2017). Additionally, a substantial body of research has critically examined whether ride-hailing replaces

or complements public transportation in response to concerns about its effects, finding variations in effects depending on the environment, type of public transportation networks, and demand groups.

In areas with pronounced spatial and accessibility disparities, such as Bogotá and many other cities in India, flexible on-demand services may significantly close gaps in time and space created by rigid public transportation networks (Guzman *et al.*, 2017a). In the same line, there is a chance that ride-hailing, by replacing rather than supplementing public transportation, may significantly impede accessibility due to worries about cost and a possible corrosive influence on transit. There is no concrete evidence of how these dynamics may play out in a context with a high reliance on public transportation and high inequalities in access to employment and education, like Bogotá, despite the international literature's suggestion that ride-sourcing services may have detrimental social and distributional consequences (Poushter, 2017). Accessibility is hampered to the extent that ride-hailing decreases ridership and could result in budget deficits in public transportation, which could result in service reductions that have an adverse effect on users who depend on public transportation.

Clewlow and Mishra (2017) have suggested, based on evidence from the United States, that some ride-sourcing users in areas with less public transit coverage may be more socially vulnerable. They have also suggested that in some communities where there is a lack of access to sufficient public transit services in terms of frequency and availability, public transit may be used as a substitute for short-distance trips where transit coverage is sparse. Depending on context-specific constraints for the regulation and operation of both ride-sourcing and public transportation, other scholars have also distinguished between competition and complementarity (Jin *et al.*, 2018). According to Wang *et al.* (2019), who studied the mobility as a service (MAAS) implication for social equity and accessibility in the United States, flexible and on-demand transportation may be able to meet the needs of urban areas lacking access to public transportation if the local population has the necessary purchasing power.

According to Alonso-González *et al.* (2020), researchers have been examining the impact of individual features and attitudinal variables alike through a variety of analytical methodologies to better understand the primary factors that influence ride-hailing use. The majority of empirical

research use survey datasets and discrete choice modelling methodologies (Tirachini *et al.*, 2020), through confirmatory factor analyses and structural equations models, latent constructs are explored (Etminani-Ghasrodashti & Hamidi, 2019) and clustering techniques such as Latent-Class Analysis (LCA).

According to a study conducted by Alonso-González *et al.* (2020), the use of ride-hailing services is negatively associated with riders' income, and more affluent, younger visitors tend to utilise these services more frequently. Similar studies in São Paulo, Brazil, indicate that more than 80 percent of current ride-hailing journeys previously involved a private vehicle (Haddad *et al.*, 2019). Findings from Colombia, Brazil, and Chile about effects on transit use point to mixed results, with potential for both complementarity and substitution depending on transit coverage, purchasing power, and temporal and geographical availability (Tirachini *et al.*, 2020). Roughly 33 percent of the demand for ride-hailing in Bogotá can potentially be attracted from public transit, with nearly a third of that demand being direct competition (Oviedo *et al.*, 2020). Additionally, the same survey discovered that demand for ride-hailing from private automobiles and traditional taxis is at similar levels.

Socially disadvantaged populations' ability to travel is constrained by transportation disadvantages and inequities (Thibert & Osorio, 2014). High socioeconomic spatial segregation or the concentration of social groupings (based on factors like status, money, and ethnicity, among others) in particular parts of a city or metropolitan area characterises most cities in the United States. Due to the spatial mismatch between where people live and work, economically poor and segregated groups encounter several geographic employment barriers (McLafferty, 2015). There is a spatial mismatch in LAC since most of the middle- and low-income people reside far from regions of economic activity (Fan, 2012). Most of the urban poor also tend to reside in the periphery or less desirable suburban neighbourhoods due to informal settlements and the development of State-provided low-cost housing for the poor in areas where land is still affordable.

One of the main effects of the urban and social structures of US cities is that transportation is prohibitively expensive and time-consuming in the majority of the region's cities. At the start of the decade, residents of the region's 15 main metropolises spent an average of 1.1 hours every trip, or more than 118 million hours each day (Montoya *et al.*, 2011). Today, using public transportation in numerous cities across the region can mean spending 1.5 to 2 times as long as using a private

vehicle on average (Vecchio, Tiznado-Aitken and Hurtubia, 2020). By being farther from the city centre, socially disadvantaged citizens who use public transport experience the longest travel times, longer distances, congestion, and often low local coverage of public transport that requires long walking times.

Economic expenditure can occasionally be excessively high. Large cities like Bogotá see daily transportation expenditures of 82 million US dollars, of which 78 percent is spent on private automobile use (Bocarejo & Oviedo, 2012). In comparison to private vehicles, public transportation costs an average of 0.7 to 4 dollars per journey. Low-income households may find this expenditure to be a significant burden. Poorer people can spend up to 25 percent of their salary, whereas automobile owners often spend less than 10 percent of their income (Falavigna & Hernandez, 2016). Having a car tends to be related to favourable transportation conditions and is typically only available to higher socioeconomic groups. In Latin America, the percentage of people who own cars and motorcycles is closely tied to both income and population distribution (Acevedo, 2013). It is anticipated that both cars and motorcycles would become more prevalent in the region's cities as the middle class grows and people move from low to middle income levels. Even so, the USA still has low rates of motorisation when compared to industrialised nations.

In Mexico City, there are 185 cars per 1,000 people, compared to 55 in Ecuador (Yaez-Pagans *et al.*, 2019). Peru and Bolivia, which have the lowest rates of motorization, have between 51 and 56 automobiles per 1,000 people, whereas Venezuela, Chile, and Argentina have between 135 and 165 cars per 1,000 people. The sale of motorcycles in the area has grown quickly because they require significantly lower incomes to buy and maintain. In Uruguay, there are 141 motorcycles per every 1,000 people, compared to 81 and 68 in Brazil and Colombia, respectively (Gómez & Acevedo, 2013). Due to an expanding economy and falling distribution costs, these numbers are anticipated to rise in the upcoming years. For instance, between 2000 and 2010, the number of motorcycles in Brazil climbed by 38 percent year, while growth rates in Colombia and Mexico were, respectively, 14.7 and 16.4 percent per year. In the area, the average annual increase in cars is roughly 6 per cent (Hidalgo & Huizenga, 2013).

The unequal distribution of trip resources and expenses shows a clear social and transportation advantage/disadvantage when combined with the urban and functional structures of the cities in the region (Benevenuto & Caulfield, 2019). Inequalities in access and social inclusion throughout

the urban population in the USA are the result of such a gap. Ride-hailing may contribute to conditions of advantage or disadvantage by enabling additional costs, conveniences, or comfort for its users while negatively affecting non-users who are already at a disadvantage due to its contribution to congestion and pollution. The unequal distribution of trip resources and expenses shows a clear social and transportation advantage/disadvantage when combined with the urban and functional structures of the cities in the region (Hidalgo & Huizenga, 2013). Inequalities in access and social inclusion throughout the urban population in the US are the result of such a gap. Ride-hailing may contribute to conditions of advantage or disadvantage by enabling additional costs, conveniences, or comfort for its users while negatively affecting non-users who are already at a disadvantage due to its contribution to congestion and pollution.

According to Ngo (2015), Bolt offers superior services to taxi services due to its quicker response times, lower waiting costs, convenience, and increased attention to passengers with disabilities. Due to the accessibility and availability of the Bolt service made possible by technological innovation, it is always in demand. According to Alley (2016), who examined the effects of Bolt technologies on the transportation sector in New York City, the introduction of Bolt has made it easier for residents of remote areas to access affordable transportation options, as Harding, Kandlikar, and Gulati (2016) predicted that taxi apps would replace private car use and offer prices that are significantly lower than those of a traditional taxi for the same trip. Indeed, it is visible that E-hailing transport services dominate the public transport services and many people opt for its ride.

One of the key elements influencing consumer choice and competition is perceived pricing. According to Teo, Mustaffa, and Rozi (2018), the ability of businesses to engage in primetime pricing and surge pricing allowed them to draw customers and have a competitive advantage over traditional cabs. In his research on Grab cars in Thailand, Ackaradejruangsri (2015) noted that one of the many advantages of using the app is sharing the ride location, phone number, licence plate number, and the estimated fare in advance. As a result, to some extent, the passengers feel more secure and less anxious. In a subsequent survey, he discovered that passengers' top concerns mainly were around perception, accessibility, and technological adoption.

In Tanzania, for many years, the taxi business has served as an alternative to public transit. The sector expanded because of the rising population and the public transportation system's failure to

keep up with the demand for transportation services, which was particularly high in towns and big cities (Henten & Windekilde, 2016). When compared to alternative public transportation options, taxis offer greater flexibility and convenience for less frequent trips, and they can offer door-to-door services that are available around the clock, seven days a week. Additionally, because they are not restricted to set routes or predetermined access points, taxis may operate flexibly and respond quickly to changes in demand (Benevenuto & Caulfield, 2019). Although there were no official taxi firms, cab drivers operated their own businesses under government regulation. They were always stationed at designated locations known as "Cab stands," where one had to go to choose a taxi or call the driver directly if he already had the number.

Many markets have been affected by recent advancements in information technology, including the internet transportation industry (Traum, 2016). People may now connect more easily thanks to the internet, and internet-based services have significantly reduced the prices of transactions between customers and service providers. A new company model, new business process, and new methods of marketing and disseminating goods, services, and knowledge are required by the expanding internet, globalisation of trade, and enhanced communication systems (Dlamini *et al.*, 2018). The development of mobile devices has advanced quickly in recent years, paralleling the growth of E-commerce. Several newly released smartphone gadgets have contributed to the rise in mobile usage. This led to an increase in internet users throughout the world, particularly in Tanzania, and an expansion of the E-commerce business. The establishment of the Internet taxi industry cost billions of dollars, but it has had significant market penetration in less than ten years (Conway, 2018). The internet transportation industry first gained popularity in the United States and the United Kingdom in the past twenty years and has since flourished throughout the rest of the world, particularly in Tanzania.

The E-hailing system, which allowed users to use their phones to fulfil a trip requirement, evolved because of issues with the traditional taxi sector and technology advancement (Shaheen, Cohen, and Zohdy, 2016). Using a smartphone application and an online platform, the E-hailing system

connects passengers and drivers. Unlike traditional taxi firms, E-hailing services like Uber, Bolt, Little Ride, and Exicab exclusively operate with currently employed, privately licenced drivers (Roa *et al.*, 2020). As a result, they are more of a platform matchmaker than a transportation service. After having problems hailing, there have been ideas that hail a vehicle with nothing more than a tap on a button.

For many years, the taxi business has served as an alternative to public transit. The sector expanded because of the rising population and the public transportation system's failure to keep up with the demand for transportation services, particularly in towns and large cities (Conway, 2018). In Dar es Salaam, the sole taxi transportation option accessible prior to June 2016 was the conventional cab. This cab service presented several difficulties. According to Nhudu (2013), the price structure was not standardised; different rates could apply for the same journey, and customers had to haggle before entering the cab. Another difficulty was that security concerns, such as the possibility of a hijacking, led some stakeholders to question whether it was safe to use or offer the service (Benevenuto & Caulfield, 2019). Additionally, it appeared impossible to confirm the identity of the driver and the vehicle using typical taxi services if any incident needed to be tracked down and recognised. Furthermore, it was difficult to use these traditional taxis because they could only be found at specific taxi stands. To use them, a customer had to go there and choose one or call the driver directly on a personal mobile phone if they already had the number; however, this depended on whether the driver was available (Alley, 2016). A passenger from outside the town centre had to travel a distance to find a taxi because most of the taxis were concentrated in that area, which restricts the accessibility of the taxi service. The next step in this research is to evaluate how well the E-hailing taxi system has handled these issues related to cost, security, and accessibility.

According to Kotler and Armstrong (2017), the price of a good or service is the sum of the values that consumers trade for the advantages of owning or utilising that good or service. It can be quantified and is made up of several factors, including its affordability, fairness, ability to be discounted, competitiveness, and suitability. Price is a significant factor in the transportation sector that influences the accessibility of the service and the fares charged. Price is a crucial signal of quality and can influence consumer value (Zeithaml *et al.*, 2012). Regarding security, Brazil and Kirk (2016) noted that Bolt services decreased drunk driver accidents. Customers have options to choose the mode of payment as Bolt connects the driver and passenger through smartphones so

the passenger can know and evaluate his driver before agreeing to use the service. Following the use of Bolt ride, its advantages include service quality, dependability, nonstop service, safety, comfort, affordability, and driver attitude.

According to Geradin (2015), Bolt is user-friendly, capable of transmitting information about the location of the requested automobile, and allows users to monitor progress using a smartphone. In contrast to waiting for a typical taxi and wondering when it will arrive, a passenger who uses Bolt may track the progress of the Bolt automobile. Passengers can use the Bolt app to easily request a Bolt car to pick them up at their exact location without having to wait in line to hail a taxi or any other form of public transportation. E-hailing service increased perceived utility, usability, playfulness, and subjective norms. It is also evident that Bolt encourages trip bundling and more use of alternate modes of transportation, and this may be a solution to urban traffic congestion.

In South Africa, E-hailing services have taken over as the primary mode of efficient transportation, increasing the prevalence of their services (Thomas, 2019). In a short amount of time, e-hailing services in South Africa have been widely used and have challenged the taxi industry's rules and procedures. The societal benefits of integrating technological innovation and efficiency are extensive. It is very encouraging that E-hailing transportation services will keep expanding their presence in the mobility market and give young people new career prospects. The government regulations, intimidation from other drivers, and fines that could affect their source of income are among the things that E-hailing drivers dread (Hossain, 2021). Other cities around the world have strict regulations governing transportation services, and new market entrants encounter pushback from established suppliers.

People who previously could not drive due to age or a handicap now have access to private transportation, which could boost mobility (Woskowsky, 2014). While e-hailing services may be a side source of income for many vehicle owners throughout the world in their leisure time, the situation in South Africa is different. Most E-hailing drivers do not own their cars; therefore, they must make weekly financial payments to their car-owning partners with little assurance that they will meet their goals (Mao *et al.*, 2020). E-hailing drivers frequently experience harassment from other drivers, hijackings, and even murder. E-hailing drivers are easy prey for criminal activities, and there are several ways to con platform users by creating fictitious online personas. The effects

of E-hailing services on the built environment are complex and might differ depending on a number of variables. Although it offers its passengers a handy form of transportation, it has generated a lot of criticism.

Since opinions on E-hailing services are subjective, many different stories can be told about them (Nelson, 2020). An E-hailing service expands the public transportation system and solves the problems of fluctuating transportation demand, especially for sporadic events that have significant unmet transportation needs (Santi & Ratti, 2017). When public transportation runs at reduced frequencies, like on the weekends and at night, demand for these services frequently peaks at those times. E-hailing services guarantee a flexible supply in response to fluctuating demand, while there is a set supply of traditional taxis. E-hailing consumers are more likely to be young, educated, and wealthy than the overall population (Ghosh, 2020). E-hailing services will continue to be adopted and used more frequently in South Africa, but its scope will be limited to serving those with middle- to high-incomes. E-hailing services have emerged as a desirable option for people looking for transportation without the added expense of car ownership. Due to gaps caused by laws and regulations that have not kept up with the quick expansion of e-hailing transportation services, platform operators are now able to challenge the laws (Khreis *et al.*, 2019). With new and cutting-edge services and options, the market for transportation services is expanding quickly. As cities try to assure mobility, equity, access, and reliability across their systems, this is presenting both exciting potential and unexpected obstacles. Although the impact of E-hailing services on the urban transportation scene is still not evident, consumer interest in them is rising quickly.

According to Fabeil *et al.* (2020), poor public transportation has a history in most African towns, and South Africa is no exception. This is frequently related to the geography of colonialism and apartheid, which saw black neighbourhoods situated outside or peripheral to the city's economic centres. This dynamic is being replicated by the post-apartheid spatial planning (Fabeil *et al.*, 2020). For instance, due to apartheid geography, which divided communities based on race, the majority of black people in Johannesburg reside in townships like Soweto, which are far from the city's economic centre. Black people, who make up the majority but reside distant from places where they can find work, were thus spatially mismatched (Khosa, 1994). Blacks also face issues with poor service delivery, a lack of security guarantees, unreliable transportation, violence, and

pricing volatility, which further strains already-stressed household budgets. Therefore, a reliable and economical urban transportation system is essential for every South African municipality.

Before the introduction of app taxi services, there were only two primary types of taxi service available in urban regions of South Africa: the metered taxi and the minibus cab (Woskow, 2014). The most frequent form of transportation in black townships is the minibus taxi service, which has a long history stretching back to colonialism and apartheid. It reflects black entrepreneurship and is an element of the apartheid geography of capitalism. It first appeared in the 1970s as part of the informal sector's response to subpar transportation services in black townships (Hwang *et al.*, 2015). It represents the agency of black people in order to address the issue of urban transportation and fill the gap created by the government in the provision of public transportation in black townships. It quickly turned into the realm of black company owners (Woskow, 2014). Poor and unstable working conditions have long been a hallmark of the taxi industry, which is frequently conducted as a family business. Close family members and/or friends make up a large section of the workforce, which raises issues with kinship, paternalism, and the absence of a formalised relationship between employers and employees

Over time, the minibus taxi service has developed into South Africa's most popular mode of public transportation, making up more than 65 percent of daily commuter trips (Woskow, 2014). The local municipality registers and issues licences to minibus taxis so they can run in a certain transportation corridor. Rank marshals, who ensure a fair distribution of trips among the drivers, manage the service instead of following a set schedule. Typically, a minibus taxi can accommodate between 10 and 15 passengers, and there are now more than 127,000 licenced public taxis operating in South Africa (Woskow, 2014). The majority of cabs do not have owners, and the work relationship between the drivers and most of them is not formal. The taxi associations for each commuter corridor set their own rates, which are determined by distance. A taxi that travels a long corridor typically charges varied fees based on how far the corridor is travelled (Hwang *et al.*, 2015). The conflict between various owners' and drivers' factions vying to control the industry in a particular location frequently manifests itself in the public taxi service as various types of violence. Since its origin, little has changed regarding this form of public transportation that was created to serve the needs of the poor, black working class in urban areas.

The metered taxis are privately owned automobiles that are run as a form of on-demand public transportation (Daniels & Turcic, 2023). They operate out of predetermined locations in the city or suburbs and charge consumers according to the distance they go as measured by a metre. Even though most of them are required by law to have metres, most of the drivers do not use them and instead negotiate the price with the passenger or, occasionally, arbitrarily declare a fee at the conclusion of the ride (Chen *et al.*, 2015). Most of them are designated as taxis and have a four-passenger limit on their registration. Metered taxis are frequently antiquated, and their fees may be unreasonable and exorbitant. Such enterprises need to be registered with the neighbourhood municipality to operate legally. Numerous cab owners' groups in Johannesburg are in charge of controlling the industry and regulating admission (Woskko, 2014). There were more than 3000 metered taxis operating in the greater Johannesburg area prior to the launch of the platform-based taxi service (Daniels & Turcic, 2023). Metered taxis are avoided by a large portion of the middle and upper classes due to a variety of issues, such as low efficiency, safety concerns, and arbitrary service fees.

Drivers prefer vehicle hire contracts over job relationships because they allow them to work autonomously and receive compensation for their efforts (Fabeil *et al.*, 2020). A fixed weekly cost is paid to a partner to rent the vehicle (Naidoo, 2023). For instance, in Johannesburg, the majority of partners demand a cost of roughly R2,500 per week or R10,000 per month for a Toyota Corolla on Bolt. Shared duties exist between the contract's parties. The driver is accountable for the daily operating expenses of the car, including tolls, gas, and small repairs like tyre punctures. The partner takes on responsibility for the vehicle's major maintenance, which is typically required every 15,000 kilometres (Mlambo, 2023). The organisation and management of drivers' work is not directly under the partners' control. The platform firms, on the other hand, have control over how the work is distributed and levy a service fee (commission) for all the vehicles registered on their platform, which is subtracted from the cost of each trip that is arranged using smartphone technology. The service charge for Bolt is 15 percent. The platforms' commission fees pay for the road accident fund and comprehensive insurance for vehicles, which in 2019 cost roughly R1,800 per month.

They make it clear that they do not work in the transportation industry. The general conditions of the Bolt agreement emphasise to the driver that Bolt does not offer transportation services, but rather provides an information society service (Fabeil *et al.*, 2020). They serve as a marketplace by linking passengers and drivers through the Bolt Platform and Bolt Services, allowing people to move about cities more effectively. Drivers must recognise that they are performing their economic and professional duties by offering transportation services in accordance with a contract for the transportation of passengers, whether they do it directly or through a firm (Mlambo, 2023).

The organisational structure used by platform firms is intended to conceal and obfuscate the true nature of their relationships with partners and drivers (Fabeil *et al.*, 2020). The majority of the drivers who were interviewed made it clear that they are completely dependent on the app for their income and lack any other jobs or abilities that could generate additional revenue. Despite being classified as independent contractors, they rely entirely on the platform for their livelihood. As a result, the power dynamics in the partnership are asymmetrical, and if there is a disagreement between them and the platform firm, there is nowhere to turn (Daniels & Turcic, 2023). In the event of an alleged breach, a driver may be removed from the platform without any previous notice.

Drivers live under continual fear of having their accounts cancelled, which serves as a sort of punishment and management (Naidoo, 2023). Platforms for taxis increase flexibility for users and drivers. It offers consumers a level of safety, convenience, and effectiveness never before seen. The customer can access it at any time by pressing a button. It provides the operator and driver with previously unheard-of freedom and flexibility, such as the ability to choose when to work. The smartphone taxi service is advertised as a way to make money whenever you want without having to deal with your boss's pestering (Daniels & Turcic, 2023). The independence and empowerment of both the operator and the customer are ensured by this type of company and relationship. The platform businesses may assert that they are not in the transportation business, but they actually have direct control over the procedure and the way drivers carry out their duties (Gant *et al.*, 2021). Furthermore, it is impossible to claim that drivers are free when they have no alternative means of support and no choice but to comply. This is seen as an issue of competition that arises in Indonesia as discussed below.

2.4. Gender-based participation and gap in the transport sector

The 2030 Agenda for Sustainable Development of the United Nations calls for an increase in women's participation in the transport sector (Bhana et al., 2021). The Agenda explains its reasoning through its interlinked pillars: universal fundamental human rights, growth, human development, and business. The UN claims that although there has been progress in closing the gender inequality gap in transport, there is still room to improve and increase women's participation in the transport sector (Sattari, 2021). Various reports from China, USA, Mexico, UK and Tanzania, explain the reason for the gender gap and sexual division in the industry as follows: adverse social norms; discriminatory laws and lack of legal protection; lack of access to financial, digital, and property assets (Levant & Pryor, 2020). Additionally, even if women do participate in the transport industry, they tend to be discriminated, which have relatively low earnings, bad working conditions, and limited career advancement opportunities. However, the UN's report on Women's Economic Empowerment maintains that empowering women in the industry would also uplift the development of society and humanity (Ng & Acker, 2020).

Although encouraging and increasing women's participation in the transport sector would serve their greater benefit, many obstacles remain and need to be overcome. Gender inequality and gender segregation of work advantage men (Sattari, 2021). The occupations traditionally filled by women pay less than the ones filled by men (Levant & Pryor, 2020). In regard to the gig economy, a study by Cook et al. (2018) titled *The Gender Earnings Gap in the Gig Economy: Evidence from over a million rideshare drivers* demonstrates the gender gap in the sharing-economy model of private mobility.

2.5. Women-only ride-hailing systems

The safety concerns and mobility of women in cities are topics that have received the attention of ride-hailing companies (Levant & Pryor, 2020). As a result, some ride-hailing platforms have launched women-only services. The ride-hailing service users, both riders and drivers, are women in such services. Female users with safety concerns prefer to have the chance of knowing that they will match with only other women for rides due to the driver and rider pool exclusivity. Weil (2022) calls the women-only ride-hailing systems "pooling systems" and the mixed-gender systems "hybrid systems." According to their research, the safety-concerned female users prefer pooling systems over hybrid systems. SheTaxis, Safr, and Chariot in the US, SheCabs in India, and She'Kab in Pakistan are among the examples of these women-only ride-hailing systems. Women-

only ride-hailing systems are not the first gender-based segregated transportation examples. Mexico City, for instance, is a city where nine out of ten women were victims of sexual violence on public transit during 2019 (Sattari, 2021). Pink public transit is one of the rare approaches of the Mexico City government to promote public transportation ridership and increase safety among female city-dwellers. In this system, there are specific vehicles and train wagons for women and children only. Yet, there is also criticism against gender-based segregation in public transportation (Ng & Acker, 2020). Whether on public transportation or in ride-hailing systems, and whether in the US or around the globe, the safety concerns of female transportation riders and drivers remain a planning and policy problem that requires attention.

2.6. E-hailing transportation and the issue of competition in Indonesia

A sort of alternative to filling the gap in the demand for public transportation and lowering the number of automobiles on the road is the advent of the ride-sharing idea through the E-hailing application (Benevenuto & Caulfield, 2019). Sadly, despite the significant expansion of e-hailing transportation and the beneficial effects it has had in Indonesia, several problems have also surfaced. There are various signs that E-hailing providers are engaged in price, marketing, and discount battles. In Indonesia, there is a possibility of unfair business rivalry in the form of predatory pricing in the E-hailing motorcycle taxi industry, in which two market competitors, Go-Jek and Grab, are active participants (Türker & Tanyeri, 2022). The strategy is to use promotion rates as low as possible to remove their competitors' sales in the concerned market. As a result, the market will be monopolised by the winner, destroying its ecology.

People may gain or lose numerous aspects of their quality of life because of the quick development of technology and Indonesia's economy (Jenn, 2020). These two will inevitably be connected. The contemporary population is facing serious problems related to life quality because of rising migration and fast urbanisation. As a result, one of the problems affecting urban residents' quality of life today is traffic congestion (Oppe & Grün, 2020). The number of privately owned vehicles has significantly increased as the need for owning one has grown. According to some studies, mobility is the primary reason people choose to own and operate automobiles. The ability to move freely and reach any place without difficulty is referred to as mobility (Jenn, 2020).

Another study revealed that the lack of an accessible, functional, and efficient public transit infrastructure is what drives people to utilise and own private vehicles (Daniels & Turcic, 2023). According to Oppe and Grün (2020), with effective public transportation options and transit networks, the rate of car ownership growth might be greatly lowered, especially in urban areas. The rise of ride-sharing models is seen as a transportation option to cover the gap in the demand for taxis and cut down on the number of vehicles on the road. The concept of carsharing is to allow for multiple occupants per vehicle (Zeng *et al.*, 2022). Many city dwellers enthusiastically embrace the E-hailing concept as a breakthrough that benefits them by reducing waiting times and transportation expenses to find a ride because, frequently, the availability of public transportation is insufficient to meet passenger demand.

E-hailing is the practice of ordering a car for transportation through computers, mobile phones, or other electronic devices (Zeng *et al.*, 2022). Applications for mobile phones offer 5 E-hailing services. It works on both Android and iOS. In terms of service commitment, traditional taxi and bike drivers are typically less committed than E-hailing taxi and bike drivers because the former have a tendency to turn away customers during rush hours and occasionally offer high-rate fares (Vega-Gonzalo *et al.*, 2023). As a result, e-hailing transportation gained more traction in Indonesia because of those factors. Garrett Camp and Travis Kalanick introduced ridesharing for the first time in San Francisco, California, in March 2009 with the debut of Bolt, which offers E-hailing services through a cell phone application that was made available to the general public in 2011 (Vega-Gonzalo *et al.*, 2023). The ride-sharing business concept has become widespread worldwide. In the meantime, Gojek launched in Indonesia in 2011. The traditional taxi model has changed as a result of the introduction of E-hailing. At one point, Go-Jek and other E-hailing services like Grab and Ojey turned into an intriguing trend in Indonesian culture.

Customers can currently use the app to register a ride and issue the bill whenever and wherever they like. Hiring E-hailing drivers has made it easier for customers to go around and has also resolved the unemployment issues (Türker & Tanyeri, 2022). Numerous parties, including the traditional cab, whose revenue has been severely damaged by the existence of E-hailing, have raised various significant objections to it (Türker & Tanyeri, 2022). The corporation has just started to expand significantly and penetrate new markets. Given the existence of Go-Car and Grab-Car, E-hailing companies like Go-Jek and Grab logically pose growing threats to traditional taxi

drivers. Demonstrators organised massive protests in Jakarta and other major cities to protest against such E-hailing businesses. Because E-hailing offers more options and lower prices, it can be generally regarded as a great technological achievement by consumers. People will be able to share their goods and services on the platform that connects customers and suppliers, thanks to E-hailing, which transformed the conventional economic model into a sharing economy model. E-hailing has significantly impacted the way the private transportation industry has changed in recent years. Several problems have also surfaced despite E-hailing transportation having significantly increased and having a beneficial impact on Indonesia.

However, the Indonesian Ministry of Services has published a new policy addressing e-hailing transportation to calm the mounting tension (Jenn, 2020). It is described in the Special Rental Services Ministry of Transportation Regulation No. 118 Year 2018 document. The rule was proposed and approved by the Transportation Minister, Budi Karya Sumadi in December 2018, enacted the next day, and put into effect in the middle of 2019. The update addresses the fare cap, minimum service requirements, and suspension implementation (Jenn, 2020). The new rule replaces Ministry of Transportation Regulation No. 108 Year 2017, which was invalidated by the Supreme Court of Massachusetts in 2018. Additionally, it is anticipated that this new policy will encourage more healthy competition between traditional and E-hailing transportation providers. The competition policy has been discussed in the next sub-topic below, which is highlighted following the legislation in Indonesia.

2.7. Indonesian E-hailing competition policy

Modern competition legislation is a type of government intervention in the economy that is primarily meant to spur growth, which will have a favourable impact on Indonesia's GDP (Benevenuto & Caulfield, 2019). Competition law is primarily designed to control the accumulation of market power. Market failure is brought about by market power, which results from imperfect competition. To the detriment of market efficiency, growing market power gives participants in the market a greater opportunity to influence the market price for their personal profit-maximizing benefit. To prevent market players from engaging in anti-competitive activity, which is referred to as "behavioural regulation," competition law presupposes that their behaviour must be regulated (Jenn, 2020). Distribution objectives may be added to the economic efficiency

goals set forth in the competition law. The distribution's varied and frequently debatable goals all aim to produce a more equitable allocation of welfare in society. The inherent tensions between the objective of economic efficiency and the fairness of distribution are frequently addressed by modern competition legislation. Competition law also contributes to indirect welfare.

The implementation of complementary competition policies may be made easier by the application of competition law. Deregulatory competition policies aim to lessen overly burdensome government regulation that may otherwise lessen competition or skew market incentives (Roa *et al.*, 2020). These competition laws could have a significant positive impact on the economy and social welfare. The E-hailing business model's expansion and continued existence are backed by the fact that it took advantage of the interactions between two distinct demands, namely, the need for driving and transit between users and drivers. The E-hailing platform also offers a flexible, interoperable software framework that may be used to develop a brand-new, cutting-edge business model (Bautista-Hernández, 2020). Since other products and services could easily be linked to the platform, E-hailing could easily expand its business product, as done by Go-Food, Grab Food, Uber Eats, Go-Box, Grab Express, etc. As well as the cutting-edge features that E-hailing businesses offer. Thus, it makes the conventional taxi companies is less valuable than the new competitors offer.

But from the perspective of competition, those facts could raise several issues. Although the platform provides new and innovative models, which make the digital market rivalry incredibly dynamic, some people continue to worry that E-hailing businesses may build new profitable services with avoid plans that generate exclusivity (Bautista-Hernández, 2020). In actuality, as opposed to what is typically offered by traditional taxi firms, E-hailing services may offer clients affordable fares. Therefore, customers choose to use e-hailing services in order to get to their location. Benefits of such competition policies have been scientifically quantified and are often large because of this phenomenon (Beck & Hensher, 2020). Some people may wonder whether and how competition law relates to E-hailing activities while talking about the concerns surrounding E-hailing. In essence, the competition law would aid in better comprehension and analysis of the E-hailing industry. E-hailing is a practical application of a business idea that involves two indirect networks between passengers and drivers. Based on the facts, it can be said that competition legislation helps the E-hailing industry manage competition and ensure fair

business practices among competitors (Fabeil *et al.*, 2020). In addition, the Indonesian government must keep a careful eye on the situation and devise the best course of action for all parties, especially with regard to the competition policy and its implementation.

There are several unhealthy business practices prevalent in today's business world (Fabeil *et al.*, 2020). In Indonesia, some businesspeople favour incentives to expand their market share and increase their ability to regulate prices. Entrepreneurs use any methods that can hurt rivals in order to create these market dynamics, such as restricting the market, creating barriers to entry, concluding collusive agreements to set pricing, limiting output, dominating the market, and engaging in other anti-competitive acts (Vega-Gonzalo *et al.*, 2023). Entrepreneur is defined as "an individual person or a company, in the form of a legal or nonlegal entity, established and domiciled or engaged in activities within the legal territory of the Republic of Indonesia, conducting various kinds of business activities in the economic sector through contracts, both individually and collectively (Vega-Gonzalo *et al.*, 2023). Administrators of business competitions were urged to be alert to signs of unfair business competition activity, particularly regarding the problem of e-hailing transportation.

In addition, after the Ministry of Transportation Regulation No. 12 of 2019 concerning Safety Protection of Motorcycle Users Used for Public Interest and the Decree of the Minister of Transportation of the Republic of Indonesia No. KP 348 of 2019 regarding Guidelines for Calculating Fees for the Use of Motorbike Services Used for Public Interest through the Application was both passed (Zeng *et al.*, 2022). There are various signs that e-hailing companies are engaged in a price, fare, and promotion war despite the decree's regulation of the fare issue. In order to avoid a fare war, the Indonesian Business Competition Supervisory Commission (KPPU) must be allowed to do so. KPPU is the only approved institution, and it is responsible for monitoring and enforcing its authority (Daniels & Turcic, 2023). On the other hand, the Ministry of Transportation might not be directly involved in the problem. Since the Ministry of Transportation may only set regulations, it is not allowed to get involved in the enforcement of unfair business practices.

With the current fact, the existence of the E-hailing industry is threatened. As the E-hailing companies are trapped in a cash-burning practice. Thus, one who is not equipped with a great amount of capital will lose because the winner will be monopolizing the market and harming the

ecosystem in it (Türker & Tanyeri, 2022). Typically, if a monopoly occurs, one enterprise will control the market and the price. Thus, consumers no longer have a choice, and this will be a setback for the government and industry as it has already occurred in Singapore and the Philippines (Daniels & Turcic, 2023). The E-hailing sector is being endangered due to their practice of burning through funds, E-hailing companies. As a result, someone who lacks substantial wealth will lose, and the market will be monopolised by the winner, destroying its ecology. A monopoly typically involves one company controlling both the market and the price. Consequently, buyers are left with no options, and the government and business will suffer since it has already happened in Singapore and the Philippines.

The fare will be exceedingly expensive, and services will decline due to a lack of alternatives. As a result, customers essentially become victims (Türker & Tanyeri, 2022). Ultimately, if passengers think the ride is too expensive, they will switch back to private or conventional transportation, which is less time-consuming and more service-efficient. Millions of E-hailing partners who presently depend on these services for their income are in danger of going out of business (Trew, 2019). Therefore, a healthy competition should be a competition of innovation, technology, and creativity, not a competition in terms of providing the highest fare subsidies, especially in the form of exaggerated promotion.

Even if it might be lucrative in the short run, it will be fatal in the long run. For instance, the E-hailing motorcycle taxi sector (ojol), which is dominated by two operators, Go-Jek and Grab, may be subject to unfair commercial rivalry in the form of predatory pricing (Türker & Tanyeri, 2022). The approach is to use a promotional fare that is as low as possible. In Article 20 of Law No. 5 Year 1999, it is stated that "Entrepreneurs are prohibited from supplying goods and/or services by selling without making any profits or by setting a very low price with the intention of destroying or ending the business of their competitors in the relevant market, thus causing monopolistic practises and/or unfair business competition (Türker & Tanyeri, 2022).

Predatory pricing is simple to understand according to conventional theory (Türker & Tanyeri, 2022). The predatory businesses will initially offer fares that are less expensive than those of their rivals. The competition will consequently have to reduce its fare below the going rate. As a result, the rival will forfeit the profit from each passenger-using unit. In fact, the competition will steadily lose market share if they do not provide cheaper prices (Jenn, 2020). However, if the rival offers

cheaper prices till they are below their average cost, they will eventually fail. Once the predatory businesses have eliminated the rival from the market, they will raise their prices as compensation for the revenue they lost by using predatory pricing. Finally, the predatory businesses will monopolise the market and be free to set the prices for public transportation because it is logical for predatory businesses, like any other investment, to think that future earnings will make up for current losses (Trew, 2019).

Later, the belief that the predator companies' potential earnings were not just limited to future gains in the market segment in which they operated was added to the cautious perspective. Predatory behaviour may be viewed as a reputation investment that could pay off by discouraging competitors from entering the market (Jenn, 2020). The benefits from the early predatory event will therefore be increased as a result of these impacts. According to Benevenuto and Caulfield (2019), it is the demonstrative effect that dramatic price lowering in one market can have on the behaviour of current or potential competitors in other markets. Competitors may be discouraged from acting aggressively in Markets B and C if they begin to believe that a multimarket seller's activity in Market A would result in price cuts that are drastic or other greedy responses upon entry or growth.

The discounted present value of the competition-inhibiting impacts its example has in Markets B and C will then be added to the conglomerate's estimated advantage from predation in Market A (Alonso-González *et al.*, 2020). Furthermore, there are particular criteria to establish whether a business is using predatory pricing tactics that have been created by the considerable economic and legal literature. The Areeda and Turner test is among the most important pieces of literature on this situation (Roa *et al.*, 2020). They believe the benchmark for identifying this technique is when a business sets prices below its near-term marginal costs. However, they advise using Average Variable Cost (AVC) data as a stand-in because it is challenging to get information on short-term marginal costs. This conclusion is justified by the fact that no business has ever profited from operating in an environment where prices are below short-term marginal costs.

Without the possibility of long-term profitability, charging below the short-term marginal cost is therefore irrational. Muhammad Syarkawi Rauf, an economist at Hasanuddin University and the former KPPU Chairman from 2015 to 2018, sees the potential for this strategy in the market (Roa *et al.*, 2020). He stated: "In order to expand market share by driving out rivals, they initially try to

sell at a lower average variable cost. Eventually, they will monopolise the market. The consumer will be taken advantage of when a competitor departs the market and the fare is greatly increased." Given that KPPU can only initiate legal action when one of the rival companies actually exits the market, the predatory pricing matter will take a long time to resolve (El Financiero, 2019). Additionally, Law No. 5 Year 1999 Concerning Prohibition of Monopoly Practices and Unfair Business Competition contains the regulations surrounding predatory pricing in Article 20. The harshest punishment is a period of time during which such companies are not allowed to conduct business in the relevant industry, with a maximum fine of Rp25 billion. Comparatively speaking, at the end of March 2018, the government of Singapore fined the ride-hailing business Grab S\$13 million for its agreement to acquire Uber (Beck & Hensher, 2020).

Grab revealed that it had bought the Southeast Asian business operations of Uber. In exchange, Uber received a 27.5 percent ownership stake in Grab (Fabeil *et al.*, 2020). The government enforced the fine because it believed that the business acquisition had broken the laws governing fair competition. A business merger between the two companies will destroy the business climate. The Singapore government considers that the business agreement will have an impact on the application of the fare and is considered an obstacle to business competition (Chen, 2018). The Competition and Consumer Commission of Singapore (CCCS) is the regulator that investigated the acquisition of the business. In the conclusion of the investigation, the commission said the business merger substantially reduced the business competition in Singapore.

Moreover, it was claimed that following a business arrangement, Grab prices increased by 10 percent to 15 percent (Chen, 2018). On the other hand, the driver must contend with a decrease in the number of points earned and find it more challenging to use bonuses. Additionally, the merger discourages potential business and gives Grab the appearance of business exclusivity. There is no longer a choice for drivers or passengers to use services from other businesses (Wang, 2019). The rivalry in the online application-based transportation market in ASEAN nations, including Indonesia, is significantly impacted by Grab's acquisition of Uber assets in Southeast Asia. The purchase of Uber assets by Grab has an effect on Grab's dominance of the online application-based transportation sector in Singapore and other ASEAN nations. In Singapore, Grab is the sole competitor that controls or monopolises the market.

Uber and Grab were rivals in the ASEAN market prior to the transaction (Türker & Tanyeri, 2022). It had a significant impact on the market structure, which had previously been dominated by two businesses with a combined market share of more than 70 percent, before becoming more concentrated in the hands of just one player following the acquisition. The market has transitioned structurally from a duopoly to a monopoly (Daniels & Turcic, 2023). The e-hailing transportation market in Indonesia has also transformed, moving from oligopoly to duopoly. The purchase of Uber assets by Grab has an effect on Grab's dominance of the online application-based transportation sector in Singapore and other ASEAN nations. There was no change in the market's structure as a result of Grab's acquisition of Uber's assets, unlike what happened in Singapore, because Go-Jek is still a sizable local competitor and the Indonesian market is still profitable (Daniels & Turcic, 2023).

The merger regulations in Singapore and Indonesia are generally very distinct from one another due to Singapore's merger notification regime adopting a voluntary merger notice (Alonso-González *et al.*, 2020). The notification system in Singapore is based on the one in the United Kingdom, where the decision as to when to make and submit notifications is entirely up to the party that carried out the merger (Türker & Tanyeri, 2022). The merger regime is optional, but CCCS still has the power to look into merged enterprises on its own initiative if it believes that the corporate activity has severely reduced competition in the relevant market. If it is established that the purchase violates any provisions of the Singapore Competition Act, including Article 54 of the Singapore Competition Act, the CCCS also has the ability to impose and assess the penalty (Jenn, 2020). Whereas Grab, as a lone player, is suspected of making exclusive agreements with drivers, vehicle rental companies, and taxi companies that limit cooperation with other E-hailing players who plan to enter the Singapore Market, CCCS has found that the acquisition of Uber's assets by Grab has so far resulted in a loss of competition and allegedly created a barrier to entry. In fact, there are three new E-hailing companies that have the potential to enter the online application-based transportation market in Singapore, namely Go-Jek from Indonesia, Jugnoo from India, and Ryde, a local player from Singapore (Türker & Tanyeri, 2022).

The competition legislation helps the E-hailing sector manage competition and ensure fair business practices among competitors (Alonso-González *et al.*, 2020). Additionally, the Indonesian government must keep a careful eye on the situation and devise the best course of action for all

parties, especially with reference to the competition policy and its implementation (Jenn, 2020). In actuality, the E-hailing industry's continued existence is in jeopardy. The e-hailing companies are stuck in a process that burns through cash. It is even worse as it has found the potential unfair business competition in Indonesia in the form of predatory pricing committed by the e-hailing motorcycle taxi industry (ojol), which is involved by two operators, namely Go-Jek and Grab (Bautista-Hernández, 2020). The approach is to use a promotional fare that is as low as possible. By eliminating rivals, the goal is to grow market share so that one of them can eventually monopolise the market. When a competitor leaves the market, they will raise the fare incredibly high, and the consumer will be exploited. In addition, the predatory pricing is regulated in Article 20 of Law No. 5 Year 1999 (Roa *et al.*, 2020). The article suggests that entrepreneurs shouldn't sell their goods for incredibly low prices if their main objective is to drive out current competitors and prevent new ones from entering the market. However, because KPPU cannot act until a competitor actually leaves the market, it will take some time to find a solution to the problem of predatory pricing.

On the other hand, it was documented that the risk attitude of individuals was more influential on mobility than the actual mortality and hospitalization rates of COVID-19, especially during the early stages of the pandemic (Zeng *et al.*, 2022). Using data obtained from a web-based survey in the Greater Toronto Area (GTA) in July 2020, researchers showed that the perception of risk and safety has affected individuals' decisions to use ride-sharing services. In another recent study, the authors examined the travel behaviour changes at the beginning of the pandemic in Java Island, Indonesia, using a web-based survey data (Wang, 2019). The results revealed that individuals who took preventative measures for COVID-19 when leaving home were less likely to engage in outdoor activities and more likely to reduce the frequency of using ride-sharing services.

The sharing economy has been booming in recent years, leading to a rapid increase in jobs for youth entrepreneurs in the economy. According to Hossain (2020), in the US alone, the sharing economy sector has created 6.23 million jobs with 78 million service providers, and 800 million people engage with it. The transportation sector is one of the most salient beneficiaries of the burgeoning sharing economy. For instance, commuting to work by shared bicycle (Citi Bike) has become an increasingly popular transportation option (Ford *et al.*, 2019). Ride-sharing services

allow drivers to enjoy more flexibility in work, which has proven valuable to drivers and has improved capacity utilization.

However, the COVID-19 pandemic has brought unprecedented disruptions to many industries, and the transportation industry is among the most disrupted ones (Spiteri *et al.*, 2020). Further, the pandemic has raised concerns about the survivability of the sharing economy in general. It is reported that gross bookings on Bolt rides were down by 75 percent in the three months of April through June 2020, and that Lyft's April ridership was down by 75 percent from April 2019. One important question is whether and how the sharing economy can recover in the post-pandemic economy (Wang, 2019). This is of paramount importance both to the companies within the sector and to the overall economic recovery.

To answer this question, it is crucial to understand the response of platform users to the pandemic and the post-pandemic recovery (Jenn, 2020). China is the first major economy to recover from the pandemic, with most cities returning to normal by the second or third quarter of 2020, which provides an ideal context to study the effect of the pandemic on the industry and post-pandemic recovery. Unlike the traditional taxi market, where taxi drivers rent vehicles from taxi companies and then directly provide transportation services to consumers, modern ride-sharing platforms, including the focal company under study, typically serve as the matching intermediary between drivers and passengers (Jenn, 2020). The profitability of modern ride-sharing platforms (and the sharing economy in general) highly depends on the interdependence or externality between the two sides of economic agents due to the two-sided market nature (Rysman, 2009). Therefore, a ride-sharing platform will benefit from the network effect if more drivers work for it. It is thus managerially important for the ride-sharing platform to understand whether COVID-19 has affected drivers' labour supply patterns and, if so, the magnitude of the effect across drivers and over time.

Because of the potential effect of mobility on the COVID-19 case growth rate (Badr et al., 2020), there is a simultaneity-induced endogeneity concern when estimating the effect of COVID-19's severity on drivers' labour supply. Our analyses indicate that, among all labour supply measures, drivers seem relatively less flexible in adjusting their shift decision in response to new COVID-19 cases: A one-standard-deviation increase in new confirmed cases, which equals 4.39 cases, only

decreases drivers' probability of working by 1.3 percent, which suggests that drivers' decision of whether or not to work is only marginally affected by the pandemic (Bautista-Hernández, 2020).

However, conditional on working, we find that as the number of COVID-19 cases increases, drivers tend to receive more requests from the booking aggregator channel, where passengers can select from a list of service providers (Beck & Hensher, 2020). At the same time, we see a significant decrease in requests received via the focal company's own booking app channel. Such patterns imply that during the pandemic, perhaps due to the shrinkage in overall supplies, passengers tend to switch from a single ride-sharing service provider to booking aggregators, so that they can have a wider range of choices and hence a higher chance of getting a ride (Fabeil *et al.*, 2020). Despite the increased aggregator channel requests, the total number of completed trips from both channels decreases, implying more intensive competition from other ride-sharing companies during the period we study (Beck & Hensher, 2020). We also uncover the structural change in passengers' transportation needs: When COVID-19 is more severe, passengers refrain from taking long-distance trips and, therefore, drive down the average trip distance for drivers; meanwhile, drivers also strategically adjust their scope of search for passengers. As a result, we see a salient decrease in drivers' daily earnings.

Warren and Skillman (2020) found that the pandemic has led to a large reduction in mobility both in the US and globally. The study also finds a strong relationship between mobility patterns and decreased COVID-19 case growth rates for the most affected counties in the US. Zheng *et al.* (2020) conducted a spatiotemporal analysis of taxi demand and supply in Shenzhen, China, using data from the first three months of 2020. Their findings indicate that, after reopening, the recovery of taxi travel was largely behind the recovery of overall vehicle travel; most drivers significantly cut back work hours, and many adjusted their work schedules to focus on peak-time travel. Nian *et al.* (2020) analyzed the impact of COVID-19 on taxi usage in Chongqing, China. They find significant effects of the epidemic on the number of taxi trips, travel speed and time, and spatial distribution of taxi trips. The study also estimates the impact of COVID-19 on business failures among small and medium-sized enterprises (SMEs) in seventeen countries. The bankruptcy rate of the transport and storage sector is calculated to increase from 7.64 percent to 13.28 percent due to COVID-19. Kim *et al.* (2020) found that, in the early phases of the pandemic, small businesses

and their owners experienced unprecedented disruptions of up to a 40 percent drop in weekly revenues, expenses, and consumption.

In the taxi industry, it has been demonstrated that drivers exhibit reference-dependent preferences (Crawford & Meng, 2011), respond positively to both unanticipated and anticipated increases in earning opportunities, strategically respond to surge pricing (Miao *et al.*, 2021), overtreat passengers under a usage-based pricing scheme, and are strategic in location choices (Buchholz, 2017). In the ride-sharing industry, prior research has demonstrated flexibility in drivers' schedules and labour supply, and the importance of external incentives. For instance, Chen *et al.* (2019) found that Uber drivers earn more than twice the surplus they would in less flexible arrangements. Chen (2019) also found that Uber drivers have a higher capacity utilization rate compared with taxi drivers. We find that drivers' labour supply and location choices are affected by confirmed COVID-19 cases after accounting for endogeneity, and the effect is stronger when the city is under the top-tier emergency level than under the lower-tier emergency levels.

Polyakova *et al.* (2020) showed that while COVID-19-induced excess mortality is higher for the older population, the economic damage is higher for younger adults between 25 and 44 years old experience employment displacement of 11.6 percentage points, compared to 1.8 percentage points for those who are over 85 years old. Weill *et al.* (2020) found that social distancing responses to COVID-19 emergency declarations vary by the income level of the region: wealthier areas decreased mobility significantly more than poorer areas. COVID-19 has exacerbated socioeconomic inequalities, and the economic hardship experienced by people in lower occupational ranking has led to much higher prevalence of expressing adverse mental health. Blundell *et al.* (2020) found that COVID-19 has exacerbated many existing inequalities in terms of income, age, gender and ethnicity. For instance, younger workers and those with low incomes have a higher probability of losing jobs during the lockdown.

In Malaysia, E-hailing services have been around before the pandemic, with average bookings, but the number increased during the COVID-19 crisis when most people were relying on it. Since E-hailing services were introduced in Malaysia during the epidemic, the public has widely accepted E-hailing services as their form of transportation to ensure their safety while travelling (Verbergt & Schechner, 2019). The E-hailing service was introduced due to the complicated systems of taxi

services in Malaysia to help transport individuals to and from the places of their choice. The failure to make the most of the transportation business, as well as gaps in traditional transportation networks, has led to increased use of E-hailing platforms by the majority of people, particularly in Malaysian cities. Poor public transport infrastructure and the presence of vehicles with low costs compared to local taxis and public transport systems were among the reasons for the growing interest in E-hailing services.

Another reason for people to get away with public transport includes a high motorisation rate, traffic congestion problems, and inadequate infrastructure (Frost & Sullivan, 2016). The methods utilised to address these problems, which involved the services and the drivers' remuneration, were crucial to the development of E-hailing services in Malaysia. This has automatically pushed away the use of public transport, such as taxis and buses. The safety of consumers was another issue that was brought up. In its capacity as the regulatory authority in charge of E-hailing services in Malaysia, APAD ordered all E-hailing operators to speed up the use of the panic/SOS button in the service applications and intensified background checks for all E-hailing drivers (Land Public Transport Commission; SPAD, 2017). Looking at E-hailing services in South Africa as compared to Malaysia, there has also become a high demand for this service to help passengers reach their destinations in a timely and cost-effective way. The service is said to have helped in providing travellers with an immediate and alternative transport solution, which is fast, affordable, and convenient. E-hailing services became the most desirable and acted as an alternative mode of transportation, which also covered preferences and behaviours associated with their services. This was shown by a further increase in the use of the E-hailing service during weekdays.

The adoption of E-hailing Services in Malaysia focused on utilising the existing taxi fleet, rather than private vehicles, for consumers (Alon *et al.*, 2020). During the COVID-19 pandemic, E-hailing services became the largest company with many significant market shareholders in almost every major city. The success of E-hailing services started to show up in numbers in many cities since the pandemic started. MyTeksi was a forerunner and a brand name for Grab created by a start-up company in Malaysia (Fabeil *et al.*, 2020). Managed by Anthony Tan and Hooi Ling Tan in 2012, the company pioneered and introduced the concepts of e-hailing service, which initially focused on utilising the existing taxi fleet, rather than private vehicles, for Malaysian consumers. As of June 2013, the service had an average of one booking every eight seconds, or almost 10,000

bookings per day (Cosseboom, 2015). Meanwhile, Uber was introduced in Kuala Lumpur, with a soft launch in October 2013 (Gabey Goh, 2014). However, only the premium services, Uber Black, were offered. The services also differed from the concept of MyTeksi, as privately owned vehicles were used as the main transportation fleet.

This form of service caused Uber to be deemed illegal as the specifications did not meet with transportation laws of Malaysia at that time (Fatimah Zahirah, 2017). Hence, Uber had to withdraw the investments made in Southeast Asia by April 2018 and was quoted with enormous losses due to the hasty exit. The survey, which was based on Uber, an e-hailing firm before the service exited the Malaysian E-hailing market, also found that a lack of parking places had also influenced people's decision to use e-hailing services rather than drive their own cars (Daniels & Turcic, 2023). This was further demonstrated by the rise in the amount of time spent using the E-hailing service on weekdays, which involved travel between home offices and home meetings. According to the same report, E-hailing services were preferred by 30 percent of respondents over owning a personal vehicle by a 14 percent margin.

This turn of events made Grab the single largest E-hailing service company and most significant market shareholder in e-hailing services with operations in almost every major city in Southeast Asia (Daniels & Turcic, 2023). The success of Grab saw the company having a network of 2.7 million drivers across South-East Asia, operating in eight countries and servicing over 196 cities (Grab Malaysia, 2019). Rebranded as Grabcar in 2016, the company offered not only E-hailing services but also other mobility services currently such as Grab Food and mobile payment (Chan & Wang, 2020). The E-hailing service market has since been saturated with new E-hailing start-up companies that have tried to gain a share of the market.

E-hailing service sectors were predicted to be worth RM354 million in 2018 and beyond, growing at a pace of 15.3 percent annually (Statista, 2018). RM is the Malaysian ringgit, denoted by the RM symbol and currency code MYR, serving as Malaysia's official currency. According to research on the high level of interoperability between public transportation and E-hailing among Malaysian users (Nielsen, 2015), E-hailing may be used as transit in a transportation network. Studies have also shown that E-hailing services complement public transit rather than posing a danger as a whole, which has increased and improved urban mobility (Hall, Price, and Palsson,

2017). According to studies approved by the Land Public Transport Commission (SPAD) in 2015, 28 percent of commuters used three or more public transportation options each day for their daily commute (Nielsen, 2015), with taxis being one of those options.

This finding was supported by Uber data from 2017, which showed that 25 percent of Uber rides in Malaysia and Singapore began or finished at a train station (Jinn Xiung, 2017). Since E-hailing services have the potential to grow in popularity, regulatory organisations should look for opportunities to become involved and ensure that the rewards are fairly and widely distributed. According to the Land Public Transport Commission (SPAD), 2016 initiatives pertaining to the E-hailing service include regulating the application as an intermediary service. With the government's legalisation of e-hailing services, the enforcement agency now has the required regulatory ability to fully monitor and control the E-hailing market in Malaysia (Daniels & Turcic, 2023). With significant projects like the Mass Rapid Transit (MRT) networks being developed, together with many government initiatives, E-hailing services will be able to become a reliable form of transportation in Malaysia (Jenn, 2020). Unquestionably, the E-hailing service will develop further and support all forms of transportation in the future.

The acceptance of E-hailing as a service has been sealed and legalized as a result of adjustments made to two legislation that control Malaysia's public transportation system (Roa *et al.*, 2020). The service, which was at first perceived as disruptive in the early years of adoption, is now embraced by the government, users, and rivals alike and is seen as an addition to the current public transit system. E-hailing services becoming legal also creates a new area that can be controlled to ensure that all parties involved gain from the inclusion (Bautista-Hernández, 2020). Lower prices and regulated E-hailing services would help the consumer as well. Overregulation by the government, however, can have an impact on the sector, particularly the drivers, and may ultimately slow the expansion of the E-hailing industry. Future research on the effects of these restrictions on E-hailing service stakeholders, particularly the drivers, should thus be thoroughly examined (El Financiero, 2019). The E-hailing service would benefit from the developing trends of regionally based E-hailing businesses since the industry is still competitive and has undiscovered markets and regions to explore.

The legalisation of E-hailing services adds new elements that are regulated and make sure that all parties involved gain (Bautista-Hernández, 2020). Additionally, the legislation was done to control

the market and create a level playing field for current transportation providers. Even though this is the case, the industry, particularly the drivers, is negatively impacted by the government's excessive application of regulations, which could slow the expansion of E-hailing services (El Financiero, 2019). As the industry remains competitive, with new markets and locations to explore in South Africa, the rising trends of locally based businesses can help the E-hailing service to continue to thrive. Along with other attempts put forth by the government to make E-hailing services a long-term mode of transportation, major projects like the Mass Rapid Transit (MRT) systems are being planned (Clark, 2020). There is no question that the E-hailing service will develop further and support a variety of transportation modalities in the future.

In Australia, public transportation is slowly making a comeback, and people have begun to ride trains while wearing masks. On the other hand, E-hailing is expanding even further (Hossain, 2021). Despite the fact that this is the case, it should be noted that Australians were considering using e-hailing services as their primary form of transportation due to the cheaper costs, safety, efficiency, and convenience they offered (El Financiero, 2019). During the epidemic, there were growing worries about hygiene and social isolation, which suggested a need to reconsider the public transportation policy. Citizens were forced to rely on their personal vehicles and E-hailing services because there was a lack of the necessary supply of public transportation services. Despite this, there is still a great demand for developing creative, intelligent urban transportation modes (Ghost, 2020). Modern technology-based E-hailing transportation services have entered the market, expanding the scope of the transportation industry. Australia's metropolis progressively grew accustomed to the availability of E-hailing services that accepted customers from open areas without any reservations.

The provision of online booking capabilities and the deployment of smartphone-based applications to draw more customers have resulted in a rather quick change in the way that transportation services are provided (Verbergt & Schechner, 2019). The expansion of e-hailing transportation services in Australia places a strong emphasis on the creation of jobs for the sector's potential young workers. However, in the E-hailing segment of the economy, drivers appear to be struggling with their jobs and encountering difficulties. On the other hand, Alon *et al.* (2020) contend that E-hailing drivers have more chances for self-employment, flexibility, and income potential than those

who previously worked in the sector on a full-time basis. However, there appears to be a mixed level of job satisfaction in the sector, with safety being one of the issues.

In Europe, the rise of the ride-sharing idea through the E-hailing app is regarded as a kind of alternative to filling the gap in the demand for public transportation and lowering the number of automobiles on the road (Wilmoth, 2020). E-hailing transportation services involve using computers, mobile phones, or other electronic devices to order a vehicle. Sadly, despite the rapid expansion of e-hailing transportation and the beneficial effects it has had in Asia, several problems have also surfaced. There are several signs that businesses are engaged in a war of discounts, rates, and promotions. There is a chance for unfair economic competition in the form of predatory pricing in the E-hailing motorcycle taxi market, in which two other local transportation markets, Go-Jek and Grab, compete (Mao *et al.*, 2020). Local transportation in Indian cities competes with ride-hailing services by providing as cheap prices as they can, hoping to drive out their rivals' customers. This demonstrates that the future of e-hailing transportation services is in jeopardy.

However, the Indonesian Ministry of Services has published a new policy addressing e-hailing transportation in an effort to calm the mounting tension. The Ministry of Transportation's Regulation No. 118 for the Year 2018 on Special Rental Services provides a definition (Verbergt & Schechner, 2019). The rule was proposed and approved by the transportation minister Budi Karya Sumadi in December 2018, enacted the next day, and put into effect in the middle of 2019. The update addresses fare caps, minimal service requirements, and suspension implementation. The new rule replaces Ministry of Transportation Regulation No. 108 of the Year 2017, which was invalidated by the Supreme Court of Massachusetts in 2018. Additionally, it is anticipated that this new policy will encourage more healthy competition between traditional and E-hailing transportation providers.

Nigeria, one of the biggest E-hailing markets, is the most populous nation in Africa (Chen *et al.*, 2020). The nation's digital E-hailing business produced millions of dollars in sales and made up 15 percent of the African continent by the year 2020 (Hossain, 2021). Uber's transportation service in this nation, particularly in light of the epidemic, stimulated the transportation sector. Since then, a number of local startups have begun to operate, changing the way that people view mobility and the jobs that are available in the nation's transportation industry. The E-hailing transportation

service in Nigeria gives drivers, many of whom represent Nigeria's entrepreneurial youth, a tangible source of income; however, drivers have little autonomy over their working conditions and must pay relatively high platform intermediary costs with few occupational benefits (Mao *et al.*, 2020). Additionally, legislative ambiguity leaves E-hailing drivers unsure of their rights and runs the danger of limiting investment-led expansion in the industry. In order to provide a plan for regulating the governance structures and procedures that have an impact on the newly developing class of employees, notes have been presented to the labour authorities, transportation regulators, and digital platforms in Nigeria (Khreis, 2019).

2.8. Transport and health amid the COVID-19 outbreak

Transportation is an important factor influencing an individual's mobility and health in the communities (Steedly, 2019). However, lockdowns across the world have led to significant changes in mobility, with fewer transport services on the roads (Ranscombe, 2020). E-hailing transport services were allowed to operate amid the fear and panic of the global outbreak of COVID-19 under strict hygienic protocols. Bolt supported the government's implementation of measures to contain the COVID-19 pandemic because the health of drivers, riders, and employees is of utmost priority to them. It took extensive measures to help minimise the transmission of the virus (Bautista-Hernández, 2020). They engaged with the Department of Health and the National Institute of Communicable Diseases to proactively manage risks of exposure," country manager of Bolt South Africa. Drivers had been given hygienic protocols, as recommended by the World Health Organisation (WHO), and the procedures to follow when they had concerns regarding possible exposure to the virus. In addition, Bolt said it has closed its Driver Centres until further notice (Steedly, 2019). It said drivers with any concerns were encouraged to share them through the app or contact the platform via email. All Bolt drivers and passengers were encouraged to act responsibly and approach concerns around COVID-19 with caution, referring only to trusted resources such as the Department of Health or WHO for information," Taylor said (Steedly, 2019).

The impacts of the pandemic on intercity travel and movements within and across urban regions have been significant. Governments enacted regulations to decrease the likelihood of corona/virus transfer from person to person (Bhaduri *et al.*, 2020). Such action was based on the knowledge that

human mobility is one of the key factors contributing to the spread of infectious diseases worldwide, and a strong positive correlation between infectious diseases' spread and traffic volume is evidenced (Wu *et al.*, 2019). As a result, it is believed that transport has had a significant impact on the spread of COVID-19 across the world. The advent of commercial flight has allowed infectious diseases to spread much faster and more widely than ever before. The number of people who use commercial flights per year is over 3 billion (Parady *et al.*, 2020). Since an airplane is an enclosed space and air travel would require an infected person to be in the same place for a relatively long time, a commercial flight could become a catalyst for spreading infection inside an airplane, causing even more people to become infected.

This mode of transmission applies to COVID-19 as well, and not only for airplanes but also with all modes of transportation that utilize similar environments (Parady *et al.*, 2020). It has already been identified that high transmission of COVID-19 occurs between passengers of cruise ships due to the enclosed environment on cruise ships and the high population densities of such cruises. Moreover, the fact that cruise ships travel from country to country impacts the spread of COVID-19 between countries (Wu *et al.*, 2019). For this reason, many countries have closed their borders and placed restrictions on interregional travel since the start of the COVID-19 pandemic to prevent the spread of the disease.

On January 23, 2020, the Chinese government issued strict orders for quarantine and inter-regional travel bans for people living in Wuhan and 16 other cities; this represented a quarantine order that involved 45 million people (Naidoo, 2023). However, by the time the travel restriction order was issued, China was already in the middle of the New Year holiday, and spring festivals had already begun two weeks earlier, meaning that several hundred million people had been moving around the country. Consequently, it was determined that such extensive movement of the population significantly impacted the spread of COVID-19. Moreover, travel restrictions and quarantine policies delayed the spread of the epidemic from Wuhan to other mainland areas by only three to five days (Mo *et al.*, 2021). It was determined that the implementation of containment measures to close the areas affected by the outbreak of the disease was too late.

Border closure or the containment of the area where the disease outbreak occurred means banning the movement of people from one region to another, and because modern society relies mostly on modes of transportation for such movement, this, in essence, means the restriction of transportation

(Parady *et al.*, 2020). A study by Lee in South Korea reported that domestic automobile traffic influenced the spread of COVID-19, whereas a study by Mo *et al.* (2021) in China indicated a correlation between domestic train transportation and the outbreak of COVID-19. Based on these findings, it is believed that the amount of traffic influenced the outbreak of COVID-19 (Kartal *et al.*, 2021).

Domestic and international travel has been restricted since the emergence of COVID-19 (Mo *et al.*, 2021). The most definitive method of doing so was border closure; however, long-term border closure is very difficult to implement, except in finite circumstances. Two major policies that the government used to control the spread of the virus are decreasing regular outside-the-home daily activities and restrictions on inter-city travel (Carteni *et al.*, 2020). Such actions are based on the prior knowledge that human mobility is one of the key factors contributing to the spread of infectious diseases worldwide, and a strong positive correlation between infectious diseases' spread and traffic volume is evidenced (Wu *et al.*, 2019). Therefore, utilizing mobility data can provide a reliable indicator of the degree of COVID-19 spread and the effects of pandemic control policies. Kartal *et al.* (2021) also stated that between some mobility indicators (e.g., trips for grocery, retail, and workplace) and the number of infected people, they have witnessed an econometric causality relationship. However, some types of mobility, such as walking and driving, do not seem to have an influence on the pandemic according to (Kartal *et al.*, 2021).

There have been many contributions in the literature to study the impact of COVID-19 on transport system usage and how the pandemic has changed travel patterns (Lee *et al.*, 2020; Mogaji, 2020). There is also a limited number of studies investigating the effects of mobility on COVID-19. For instance, Hadjidemetriou *et al.* (2020) examined the effect of government control measures on reducing human mobility and the relationship between the patterns of human mobility and the severe consequences of COVID-19 (e.g., death). Their results demonstrated a significant impact of mobility on the pandemic. In another study, Carteni *et al.* (2020) used regression analysis to estimate the effect of different variables on the spread of the virus in Italy. The results showed that mobility habits, environmental variables (such as temperature and pollution), the number of tests per day, and the proximity to the location of the first outbreak were significant in the model.

However, the variable representing mobility habits was the most statistically significant variable explaining the number of COVID-19 cases, which indicates the importance of the impact of mobility on the pandemic. The analysis done in Mo *et al.* (2021) estimated that during their one-month study period on the transit system in Singapore, with its highly used and dense transit system, without any control enforcement on the public transit system, the number of infected people could have increased by 100 times. Therefore, preventive and controlling behaviours are the most effective measures to control the spread of the epidemic (Kartal *et al.*, 2021). The impact of mobility on COVID-19 spread is a complex relationship, and various factors play a part in it. Findings in terms of overall travel with significant decreases in trips for school and work and increased use of private vehicles and active transportation modes (bicycling and walking) were reported across different countries (Abdullah *et al.*, 2020).

Although that is the case, this has affected the transport industry and the economy. Sobieralski (2020) studied the airline industry, which experienced a reduction in the capacity of major carriers by 60 to 80 percent. He argues that volatility spikes have a slight effect, but employment follows similar trends in relation to average volatility over time. Using VAR (Vector Autoregression), this study shows that the decline could last for many years and that employees at airlines will be most impacted, with approximately 7 percent displaced initially, but the upper bound of the estimated reduction may be over 13 percent of the airline workforce. The most significant reductions are seen by major carriers rather than low-cost and regional airlines. Low-skilled employees will face deeper cuts than others. Monmousseau *et al.* (2020) found that airlines reacted differently to restrictions imposed by governments on travel. They examine the effects on passenger arrivals of bans and closures imposed by Italy, the US, and the European Union, using Customs and Border Patrol (CBP) and Bureau of Transportation Statistics (BTS) data and also social media data from both airlines and passengers to gauge the extent not only of cancellations and service changes, but also of passenger sentiments and assessment of service.

Looking at the transport side, there were measures put in place, including commuter trains being shut down, a ban on cruise ships entering ports (Makhaye, 2020). Minibus taxis were only allowed to travel essential workers, and taxis were sanitized between each trip and could only operate at certain times, from 05h00 to 09h00 and again from 16h00 to 20h00. Metered taxis and e-hailing services were only allowed to transport essential service workers and those people permitted to

make movements, on conditions that they must be sanitised after every journey (Wu *et al.*, 2019). However, the number of passengers each vehicle is allowed to carry was significantly reduced. For example, a vehicle licensed to carry up to four people was permitted to load one person, while a vehicle permitted to carry up to eight passengers will only be allowed to carry three passengers. In addition, public transport services were only permitted to move during the morning and afternoon. Operators were encouraged to put in place physical distancing, which was possible and suitable in metered taxis and e-hailing vehicles that were only allowed to transport essential workers only on the hours put in the morning and late afternoon (Bouknight & Schenkman, 2020). Buses were also limited to travel by essential workers only.

The impacts of the disease and responses to it have been uneven. Mogaji (2020) describes how government lockdown orders and movement restrictions in emerging economies with high population densities, poor transportation infrastructure, and large informal economies may be largely ineffective, and reports on the impacts of the pandemic on social, economic, and religious activities in Lagos, Nigeria. Social distancing, mask wearing, and compliance with protective actions are also more limited in countries like Ghana (Dzisi & Dei, 2020). Socioeconomic and household factors, including motor vehicle or motorcycle ownership as well as the presence of virtual services such as e-commerce, home delivery, ridesharing, and other technological factors, affect behaviour in Jakarta as in wealthier countries (Irawan *et al.*, 2020). In countries such as India, government-imposed lockdowns created an urgent need to transport stranded migrant workers back to their hometown locations (Maji *et al.*, 2020). Accounting for the surge in cases using a modified susceptible-exposed-infected-removed (SEIR) model, they estimate the train and bus fleet requirements to repatriate migrant workers. The pandemic and the response to it have led to more integration between public health and transportation models and databases, which are further explained and discussed below.

2.9. Public transport classification

According to Jenn (2020), cities are regarded as the best growth engines for the transportation sector. Cities' ability to function depends on the flow of people, goods, and information. As they expand, the importance of motorised modes of transportation in creating integrated multimodal public transit systems increases (Pal, 2016). A major component of transport modes in a major

metropolis is passenger transportation services. Individual mobility demands cannot be taken into consideration because public transportation normally accommodates a large number of people and follows set routes and schedules. The lack of necessary public transportation services forces people to rely on private automobiles (E-hailing). A generalised desire for a private automobile becomes increasingly linked to social status in society (Beck & Hensher, 2020). Despite the fact that this is the case, vehicle traffic congestion poses a significant problem and has a negative influence on the social, economic, and environmental spheres.

In the past, providing for individualised requirements and desires has always been a priority for taxis and other for-hire cars (Türker & Tanyeri, 2022). However, urban residents' needs for mobility are becoming more diverse and dynamic. Innovative, shrewd urban transport alternatives must be created in order to transition away from a lifestyle dependent on automobiles. Modern technology-based E-hailing services have opened up new opportunities in the transportation sector (Oppe & Grün, 2020). Even though that is true, there has been ongoing conflict between older and newer for-hire businesses, calling for more definite regulatory measures. This leads to the next step regarding how public transport after COVID-19 is operating, which is further uncovered below.

2.10. Public transportation pre-COVID

Increased motorization in cities for high levels of human mobility poses a danger to their sustainable urban planning, which has an impact on environmental stability and traffic safety (Türker & Tanyeri, 2022). While the lower and middle classes rely on mass and paratransit for urban transportation, the higher and middle classes have a part of their own cars. For-hire passenger transport services (also known as "E-hailing") are in high demand in urban areas for door-to-door personal needs. There are 2.4 percent more cars in India than there are worldwide (Urban Emissions, 2015). The middle-class population expanded from fifteen million in 1991 to 160 million in 2011, which represents a significant shift in the population's makeup (Su *et al.*, 2011). Better transportation services and a greater readiness to pay more for them became evident as the population segment with higher disposable income significantly grew. Hanif and Sagar (2016) discovered that with Mumbai's middle-class and wealthy populations as well as the corporate world's growing transportation needs, cab services are effectively growing.

In Kolkata, street-hailing cabs were the standard means of transportation and served to transport passengers from public spaces without any advanced reservations (Qin & Li, 2010). The market share of taxis is influenced by things like average household income, the accessibility of other forms of transportation, the cost and convenience of parking, etc. Private hire vehicles (PHVs), another type, operated at negotiated rates and were required to return to a "home base" between journeys in order to avoid soliciting customers on the streets (Oppe & Grün, 2020). All of these variations offered a crucial mobility choice that included door-to-door services unmatched by any other modes outside the private vehicle. In this state, passenger transportation during post-COVID is looked into.

2.11. Passenger transportation post-COVID

A California Public Utilities Commission (CPUC), which was described as an organisation that provides prearranged transportation services for pay using an online-enabled application or platform to connect passengers with drivers using a personal vehicle, intersected with Transportation Network Companies (TNC) (CPUC, 2016). On-demand information technology-based transportation aggregators are the name given to contemporary taxi aggregators in India.

According to Zeng *et al.* (2022), the number of E-hailing transportation services has been rising quickly, starting with street-hailing cabs, moving on to radio cabs, then taxis offering online booking options, and lastly, taxis using smartphone-based applications to draw in more clients (Qin & Li, 2010). The taxis that operate on the so-called "e-hailing" app-based platform connect drivers and passengers in real time and effectively balance supply and demand through resource allocation. The main technologies that E-hailing transportation services rely on are global navigation system services like GPS, ubiquitous cellular and Wi-Fi access, online payment systems, and big data analytics for example, algorithms for digital supply and demand matching as well as for determining fair pricing (Daniels and Turcic, 2023).

The centralised platform matches the demand and supply in real-time and connects the parties (Jenn, 2020). The mobile device-based app platforms use digital maps based on navigation services to track the drivers and passengers using latitude-longitude coordinates. Additionally, it offers the fare taking into account any potential surcharges during periods of high demand (Daniels & Turcic, 2023). As a result of the sophisticated technology and algorithms used to calculate service metrics,

pick-up and waiting times are reduced while productivity is increased. Taxi route planning, map matching, hotspot analysis, and driver-passenger bidirectional search are all made possible by the smart data analysis (Xie, Yan, and Zhou, 2014).

The business uses prediction algorithms and the resulting heat maps to forecast projected demand at various times of the day in order to ensure that there are enough cars available at the appropriate location and time (Hwang & Elish, 2015). The databases that the platforms manage contain data on signed-up customers, drivers, and vehicles, as well as trip information including pick-up and drop-off points, travel routes, and timing. A tremendous amount of big data is essential to the app cab services' whole business strategy. Along with direct operational data, they also gather consumer preferences data to provide clients with bespoke service (Cordray, 2015).

With a market worth more than USD 60 billion in early 2016, Uber is the most well-known CTA globally, followed by Bolt (International Transport Forum, 2016). Other regional businesses with comparable business strategies include Didi Chuxing in China, Cabify in South America and Spain, BlaBlaCar in France, Ola in India, and Lyft in the United States. The competition among app-based cab services is fierce because they all use comparable technological interfaces and business strategies. With many looking out for an alliance, smoother and effective business, new entrants such as E-hailing services are also trying to have a go at the market share (Jenn, 2020). In India, operators such as Uber, Ola, and TaxiForSure are operating successfully in the transport industry. There have been misunderstandings about whether these are to be treated as radio-taxi or cab aggregators. The central government, through its budget for the financial year 2015–2016, clearly defines an aggregator as a person who owns and manages a web-based software application. By means of the application and a communication device, it enables a potential customer to connect with persons providing service of a particular kind under the brand name or trade name of the aggregator” (Shah, 2015). This makes it suitable to look into the influence of the sharing economy on public transportation, as highlighted in the following explications of the literature studied thus far.

2.12. The influence of the sharing economy on public transportation modes

The sharing economy, commonly referred to as "collaborative consumption," is a broad variety of inventive and entrepreneurial activities in which consumers exchange privately held commodities

with one another beyond the bounds of the conventional corporate paradigm (Winterhalter *et al.*, 2015). Economy sharing is a new economic paradigm in which surplus goods or services are transferred and used once more by individuals or groups over the internet (Wang *et al.*, 2019). Through online forums, these businesses give customers access to goods or services they do not own and enable owners to recoup their investment (Barnes & Mattsson, 2016). The sharing economy aims to protect natural resources and foster a sense of community as an alternative to conventional distribution channels (Belk, 2010). As a result, the sharing economy reflects a global willingness to shift away from excessive consumption and toward more practical, sustainable solutions to problems that arise on a daily basis (Parguel *et al.*, 2017). The emergence of the sharing economy has been made possible by the online market and its capacity to make it easier for consumers to find available service providers, make reservations, conduct financial transactions, and share their experiences.

Peer-to-peer business models' rise over the past ten years has given numerous people all over the world the ability to make money by sharing their underutilised assets. This phenomenon has been popularly referred to as the "sharing economy" and was encouraged by widespread technical developments (Schor, 2016) as well as by the alleged emergence of a new "sharing culture". Alternative labels for this phenomenon include "collaborative consumption", "access-based consumption", "peer-to-peer marketplaces" (Cullen & Farronato, 2014), and the phrase "collaborative economy" (favoured by the European Union). However, due to criticism of the word "sharing" in the phrase "sharing economy," some opponents, like Nordic trade union organisations, now refer to it as the "platform economy" (LO, 2016a). The sharing economy remains a notion with broad use but no shared definition or theoretical coherence, despite attempts to propose a general typology of the phenomenon (Cohen & Muoz, 2015; Martin, 2016).

The sharing economy has been conceptualised broadly to encompass a range of different interaction modalities, including peer-to-peer, business-to-consumer, business-to-business, and even government-to-government (Codagnone *et al.*, 2016). For our purposes, we define the sharing economy as "a reciprocal exchange process, mediated through a digital platform, whereby individuals share their personal goods with others for use", rather than the broader definition of being a peer-to-peer exchange of physical resources. Participants in the ongoing public discussion concerning the benefits and drawbacks of these new peer-to-peer business models include public

institutions, academics, politicians, and platform representatives. Conflicting frames rule the public discourse, as Martin (2016) points out in a review of news coverage of sharing platforms. However, public discussion and scholarly attention have tended to centre on a small number of commercially successful platforms, like Airbnb and Uber, making the discussion frequently susceptible to exaggerating specific difficulties that do not apply to smaller, more localised sharing services.

The advantages of the sharing economy for fostering communities, promoting social interaction, and generating social capital have been the subject of numerous studies, some of which claim that sharing is an underlying anthropological or neuroscientific propensity (Agyeman, 2013). For instance, a study by Möhlmann (2015) on German users of Car2Go and Airbnb indicated that a sense of belonging to the community was a major factor in their frequent use. A few upbeat parties have even claimed that the sharing economy is a reaction against the 20th-century hyper-consumption, emphasising access over ownership and allowing people to utilise what is referred to as the "excess capacity of products and services" (Belk, 2014). Given that many users have utilitarian motivations, one of the main advantages of the sharing economy for consumers is the availability of more options at lower prices. For example, a recent study by Eurobarometer (2016) found that the advantages of sharing are primarily financial or related to convenience, while a study by Deloitte (2015) on the sharing economy in Switzerland found that 65 percent of respondents thought lower cost was an important advantage of sharing services.

Böcker and Meelen (2016) surveyed Dutch internet users and discovered, not surprisingly, that economic motivations were particularly important for lower-income users. The sharing economy's development of microbusiness prospects is a point frequently made by its supporters. Sharing platforms can boost the economy as a new source of employment, generating revenue from previously untapped sources (Alkhatib, Bernstein, and Levi, 2017). For vulnerable groups who may be typically excluded, such as those with criminal records or low educational attainment, the comparatively low entry barrier is especially advantageous. According to a Pew survey (Smith,

2016) conducted in the US, 80 percent of respondents said that ride-hailing services offered career prospects, while 85 percent of respondents thought that home-sharing services offered a handy way to make money. However, public discourse has not solely served as a utopian advertisement for the expansion of sharing services.

While it has been demonstrated that the sharing economy creates new avenues for earning money, earnings on platforms are also highly variable. For instance, Fuster Morell *et al.* (2016) found that earnings are modest and, in some circumstances, not even enough to satisfy basic necessities in smaller-scale ventures. According to a Pew survey (Smith, 2016) conducted in the US, 80 percent of respondents said that ride-hailing services offered career prospects, while 85 percent of respondents thought that home-sharing services offered a handy way to make money. However, public discourse has not solely served as a utopian advertisement for the expansion of sharing services. While it has been demonstrated that the sharing economy creates new avenues for earning money, earnings on platforms are also highly variable. For instance, Fuster Morell *et al.* (2016) found that earnings are modest and, in some circumstances, not even enough to satisfy necessities in smaller-scale ventures.

Sharing services, according to critics, will damage established employment ties, resulting in increased income disparity, subpar working conditions, job insecurity, and a power shift in favour of platforms that will result in the emergence of a "new precariat" (Hill, 2015). Since regulatory frameworks are not yet sufficiently strong to accommodate the rise of peer-to-peer business models, the regulatory environment of the sharing economy has also become a hotly debated subject. A rigorous evaluation of the net balance between the positive and negative effects of the sharing economy is necessary to support proper regulation. The existing state of scientific evidence surrounding platform activities, however, prevents this.

Only a restricted number of public entities or researchers have access to the data, stats, or operations of sharing platforms (Jenn, 2020). The majority of the data that is currently available has been created and analysed by platforms, either directly or indirectly, using a combination of academics and researchers engaged by platforms (Hall & Krueger, 2016). Replicability and transparency are impossible with such data. Therefore, it is necessary to largely refrain from making any assumptions about the veracity of the platform and the results in claims. The sharing

economy has shown extensive growth in terms of user numbers across all socio-demographic categories in the European setting.

This paper, which supports the sharing economy, urges EU members to cooperate at the EU level to prevent regulatory fragmentation and to apply five existing laws to platforms rather than enacting new regulations (Hall & Krueger, 2016). The European Union and commercial sharing platforms have also engaged in some amount of active discussion (Jenn, 2020). Commercial sharing platforms, including Uber and Airbnb, urged the Member States to "ensure that local and national laws do not unnecessarily limit the development of the collaborative economy to the detriment of Europeans" in an open letter sent to the Netherlands Presidency of the Council of the European Union in February 2016. Ranchordas (2016) did this by pointing out the advantages of sharing services. On a regional and sectoral level, the high-level regulatory reaction, however, has been mostly dispersed. For example, local councils or city administrations continue to be in charge of transportation and hospitality regulation, while individual states make decisions about more general social and labour regulations (Alkhatib *et al.*, 2017). There have been regional prohibitions, like as those that prohibit Uber in cities like Berlin, Brussels, Spain, and Denmark, among others.

For instance, in response to the sharing economy, Brussels changed its regulations on tourist lodging to ensure consistency between the experiences of shared spaces and those of hotel rooms, with hosts obligated to provide comparable hospitality services (Ranchordas, 2016). The city of Paris and Airbnb came to an arrangement that adds the city's tourism tax and administrative district tax to the total amount paid by guests and is directly deposited by Airbnb (Smorto, 2016). The UK established Sharing Economy UK (SEUK) as a new trade organisation to represent the sharing industry in 2015, to lead the expansion of the sharing economy. A response to an independent evaluation of the sharing economy was also published by the UK government (UK, 2015), and the Competition and Markets Authority intended to examine the commercial activities of online "intermediaries" (Lougher & Kalamanowicz, 2016). In order to promote transparency, the House of Lords looked into online platforms and the EU digital single market policy (House of Lords, 2016). Overall, it is evident that the expansion of numerous commercial sharing platforms, the scope of their economic and social impacts, and the competing stakeholder interests have turned the sharing economy into a hotbed of controversy and verbal argument. It is befitting to explore

more patterns of ride-sourcing, looking at small and large cities, as indicated in the following paragraph.

2.13. Patterns of ride-sourcing services between small towns and large cities

The study of Alsaleh and Farooq (2022) presents the hourly, daily, and monthly distributions of the demand for ride-sourcing services in Innisfail and Chicago pre- and during the COVID-19 pandemic. Overall, it is observed that the demand in Chicago is much higher than in Innisfil. This is most likely due to the considerable difference in the population density and land area as well as in the attractions and recreational activities available in both locations. The average daily demand in Chicago was about 203,365 trips in the pre-pandemic period and 45,127 trips during the pandemic, while in Innisfil, the average values were about 216 and 153 trips per day for the pre- and during-pandemic periods, respectively (El Financiero, 2019). Before the pandemic, the demand was highest during the late afternoon period in Innisfil and the late afternoon and evening periods in Chicago on both weekdays and weekends. Among the days of the week, the demand was the highest during the weekdays in Innisfil and during the weekends in Chicago. These patterns remained the same during the pandemic. However, the pandemic had a strong impact on the demand levels, and these effects varied significantly between the two locations.

On average, the hourly and daily demand values in Innisfil were reduced by 30 percent during the pandemic, whereas the hourly and daily demand values in Chicago were 80 percent less compared with the pre-pandemic levels (Roa *et al.*, 2020). This might be due to the difference in the use purposes of the ride-sourcing services between the two locations. The highest reduction in the demand in Innisfil on both weekdays and weekends was during the night period. Moreover, among the days of the week, weekends experienced a higher reduction level in demand. In Chicago, however, we observed a consistent and sharp decline in demand across all times of the day and across all days of the week (Bautista-Hernández, 2020). Even though the pandemic affected all trips, these findings indicate that non-work-related trips were most impacted by the closure of non-essential businesses. It can also be noticed that the reduction levels in the monthly demand varied

over time. Both locations encountered a repeated pattern of a sharp decrease in the demand followed by a gradual recovery. The highest reduction in the monthly demand was observed in January 2021 during the second wave of COVID-19 at 52.9 percent, and the lowest in July 2021 following the end of the third wave at 8.5 percent (Bautista-Hernández, 2020). On the other hand, Chicago experienced the highest decrease in the monthly demand during the first wave in April 2020, at 97.5 percent, and the lowest in March 2020 at the beginning of the pandemic, at 58.6 percent. When delving into e-hailing transportation, it is important to look at how public transportation is replaced according to the dictates of time, as elucidated below.

2.14. E-hailing as a potential replacement for public transportation

Transportation is one of the businesses most impacted by the COVID-19 pandemic, which has caused extraordinary disruptions across several sectors (Levine & Rubenstein, 2017). Drivers merely cut back on the number of shifts they worked in reaction to the outbreak because they depend on providing ride-sharing transportation to make a living. As the number of cases increased, drivers also demonstrated substantial aversion by modifying their search for passengers to make fewer trips and, as a result, earn less money (Alon *et al.*, 2020). This, in turn, caused the transportation industry to experience significant economic disruptions. The COVID-19 epidemic has directly contributed to import and export delays that have hampered commercial activity and raised tensions in the world transportation industry. This pressure is a result of the adjustments required to maintain a competitive edge while also preserving public health. Due to COVID-19 safety restrictions, there was a considerable demand for E-hailing services (Roma & Aloini, 2019). Compared to public transportation, e-hailing provides enough room for social distancing and ventilation. According to Alon *et al.* (2020), measures for an online platform to access more clients and boost economic activity are urgently needed. According to Wilmoth (2020), E-hailing plays a big role in the transportation sector, although they are currently subject to considerable constraints because of the COVID-19 pandemic's intense pressures.

Although it's a popular misconception, mobile app cabs do not always serve as a replacement for traditional taxis. They replace driving a personal vehicle and even have an impact on market shares for public transportation and paratransit. App cabs produce new trips that would not have existed

without them (Wilmoth, 2020). Apathy for traditional taxi services was sparked by issues such as outright refusal of short-distance clients, cherry-picking of long-distance passengers, poorly maintained cars, rigged metres, overcharging, harsh negotiations, impolite behaviour, and frequent strikes over unrealistic demands (Alon *et al.*, 2020). Traditional taxis and aggregator services differ primarily in terms of convenience, offering instant services, quality, cleanliness, comfort, and onboard safety, as well as control, with transparency regarding the amount invoiced. App-cabs, often known as "E-hailing," are therefore considered a viable alternative to public transportation.

According to Alon *et al.* (2020), E-hailing services can supplement public transportation because they cover the first and last mile (the distance between a commuter's starting point and final destination) for modes with defined routes, like rail and bus. Even if that is the case, it can be utilised in place of both public and private transportation. E-hailing transportation services, according to Murray (2016), are a supplement to public transportation networks since they help with the "last mile" issue. E-hailing services encourage using public transit more frequently and result in shorter wait times (Wang & Odoni, 2016). The majority of people appear to have switched to using E-hailing services as the easiest and safest form of transportation during the pandemic (Alon *et al.*, 2020). The numerous available modes of transportation are directly impacted by the E-hailing transportation services. Most commuters also typically benefit from e-hailing transportation services, which make it simple, accessible, and give mobility to access vehicles. Even though this is the case, E-hailing services encourage sharing and lessen the chance of coming into contact with COVID-19.

According to Clewlow and Mishra (2017b), the use of bus and taxi transportation decreased by 6 percent as a result of E-hailing services. However, this was demonstrated by a rise in the proportion of E-hailing users who use the commuter train. Depending on the user and the available modes of transportation, it is possible to claim that e-hailing services can serve as both a replacement and a complementing method (Alon *et al.*, 2020). E-hailing services showed a complementary connection in the sector, even if they might supplement or replace some sources of transportation. When compared to the normal bus and taxi rider, E-hailing services' price competitiveness makes it more likely that the typical train user will utilise one (Geitung, 2017).

E-hailing services have allegedly disrupted the market for transport providers, prompting protests from many existing taxi drivers and transportation companies around the world (Alemi *et al.*,

2017). The introduction of E-hailing services is currently the subject of intense controversy. Violent attacks by transport companies have been made against E-hailing drivers in South Africa. Transportation service providers take matters into their own hands, alleging unfair competition and requesting that government regulation and policy execution surrounding E-hailing services be implemented (Burke, 2017). However, legislators are still ignorant of E-hailing services, indicating the necessity for more thorough research. With a huge variety of linked mobile devices all around the world, the sharing economy has grown to be more significant than ever. Because private transportation is movable and accessible, E-hailing services have been effective.

The development of E-hailing and connected network technologies may cause commuters to alter their preferred modes of transportation (Alemi *et al.*, 2017). In other words, E-hailing services have established direct rivalry with both private and public transportation because they have shorter wait times, lower transportation costs, and other favourable trip qualities. The growing usage of transportation technology services can influence how people travel by making more options available, lowering travel uncertainty, and even replacing or enhancing other forms of transportation (Alemi *et al.*, 2018). E-hailing services may help to reverse South Africa's trend of rising vehicle ownership (Vandershuren & Baufeldt, 2017). In this instance, the study is designed to look at the influence of E-hailing on the taxi industry as discussed below, looking at different factors.

2.15. Influence of E-hailing on the traditional taxi sector

There has been a lot of discussion about how E-hailing services would affect regular taxis. Some of the points have already been brought up (Litman, 2019). E-hailing companies provide a serious competitive threat to traditional taxi services. Based on the topics below, a thorough examination of how E-hailing services affect the traditional taxi sector is offered.

2.15.1. Market share

The conventional taxi industry is most directly impacted by the loss of market share. Wallsten (2015) found that the demand for traditional taxis has gradually declined as a result of Uber's entry into the market. The number of taxi trips in New York fell by 8 percent between 2012 and 2014. The change was even more noticeable in San Francisco, where 65 percent fewer passengers hired

taxis in the two years after Uber's debut. As a result of the rise of e-hailing services, according to Zailani Isaisuludin, president of the Malaysian Association of Taxi, Rental Car and Limousine Drivers, the income of taxi drivers in Malaysia has plummeted by 70 percent. (Kannan, 2018). Similar to this, Port Dickson's major bus terminal cab drivers complained that they only make about RM20 per day due to competition from E-hailing service drivers (The Star Online, 2018).

Given the market for E-hailing services has experienced rapid growth, this market share loss is not unexpected. However, E-hailing services have also helped the market as a whole flourish (Litman, 2019). According to a SPAD survey, the bulk of E-hailing service users are between the ages of 18 and 24 and are brand-new customers. According to the regulator, there may be a market potential for the traditional taxi industry because the overall market demand has increased as a result of these new customers (Zeng *et al.*, 2022). Some cab drivers have also noticed that specific groups favour cabs. It appears that tourists in Kuching pick cabs due to worries about safety when travelling a long distance. This leads to the driving behaviour that is detected in the E-hailing industry.

2.15.2. Driving behaviour

Many cab drivers and operators have chosen to use E-hailing service technologies in response to increased competition (Kannan, 2018). This may increase money, as was already said, but it will also alter how people drive. Working during peak hours is crucial to optimise potential profits because the technology employed by E-hailing services expands the number of potential fares that may be received in a given time period. Because they are used to operating in a certain way, this may, in some ways, alter how cab drivers who are currently employed function. By this state, various issues arise even after COVID-19 in the E-hailing transportation industry, which is also important to look into. This is included in the discussion below.

2.16. Post-COVID-19 issues in e-hailing transportation services

Due to its nature, which occasionally functioned above the restrictions imposed on the traditional economy, regulators regarded the sharing economy to be disruptive (Mae, Adriano, Chadwick, and Su, 2017). The complexity of the transactions involved was also decreased by tying needs and supplies together. Hence, regulatory concerns about the application of E-hailing services became

a significant obstacle that needed to be addressed. Baker (2015) revealed these four obstacles to be labour regulation, consumer protection regulation, property rights, and discrimination of services. These worries arose since E-hailing businesses used comparable business structures all around the world, including Malaysia (Fassbender, 2016). Since E-hailing services were introduced in Malaysia's transportation sector in 2012 or 2013, the general public has extensively recognised and accepted E-hailing services as a means of an alternate form of transportation (Frost & Sullivan, 2016).

However, E-hailing services were formerly thought to be unlawful in Malaysia because no laws were in place to control them (Sukumaran, 2015). The offered services were viewed as disruptive as well, as they significantly reduced the need for traditional transportation services like taxis. An open confrontation between taxi drivers and E-hailing service providers was frequently observed at that time. E-hailing services also offered better fare structure, affordability and convenience, which was lacking in other modes of public transport (Mae *et al.*, 2017). The government had tried to find a balanced approach to managing E-hailing services as early as 2016. The Land Public Transport Agency, better known as APAD under the Ministry of Transport Malaysia (MoT), was tasked to find a solution to address the illegal use of E-hailing services. An amendment to the Land Public Transport Act was suggested and tabled in the parliament, which was gazetted in 2017. As of July 2019, APAD had already allowed 44 E-hailing companies to operate legally (Land Public Transport Agency (APAD), 2019a).

Therefore, although being considered chaotic, the government of Malaysia eventually recognised and legalised the E-hailing industry (Fatimah Zahirah, 2017). The government's decision to make e-hailing services legally recognised in accordance by amending the Land Public Transport (Amendment) Act 2017 (Interpretation of E-hailing; Amendment of First Schedule (a) In Item 1, Subsection (ii)). The second amendment to the legislation was made in the Commercial Vehicles Licensing Board Act 2017, Amendment of Section 2 (a) Interpretation of E-Hailing; (b) Interpretation of Intermediation Business License; (c) Classes and Categories of commercial Vehicle; Amendment of Section 14, Subsection (1b) and amendment of Section 33 Prohibition of Use of Unlicensed Public Service Vehicle (Government of Malaysia, 2017). The effects of the amendment are noticeable through the inception of critical regulation, such as E-hailing would be legally recognised by the authority, hence the requirement for TNCs to apply and have a license

before starting the operation and apply for an intermediary business license (Baker, 2015). As such, all e-hailing transactions must be facilitated by a third-party intermediary that facilitates the booking between drivers and users.

The effects of the amendment are seen in the introduction of important regulations, such as the requirement that TNCs apply for and possess a licence before beginning the operation and apply for an intermediate business licence because e-hailing would be legally recognised by the authority (Vallat, 2016). As a result, a third-party middleman who arranged the booking between drivers and users must facilitate all E-hailing transactions. Vehicles used for E-hailing will now have to comply with Public Service Vehicle (PSV) regulations. The government was able to address difficulties with labour regulation, consumer protection, and property rights by legalising the services and e-hailing business (Clewlow & Mishra, 2017). These changes were also made to regulate the sector and level the playing field for current transportation providers. The Land Public Transport Agency (APAD) may set particular guidelines through these regulatory organisations in order to ensure that the E-hailing business and E-hailing drivers are operating legally (Fassbender, 2016).

Many current E-hailing drivers are discouraged by the cost of compliance and the related expenses that result from the legal restrictions, and this discourages new recruiters to the platform (Clewlow & Mishra, 2017). Therefore, in order to comply with legal standards, E-hailing companies must reevaluate both their chosen business model and the rates paid. The model already in use by the taxi companies served as the foundation for all of these rules (Todd *et al.*, 2018). For instance, the traditional taxi industry mandated that drivers get a PSV vocational licence before being permitted to operate a vehicle. Since the regulatory requirements were implemented in the E-hailing sector, the process of obtaining those licenses would be troubling and costly for the average E-hailing driver and those who drove part-time (Ngo, 2015).

The period in getting these licenses was also brief, with the measures announced in March 2019 and immediately enforced by July 2019. By July 2019, E-hailing drivers must comply with the requirements, as drivers who were found to drive without PSV and EVP would be liable for fines or jail terms upon conviction (Teoh, 2019). E-hailing drivers needed to comply with more requirements than the TNC, which had left additional costs on E-hailing service drivers. With the measures being announced in March 2019 and coming into effect right away by July 2019, the time it took to obtain these licences was equally brief. Drivers of E-hailing services must abide by

the rules by July 2019; failing to do so could result in penalties or jail time if they are found to be driving without PSV and EVP (Teoh, 2019). Drivers of E-hailing services had to pay extra fees because there were more regulations to follow than those set by the TNC.

A new travel service sector has emerged thanks to the E-hailing platform. The E-hailing platform, with the participation of capital, can cultivate the economic habits of both the supply and demand sides through subsidies, quickly reach the basic market capacity required for the platform's economic development, and change the life cycle of the Internet platform enterprises (Benevenuto & Caulfield, 2019). From the perspective of matching expansion, the E-hailing platform is based on its own diversified elements and conducts rapid trial and error to achieve continuous and incremental innovation in business development. From the perspective of matching monopoly, the E-hailing platform has the characteristics of a bilateral market, and it is easy to form a monopoly position of winners, but the implementation of mandatory monopolistic behaviour will pose a threat to diversity (Roa *et al.*, 2020). Instead, the monopolistic behaviour of the platform under the stimulus of profit induces and presses on capital. The E-hailing car platform performs the social duties of supplying and coordinating urban quasi-public transportation as an economic organisation.

There are more possibilities for travel for people. Platform-making principles organise loose and varied market elements for urban traffic managers and lower the cost of controlling individuals (Roa *et al.*, 2020). They marketize the supply of commercial to enrich it and do not rely on government subsidies. The development of the E-hailing car platform has been fraught with difficulties, including external policy pressures, how to adapt to the platform's role, how to strike a balance between supply and demand, and how to carry out the social governance function in addition to the economic matching function (Fabeil *et al.*, 2020). The key difficulties and obstructions are as follows: The economics of the platform have been restricted by the e-hailing automobile policy. The foundation of the platform economy is the market spirit of “free choice”. There is no absolute freedom. Any economic action must be established under certain management and control. The original intention of the E-hailing car policy was to safeguard consumer rights and regulate the industry's competitive order (Fabeil *et al.*, 2020). However, in terms of actual development, different regions have distinct aims, different methods, and varied execution outcomes from the industry's competent authorities.

Overall, stringent control has been adopted in most locations, which places restrictions on the E-hailing automobile platform's ability to generate revenue. The E-hailing car platform should maintain its impartiality as a matching company. However, as the market grows, so do the industry standards and the power of the E-hailing car platform. Pricing is a factor in almost all platforms for e-hailing cars (Türker & Tanyeri, 2022). The purpose of using the platform for negotiation is condensed. Commissions are typically charged by platforms, administration costs are more obscured, and the percentage of the price formation structure has not changed much. A portion of the platform that simultaneously runs B2C and C2C services suffers from an unfair and opaque distribution system (Türker & Tanyeri, 2022). In addition to carrying out economic matching, the platform also performs social tasks, including preserving information security, preserving the privacy of users, and protecting their lives and property. Many vicious episodes of passengers' life and property safety have been violated as a result of the ineffective assessment of the E-hailing car platform and the inadequate security system, which has had a major negative influence on the credibility of the E-hailing car (Hamza, 2016).

In May 2015, Wuyun.com, a Chinese Internet vulnerability disclosure platform, published 59 security flaws related to taxi software that affected as many as nine manufacturers. In 2016, a serious data breach occurred at Uber, with the names, email addresses, and phone numbers of 57 million passengers, and the names and driver's license numbers of about 600,000 American drivers leaked (Hamza, 2016). Whether it is possible to establish a comprehensive and reliable safety management system has become a sword hanging over the head of the E-hailing car platform. The emphasis on the uniqueness and originality of supply-demand connections from the perspective of a particular area and time, as opposed to classic price-quantity analysis, is one of the novel points: creating a unique supply-demand analytic system using a platform-based distribution system as a foundation and using information technology to create virtual organisations with chosen rules that can respond in real-time to specific demand and diversify the transportation sector (Hamza, 2016). Studies on the issues that have arisen since local governments implemented E-hailing rules offer an overall management system made up of ministerial-municipal forces and E-hailing platforms. It is therefore imperative to also explore Bolt as an E-hailing transport service, with the hope of showing the importance of this sector.

2.17. E-hailing (Bolt) transport service

Bolt is an Estonian mobility company that offers ride-hailing, micro-mobility rental, food and grocery delivery through the Bolt Food app, and car-sharing services (Teixeira & Lopes, 2020). The company is headquartered in Tallinn and operates in over 500 cities in more than 45 countries in Europe, Africa, Western Asia, and Latin America. The company has more than 150 million customers and more than 3 million driver and courier partners (Romero *et al.*, 2020). The company has plans for an initial public offering in 2025. Bolt was the second most affordable on average, at R234 per trip, followed by Uber, which cost R243 per trip. While Uber's prices were similar to DiDi and Bolt in Gauteng and Cape Town, it was far more expensive in Gqeberha. Bolt charges a 15 percent to 20 percent commission from the final price per order, depending on the city (Hotel *et al.*, 2020). Commission fee applies to both cash and card rides and cancellation fees. The commission does not apply to tips, bonuses, or additional airport or toll fees. The commission is calculated automatically and deducted from the weekly earnings.

Bolt has introduced a service for women only that lets female passengers request rides from only female drivers (Jenelius & Cebecauer, 2020). The Bolt platform will only allow female drivers and female passengers to connect; male drivers will not be able to see a female passenger's request for a ride. Bolt Women Only rides have the same price as those in the standard Bolt category; there is no additional fee for this service (Teixeira & Lopes, 2020). Through a cooperation between Bolt and the national safety platform Namola, drivers and passengers using Bolt's Women Only service are safeguarded by an app-integrated SOS emergency button. If there is a medical or security emergency while a Bolt ride, passengers and drivers can connect to private armed response teams, private emergency medical services, and roadside assistance by pressing this SOS button (Chen & Pan, 2020).

“Gender-based violence is a reality that women across South Africa contend with every day,” says Bolt South Africa country manager Gareth Taylor (de Haas *et al.*, 2020). “Women Only, a service that is exclusively for and driven by women, should not be needed, but unfortunately, it is. Bolt has also allowed women drivers to have protective security screens installed in their vehicles to further boost safety, at no charge to them. These thick Perspex screens are installed between the front and back seats and create a safe and effective barrier between the driver and passengers (Dzisi & Dei, 2020).

Despite the fact that more than half of passengers that use Bolt in South Africa are women, and research shows that women own 38 percent of South Africa's micro, small and medium-sized enterprises, less than 5 percent of drivers using Bolt are women (Hotle *et al.*, 2020). "In the same way that women have embraced E-hailing as passengers, women want to participate in the E-hailing sector as driver entrepreneurs," says Taylor. "It offers them flexibility and empowers them to balance other interests and responsibilities such as child and family care, studying, and other income-generating activities" (Jenelius & Cebecauer, 2020). However, women's enthusiasm to enter the E-hailing sector is balanced by personal safety and security concerns. World Bank research shows that 64 percent of women cited security as a reason more women do not sign up to become E-hailing drivers.

According to Bolt (2023), Bolt Women Only was introduced in a pilot phase in East London and Rustenburg in November. Following a positive response from drivers and passengers, Bolt's Women Only is now available in Johannesburg, Cape Town, Durban, Pietermaritzburg, Port Elizabeth, Mthatha, Polokwane, Thohoyandou, Mbombela, and Emalahleni. Bolt's registration process for drivers includes verifying their identity, including whether they are male or female, making it possible to confirm that only women drivers can access the Bolt Women Only category (Jenelius & Cebecauer, 2020). Women drivers using this Bolt service are not penalised if they cancel a trip if they are expecting to collect a female passenger, and a male passenger is waiting for them at the agreed collection point.

Bolt has announced a new affordable offering it calls Bolt Go (Chen & Pan, 2020). While rides will cost 20 percent less than regular Bolt rides, the real draw of Bolt Go is that it opens the service up to more drivers. With Bolt Go, drivers with a hatchback will be able to access the Bolt platform for the first time. "Smaller hatchback cars are less expensive to purchase, have lower maintenance costs, and are more fuel-efficient to operate than Bolt's regular larger sedan cars. These lower operational costs also enable Bolt Go fares to be significantly more affordable," country manager for Bolt in South Africa, Gareth Taylor said in a statement (Romero *et al.*, 2020). Bolt says that it will launch Bolt Go in "secondary provincial cities and towns" with a launch in large urban areas planned, but not detailed at this stage.

The ride-hailing platform says that drivers with a hatchback will be restricted to using Bolt Go, but drivers with a sedan may use Bolt Go during quieter periods (Chen & Pan, 2020). The Bolt Go

category is open to standard hatchback cars in good condition with low mileage, that pass a 45-point safety inspection, and that seat at least four passengers in addition to the driver. Bolt anticipates that popular models will include the likes of Volkswagen Polo Vivo, Datsun Go, and Toyota Etios. Drivers who want to join Bolt will still need a Professional Driving Permit and have to pass a criminal background check before they join (Teixeira & Lopes, 2020). As we are still facing the COVID-19 pandemic, safety precautions have to be followed for all trips as well. “Our focus is on the thousands of South African drivers who rely on Bolt to connect them with passengers and earn a steady income, and enabling them to continue to earn that income to care for their families and loved ones,” Taylor concluded (Naidoo, 2023). It is important to include the advantages of E-hailing transport services when delving into it and is discussed and explained below.

2.168 Advantages of E-hailing (Bolt) Services

The emergence of E-hailing services has had a considerable impact on the taxi and public transportation industries in various nations due to recent technological improvements and the simplicity of mobile apps (Alon *et al.*, 2020). Numerous studies on the economic impacts of E-hailing services have been conducted as they have grown in popularity from three different angles: the impact on consumers, the impact on E-hailing drivers, and the impact on the traditional taxi industry. The advantages of E-hailing (Bolt) services were explored and explained in detail in the following countries: the United States, China, Europe, Australia, India, Malaysia, Mexico, Indonesia, Singapore, and South Africa.

2.18.1 Customers' Market

The advent of E-hailing services has given consumers a far greater range of options for private hire transportation (Alemi *et al.*, 2018). This additional choice promoted competition in healthy markets, which reduced consumer costs and improved the services provided. In Malaysia, E-hailing services have seen a largely positive response from customers, with 80 percent of them preferring them to traditional taxis (Premananthini, 2016). These new technologies do, however, come with risks for consumers, such as those linked to safety and the potential for anti-competitive behaviour. The next angle includes reduced expenses in the next sub-topic.

2.18.2 Reduced expenses

It is difficult to predict precise price comparisons because the bulk of E-hailing firms employ dynamic pricing algorithms (Thomas, 2019). The concept enables surge pricing at specific times based on consumer demand and the commensurate supply of drivers. Although regular taxis frequently raise their rates during rush hours, this approach is less flexible and unpredictably applied than the surge pricing used by e-hailing companies (Alon *et al.*, 2020). E-hailing services only charge based on the distance travelled, in contrast to regular taxis in Malaysia that charge based on both distance and time. In the USA, the cost of an e-hailing service is often less than that of a traditional taxi. The cost of private hire transportation has decreased as a result of its accessibility and pricing policies. In the majority of the major American cities, Uber is less expensive even without the tip for the taxi driver (Silverstein, 2014). Based on calculating the prices for a 10-minute, 5-mile drive in a car moving at 30 mph with no wait times or surge pricing. When the 20 percent gratuity for taxi drivers is taken into consideration, traditional cabs are no longer less expensive in New York and Philadelphia.

The iPrice conducted a study in 2016 on the relative costs of various rides offered by Uber, Grab, and traditional taxis throughout Southeast Asia (Alon *et al.*, 2020). In Malaysia, according to iPrice (2016), Grab was the most affordable choice for short (5 km) journeys, whilst Uber was the most affordable for longer (20 km) excursions. Similar research was conducted for Malaysia in particular by Ooi (2016), who found that Grab is now the service of choice for many users because to its cheaper average ride costs compared to Uber, taxis, and hired cars (Wilmoth, 2020). Although operations for Uber and Grab in South-East Asia, including Malaysia, have since been consolidated, the data used in both of these analyses was from 2016 (Alon *et al.*, 2020). Prices for E-hailing services are likely to have increased somewhat because there is less competition and less traffic as a result of these changes. Due to this, certain trips now cost less with regular taxis than with E-hailing services (Aris, 2018). E-hailing services are generally less expensive than traditional taxis, yet traditional taxis may still be less expensive for some trips during peak and off-peak hours, depending on the level of surge pricing.

Taxi drivers, however, refuse to measure their rides precisely and insist on bargaining with customers directly (Alon *et al.*, 2020). As a result, taxi drivers currently charge more than users of E-hailing services. Traditional taxis have also been accused of intentionally making their trips longer to charge extra. Over 9,000 complaints about taxis were made in 2014, with the refusal to use metres, taking the longer route, and unsafe behaviour being the top three concerns (Sukumaran, 2015). These strategies resulted in higher fees, which increased the competitive advantage of E-hailing services since prices are calculated automatically, and users can follow the route being taken. This instance leads to the convenience and comfort of E-hailing transport services.

2.18.3 Convenience and comfortability

Users have profited from e-hailing services since they provide greater comfort and convenience in addition to lower prices (Roa *et al.*, 2020). As was previously said, traditional taxis have been accused of refusing to use metres or purposely making trips longer to charge more. The openness of E-hailing services eliminates these behaviours because the process of setting prices and selecting routes is automatic. Another advantage of using an E-hailing service is the option to request a ride rather than waiting for a car to stop on the street. Premananthini (2016) claims that a Malaysian survey did, in fact, discover that consumers preferred E-hailing services to traditional taxis for accessibility reasons.

According to a Singaporean survey, E-hailing firms had higher levels of customer satisfaction than traditional taxis (Lim, 2017). In every relevant category, including waiting times, ease of booking, understanding of services, and comfort during the trip, the survey found that E-hailing services fared better than taxis. In terms of safety, client satisfaction, and driver knowledge of routes, E-hailing services also outperformed taxis (Roa *et al.*, 2020). The major distinction between E-hailing services and conventional taxis was how simple booking was, demonstrating the importance of convenience in swaying consumer choice for E-hailing services.

Transparency, convenience, accessibility, and comfort are just a few of the many innovations that E-hailing services have introduced (Chen, 2018). Another is the use of customer loyalty programmes that provide points based on travel that can be exchanged for rewards. Balachandran and Ibrahim's study looked at the relative importance of these various factors on consumer satisfaction with E-hailing services. Out of all the other factors, it was found that comfort had the

biggest influence on consumer satisfaction, followed by price, reliability, promotion, and coupon usage. This conclusion was supported by Dhillon (2017), President of the Malaysian Consumers Movement, who also pointed out that E-hailing services are more practical and efficient than conventional taxi services (Roa *et al.*, 2020). Although the emergence of E-hailing services had a positive impact on consumer prices, it was hinted that other factors, such as comfort and convenience, may have contributed as much to customers' demand for E-hailing services as they did, if not more. It is also important to look at broader benefits so that it becomes visible how E-hailing transport services are advantageous in the transport sector. This is discussed below.

2.18.4. Broader benefits

The economy as a whole gains from the increased use of E-hailing services by consumers beyond the benefits for the individual consumer. Due to the network's inconsistent coverage, according to the National Land Public Transport Master Plan (2015), only 20 percent of Malaysians use public transportation. Because of this, there is an increase in the use of private vehicles, which causes congestion. Malaysians spend more than 250 million hours each year stuck in traffic, according to the World Bank (2015). In 2014, this resulted in economic losses of 1.1 percent to 2.2 percent of GDP (RM12.7 billion to RM24.7 billion). Evidence from other countries indicates that E-hailing services sustain the existing public transit system (Rayle *et al.*, 2014). E-hailing services have increased city dwellers' transportation options, especially in congested, large cities like San Francisco, where parking is scarce and public transportation is inadequate. The authors concluded that E-hailing services enhance rather than replace public transit. E-hailing services can therefore lessen traffic congestion. Li *et al.* (2016) looked into and compared how Uber's entry affected clogged streets in American cities. According to their research, E-hailing services like Uber significantly reduced the time and money spent stuck in traffic as well as the expense of doing so. Positive influences were shown to come from three main factors.

First, ridesharing increases vehicle occupancy, which may result in fewer automobiles on the road overall and less traffic congestion as a result (Wang, 2019). Second, the dynamic price-rising feature of ride-sharing services like Uber helps to lessen traffic congestion during peak hours. This is mostly because hailing a car can be very expensive during peak hours; as a result, budget-conscious users frequently prefer to cancel or postpone their trip plans (Wang, 2019). This reduces

the number of cars on the road during peak hours and relieves traffic congestion. Third, E-hailing services make the most of vehicle capacity due to developments in technology like GPS and smartphones, the incorporation of electronic payment methods into the ride-sharing platform, and sophisticated algorithms to balance supply and demand (Chen, 2018). As a result, Uber drivers will spend less time traversing the streets looking for passengers, resulting in less wasted fuel and reduced traffic congestion. They also support effective utilisation of the road's capacity for vehicles. If E-hailing services were fully deployed, Malaysia may perhaps reduce peak-hour congestion by 91 percent, claims Kandasivam (2017). This will have a wider positive impact given the detrimental consequences that congestion has on the economy as a whole, as indicated by the World Bank. Perceived security also plays an important part in ensuring the safety of customers at all times, and it is highlighted below.

2.18.5. Perceived Security

According to Ceder, Chowdhury, Taghipouran, and Olsen (2013), this variable discusses the cab's safety features and the driver's availability. The key indicators of travellers' perception of transfer routes and personal safety at stations, which have been shown to be the most sensitive factors in travellers' decision to use public transportation, are trip attributes such as personal safety, journey time, reliability of connection, transfer time, and information related to transfers (Zeithaml *et al.*, 2012). Their perceived safety issues with the E-hailing system revolve around the drivers, the privacy of the passengers, and the state of the vehicles. Another rule being evaluated is whether or not Dar-es-Salaam-based E-hailing commuters and drivers feel safe utilising E-hailing cab services.

According to the results of this survey, users in Dar es Salaam City believed that E-hailing taxi services were as safe as an old-fashioned taxi (Rozi, 2018). Features such as the ability to locate a misplaced or lost item, which received a total score of 100 percent for the features offered by the E-hailing taxi system, or the ability to send a package or family member safely, for which their findings received a score of 74 percent, confirm how secure and reliable the E-hailing was in comparison to a traditional taxi. According to Ceder, Chowdhury, Taghipouran and Olsen (2013), for service quality, trip attributes such as personal safety, journey time, reliability of connection, transfer time, and information related to transfers are the key indicators to travellers' perception of

transfer routes and personal safety at stations that are the most dangerous. This variable talks about the safety features of the cab and the availability of the driver. Their perceived safety issues with the E-hailing system revolve around the drivers, the privacy of the passengers, and the state of the vehicles (Zeng *et al.*, 2022).

The availability of trip history, which shows the driver's car registration number, car model and colour, contact information and other essential characteristics, was one of the aspects that boosted the security of the E-hailing cab service (Rozi, 2018). Another security-enhancing aspect of E-hailing cab service is that the firms assist their users anytime they misplace stuff or encounter problems while on their trip. This conclusion is supported by the eighty-two percent (82 percent) score for this category. Considering security, Brazil and Kirk (2016) mentioned that Uber services reduced drunk driver accidents, customers have options to choose the mode of payment, as Uber connects the driver and passenger through smartphones, so the passenger can know and evaluate their driver before agreeing to use the service. According to Horsu (2015), the following factors affect a customer's pleasure with the service: service quality, dependability, nonstop service, safety, comfort, affordability, and driver attitude. It is important to have transportation that is accessible so that people can reach, and this is included in the subtopic below.

2.18.6. Perceived Accessibility

Another significant effect of the E-hailing system is that the service is conveniently available whenever needed at the passenger's destination. Except for a tiny percentage of travel where mobility is an objective in itself, accessibility is defined by Litman (2019) as "the ease of reaching commodities, services, destinations, and activities that collectively are called possibilities." Accessibility has a significant impact on consumers' intentions when it comes to modes of transportation because customers always favour services that are accessible to get them where they want to go. Internet-connected cell phones are needed to access E-hailing applications. This approach allows us to determine whether a user needs to be aware of mobile device usage, also looking at the advantages of the E-hailing (Bolt) transport service on drivers. The topic below is covered and further explored.

2.19. Advantages of E-hailing (Bolt) transport service on drivers

The impact of new E-hailing service offerings on drivers, including both new drivers and seasoned taxi drivers who are migrating to the new E-hailing service platforms, is examined in this section. This includes flexible hours, increased driver production, increased driver pay and driver safety. The advantages of E-hailing (Bolt) services on drivers were explored and explained in details in the following countries which are: United State, China, Europe, Australia, India, Malaysia, Mexico, Indonesia, Singapore and South Africa.

2.19.1. Flexible working hours

E-hailing companies have made it feasible for drivers to have more flexible employment options (Bautista-Hernández, 2020). E-hailing service platforms often enable somewhat flexible work schedules and have very minimal entrance barriers. There is a huge need for this kind of flexible job in Malaysia. Underemployment is very common in Malaysia (Roa *et al.*, 2020). According to the Department of Statistics, 221,000 working people would receive additional money. Using E-hailing services is a practical method to make extra money. For those who cannot work full-time but can earn a few hours here and there, such as students and full-time caregivers, E-hailing services offer the possibility of a part-time job or even regular part-time labour. In addition to additional money, this (Fabeil *et al.*, 2020). As evidence of the attraction of E-hailing services as a source of supplemental or part-time income, the Ministry of Transport states that 75 percent of the 200,000 active E-hailing service drivers in the Klang Valley maintain a part-time schedule. Increased driver production is explained below to showcase the productivity of E-hailing technology on drivers.

2.19.2. Increased driver production

The E-hailing service's technology also increases the productivity of the drivers. According to Razieman *et al.* (2015), the introduction of E-hailing service technology has impacted drivers' productivity through decreased waiting times, better time and resource use, increased system accuracy, and increased system efficiency. According to Liao (2001), research conducted in Singapore found that the development brought by the E-hailing service system enables higher handling capacity than the earlier phone-based system because it allows a greater volume of reservations to be processed with the same level of labour within the given period. According to

Liao (2001), the taxi industry may benefit from using an E-hailing service system in conjunction with a GPS to address problems such as an imbalance in the distribution of jobs based on geography and the mismatch between demand and supply for taxi services (Trew, 2019). This is so that users may predict the arrival time of the taxis and access real-time updates of the taxis that are still available in their immediate area. As a result, taxi movement is optimised. This puts the study to look into the increased driver pay.

2.19.3. Increased driver pay

Even if individual fares could be less, productivity advances enable more fares to be performed in the same amount of time; therefore, this rise in productivity should also boost income (Trew, 2019). Uber drivers make more money per hour than taxi drivers and chauffeurs do in Boston, Chicago, Washington, Los Angeles, New York, and San Francisco, according to a study by Hall and Krueger (2016). It is difficult to assess the pay levels of e-hailing service drivers in Malaysia due to the wide range of working hours and patterns and the variance in earning potential based on whether drivers are ready and able to work during peak periods. Online taxi service. Due to the dynamic pricing and large incentives provided during peak hours, drivers may be able to earn much more money if they plan their time effectively (Fabeil *et al.*, 2020). In May 2016, Uber provided its drivers with information outlining the possibility of higher pay if they were prepared to work during peak hours.

Ho (2016) calculated that a full-time Uber driver might earn around RM2,000 per week using this data. This, however, is based on a 95-hour workweek workload assumption. However, if they are prepared to work during peak hours and take advantage of incentives, full-time drivers for E-hailing services can reportedly earn RM 8,000 per month. Anecdotal evidence suggests that part-time E-hailing service drivers who are unable or unwilling to work peak hours will make closer to RM10 per hour, whereas full-time E-hailing service drivers can expect to make between RM20 and RM40 per hour if they work during peak hours and take advantage of incentives. Drivers who are driven to earn as much money as possible stand a better chance of beating their regular cab rivals in pay. This finding is supported by anecdotal evidence that taxi drivers who converted to E-hailing service platforms eventually benefited from higher pay levels (Muhamading, 2017). Traditional taxi drivers, particularly those in Malaysia, said that joining E-hailing service providers

had increased their income by a factor of two. It is important to look at drivers' safety when delving into E-hailing services as part of the E-hailing objectives, and it is highlighted and further discussed.

2.19.4. Driver's safety

The new E-hailing service technology, which was previously mentioned concerning consumers, may put drivers at risk (Fabeil *et al.*, 2020). Safety has come up once more, particularly about unregulated services and the question of whether or not drivers are adequately insured. This is somewhat addressed by the new regulations for Malaysia's E-hailing service, just as they are for customers (Daniels & Turcic, 2023). Although E-hailing services have raised drivers' pay, there are claims that commission rates are extremely low and that E-hailing service platforms are exploiting drivers. The possibility that drivers will be unfairly penalised by the consumer feedback systems utilised by the majority of E-hailing service platforms is related (Zeng *et al.*, 2022).

Drivers of E-hailing services have expressed concern that the operators of these services give passengers an excessive amount of priority, which results in unfair treatment of the drivers, including expulsion from the platform for unexplained reasons (Zeng *et al.*, 2022). Some drivers contend that there should be a procedure for them to defend or appeal if they are the subject of a passenger complaint. The broader worry is that if one E-hailing service provider can exercise undue market dominance, the welfare of the drivers will be compromised. If different platforms are available, drivers will find it simpler to move if they believe their salary or other working conditions are unfair (Daniels & Turcic, 2023). As a result, it is essential to make sure that there is market competition and that there are few obstacles for new companies to overcome. Since E-hailing, more particularly Bolt, has been operating before COVID-19, it is also important to look at how it operates now, which in this manner covers post-pandemic, and that is where it is looked into in the following subtopic. This will help in understanding more about Bolt's operation, and the effects and challenges brought by the pandemic. It can also make it easy for us to see the gaps or progress, which in this manner is discussed below.

2.20. Bolt during the post-pandemic period

In July 2023, Bolt introduced a new mode of transportation, which is called the Bajaj Qute drive (Teixeira & Lopes, 2020). The Bajaj Qute is a compact and economical motor vehicle featuring an efficient petrol engine, making it a practical choice for urban commuting and short-distance travel. Bajaj Qute is an eco-friendly, fuel-efficient and economically competitive vehicle for first and last-mile transportation. The Baja Qute is technically not a car and is legally classified as a compact quadricycle with a top speed of 70km/h (Jenelius & Cebecauer, 2020). Takura Malaba, a Bolt regional manager in East and Southern Africa, confirmed that the Bolt Lite category, which exclusively allows for transport in the Bajaj Qute, launched in a few areas of Johannesburg on 24 July 2023. Bolt wanted to introduce a lower-cost ride option, which is available for short trips, to continue to make ride-hailing services accessible and affordable for shorter trips for the passenger community (Chen & Pan, 2020). Bajaj Qute is found to be comfortably the cheapest option on the platform.

The "Bolt Lite" category was between 16 percent and 18 percent is cheaper than other drive options including, the "Go Hatch" ride option (Jenelius & Cebecauer, 2020). But there is a constraint, as currently, only one passenger is allowed per trip. The vehicle is capable of carrying more people, but only one person is recommended because the fuel efficiency decreases when there is more than one passenger in the Bajaj Qute. The vehicle has an 8-litre fuel tank, meaning at current fuel prices, a tank of petrol would cost around R180 (Teixeira & Lopes, 2020). Passengers with lots of luggage should consider their choices before riding in the Bajaj Qute, as luggage will likely have to be placed in the back seat. There is a boot in the front of the car, but it is not very spacious (Dzisi & Dei, 2020). Trips in the Bajaj Qute through Bolt are currently possible in Randburg, Parktown, Melville, Linden, Braamfontein, and Rosebank. Assessment of the performance of this category will be made before further expanding into other parts of Johannesburg, with the geographic footprint of the category to be refined over time (Hotle *et al.*, 2020). The cars are available through the MyNextCar fleet, a Bolt initiative that offers a financing solution for drivers to get access to vehicles. The application portal to become a driver shows that R1 495 per week will be charged as part of the MyNextCar initiative for a 2023 Bajaj Qute (Hotle *et al.*, 2020). The vehicle is listed for R85,000 on the Bajaj Qute website.

Deputy Minister Nomalungelo Gina had a successful meeting with the Bolt E-hailing company Executive delegation, which was led by its Global President Mr Jevgeni Kabanov, in Cape Town (Hotle *et al.*, 2020). The Deputy Minister was accompanied by her officials, including the National Consumer Commission (NCC). Deputy Minister Gina commended the company for creating more than 40,000 jobs through drivers in the three major cities of South Africa since they started to operate in 2016 (Teixeira & Lopes, 2020).

She noted that these drivers are dominantly youth, which augurs well for a country that has an exceedingly high level of youth unemployment. The meeting dealt with many issues, ranging from security concerns that have been raised and reported in some instances with regard to the Bolt E-hailing service, and issues of regulations and compliance (Dzisi & Dei, 2020). On security issues, Bolt has introduced a domain within their App for drivers to share their details to combat the false identity issues by some drivers. They have also introduced what is called the SOS security feature as part of the response (de Haas *et al.*, 2020). They are going to increase the number of women drivers for women riders, for purposes of choice and safety assurances. Additionally, in their vetting process for drivers, which includes professional licence clearance by SAPS on traffic transgressions, Bolt conducts background crime checks.

According to Bolt, a tech company has been appointed to additionally conduct the social media behaviour of the applicants, such as the promotion of GBV, online selling of illegal goods, and general attitude (Hotle *et al.*, 2020). They are engaging with Home Affairs on an identity security model for applicant drivers to Bolt. “Our SA market has been growing steadily in the last seven years. More drivers are to be set, possibly 30,000 over a period, arising out of the demand (Dzisi & Dei, 2020). The mission is to reduce the number of people driving themselves on the road, thereby reducing traffic and carbon emissions. As a commitment to reducing carbon footprint, the piloting of LPG-fitted cars will be a game changer. Both parties agreed that a technical meeting with the National Consumer Commission must be held urgently to deal with issues of regulations and compliance with the government. There is a strategic focus on security features for the riders (Dzisi & Dei, 2020). The other main focus is the increase of women drivers for women riders to have an option on the App to choose a female driver for their trips (Hotle *et al.*, 2020). The level of abuse against women in South Africa is exponentially high. Companies like E-hailing services must be safe spaces for them to use.

On 13 October 2023, the E-hailing company, Bolt, reopened a walk-in driver engagement centre (Teixeira & Lopes, 2020). The aim is to enhance its driver relations and address driver concerns. The centre, which is located in Randburg, Johannesburg, had been closed due to COVID-19. Bolt's Regional Manager for East and Southern Africa, Takura Malaba, says they want to address drivers' challenges. He says lost items will also be found at the customer centre (Hotle *et al.*, 2020). They also opened a lost and found centre. So, if customers have lost items in vehicles, they can go to the centre to pick them up. It was found that in the past, drivers and riders preferred a central location where they felt comfortable going to pick up or drop off an item. The Bajaj is said not to compete with any form of transport since the purpose of the centre includes supporting drivers. Malaba addressed concerns about the inclusion of the Bajaj in their vehicles (Hotle *et al.*, 2020). Unfortunately, there are instances of violence and misunderstandings. Although that is the case, there is an avenue for extra earnings and a bit of opportunity for drivers. The post-pandemic recovery of E-hailing transport services is discussed below.

2.21. Post-COVID-19 pandemic recovery of E-hailing transport services

Teixeira and Lopes (2020) have given the obvious dramatic consequences from a public health perspective, a wide array of policy measures and personal behavioural patterns were adopted to limit the evolution of the COVID-19 pandemic. Mobility restrictions were one of the main non-pharmaceutical interventions introduced at various levels, from local to national, and varying timeframes throughout the world. Limiting mobility had a direct impact on transport activity, with a drastic decline in passenger volumes for all transport modes (Chen & Pan, 2020). Social distancing, either forced by restrictions or as a personal choice to avoid risks, increased the share of telework or E-learning and reduced the number of public activities and events (Lim & Fernandez, 2022). In most European countries, the pandemic led to a significant decrease in mobility, expressed as a lower number of trips per day and shorter distances per trip (Jenn, 2020). The modified mobility patterns also affected the modal split. Walking and cycling increased their share of trips, while public transport saw ridership plummet, even without mobility restrictions or stay-at-home guidelines (Zeng *et al.*, 2022). Passenger car traffic initially decreased by 60 percent to 90 percent (in March–April 2020). With mobility restrictions gradually relaxing, car use eventually increased its share in total trips and total distance.

Railways suffered the multifaceted impact of decreased commuting at a local level, travel restrictions at the inter-regional level, an overall drop in tourism demand, as well as a general avoidance of public transport means. In addition, capacity constraints were imposed on trains to meet social distancing rules (Chen & Pan, 2020). From a public transport operator's point of view, it is challenging to balance the decreasing levels of ridership during and after the pandemic with a schedule and capacity that meets the new (and probably very volatile) patterns of demand (Dzisi & Dei, 2020). An additional challenge for public transport and shared-mobility applications is that users expect higher health and safety standards, but with fares and prices remaining at pre-COVID levels (Romeo *et al.*, 2022). The combination of the two challenges is already raising concerns regarding the viability of public transport systems.

Long-distance trips faced even stricter restrictions. Air transport was the most affected transport subsector, with more than 90 percent of programmed flights in the European Union cancelled in April 2020, and total activity in April 2021, still below 50 percent concerning normal levels. A sign of the criticality of the situation in aviation is that governments provided ample financial support to their national airlines in practically every country across the world (Zeng *et al.*, 2022). Apart from the mobility restrictions and the slowdown of economic and social activity, the pandemic brought behavioural changes that may have a longer-term impact on transport and mobility. Teleworking has become the norm for a large share of jobholders, especially in services (Dzisi & Dei, 2020). While it was easier to implement in countries and sectors with a high level of digital preparedness and with pre-existing facilities in favour of teleworking, the technological catch-up and cultural adaptation were fast, so much so that teleworking and telecommuting can be seen as potentially standard options for work in the post-pandemic era. However, even where most conditions for remote work are available, several surveys indicate that a large part of employees would still consider that physical presence at least a few days a month or a week should be maintained (Zeng *et al.*, 2022).

Moreover, one has to take into account that the main driver behind the extensive adoption of teleworking was to protect the health and safety of employees while ensuring that the productive activities continued, in other words, a temporary patch rather than a systematic change (Teixeira & Lopes, 2020). Since organisational readiness and willingness differ significantly among sectors

and specific enterprises, the uptake and potential continuity of teleworking can vary significantly (Lim & Fernandez, 2022). Nevertheless, a considerable number of jobs may still allow a certain flexibility in the post-pandemic era, in situations where both the employers and employees appreciate the benefits. E-learning, the technology-enabled solution that allowed the continuity of educational activities, was equally widespread but is probably a less viable option in the long term (Romeo *et al.*, 2022). Education at all levels witnessed a rapid digital transformation during the pandemic, but also encountered several cultural, social, and performance barriers that probably prevent its long-term substitution by online alternatives (Zeng *et al.*, 2022). While the educational community appears to have accepted e-learning as an option during the pandemic, most students, teachers, and professors would prefer to return to a predominantly physical presence when the crisis is over (Chen & Pan, 2020).

A post-COVID pandemic normality would probably see a return of primary, secondary, and most parts of post-secondary education to their pre-existing patterns (Chen & Pan, 2020). Some fully online programmes mainly at the university and graduate level may become more widespread after the experience gained during the pandemic, but the impact on daily mobility patterns would probably be marginal. Online shopping was already a widely adopted practice, but also registered significant growth during the pandemic (Jenn, 2020). The main reasons appear to be the unavailability of options for physical shopping in areas where retail activities were restricted, and a fear-induced avoidance of physical purchases when online alternatives were available. There is a generational effect present in the frequency and share of an individual's choices, with younger generations already being frequent online shoppers (Teixeira & Lopes, 2020). The pandemic probably accelerated the uptake by consumers who did not use E-commerce before and who, in the post-pandemic, continue considering it as an option. However, it can be argued that the main driver for online shopping during the pandemic was necessity and not preference. Once the situation returns to normal, consumers will probably revert to mostly physical retail activities, which appear to form part of wider social and entertainment activities.

Active transport (walking and cycling) became a more frequent choice, and a part of this trend may be maintained post-pandemic (Romeo *et al.*, 2022). To a large extent, active transport replaced other means, especially public transport, as a form of social distancing, but also benefited from the shift in mobility patterns during the pandemic. Fewer trips to work, school, or the shops led to

more trips for exercise, recreation, or simply psychological well-being (Teixeira & Lopes, 2020). One can expect a relative decline in active transport activity once all other mobility options and destinations are again available, but likely, a share of users who discovered walking or cycling during the pandemic will continue considering them as their main transport mode. In addition, given the environmental and health benefits, local authorities are expected to promote active transport in the post-COVID pandemic and build on the current momentum (Jenn, 2020). The biggest unknown, though, is how the psychological aspects of individual behaviour will evolve. The pandemic induced a generalised risk aversion, with a significant part of the population avoiding certain social and business interactions or unnecessary trips. While the perception of risk remains, people may continue avoiding crowds, face-to-face meetings, or business trips. From the transport point of view, videoconferencing will probably remain a major, if not the main option for meetings, decreasing significantly the demand for transport for business purposes.

Tourism to far-flung destinations may lose attractiveness in favour of places closer to home, in case another global emergency appears. The choice of trip distance, frequency, and mode depends on age, income, gender, and profession (among many other factors) (Zeng *et al.*, 2022), but recent surveys suggest that a significant part of the population will remain cautious. It should be noted, however, that risk aversion is highly correlated with the perceived severity of the pandemic situation (Teixeira & Lopes, 2020). It is probably reasonable to assume that personal precautions will relax with time. A rebound effect is also possible: the accumulated unsatisfied demand for social interactions and travel may lead to increased mobility levels when people feel free to move again.

The COVID-19 pandemic had a pronounced impact on transport activity globally, either as a direct consequence of mobility restrictions or as a result of lower levels of economic and social activity (Jenn, 2020). A return to a post-pandemic “normality” once the virus and the disease are under control will probably permit a recovery of personal mobility to levels broadly comparable to the past. Nevertheless, the pandemic also triggered changes in transport user behaviour and tilted the balance of business models for transport operators (Romeo *et al.*, 2022). The emerging structural changes in transport supply and demand may raise challenges for the future evolution and sustainability of the transport system. Traffic and transport operations are a reflection of economic and social activity (Lim & Fernandez, 2022). The high correlation between economic indicators

and transport activity is well documented, but their causal link should not be taken for granted. Different trajectories as regards the speed and shape of recovery on the economic side may lead to diverse paths in the recovery of specific transport markets (Zeng *et al.*, 2022).

A fast recovery would probably minimise the relative impact for most transport modes, while a slow recovery could lead to important shifts in supply and demand (Romeo *et al.*, 2022). Even if the economy recovers to the same level of economic output, structural economic changes brought on by the pandemic may result in different pictures as regards transport activity (e.g., an increase or decrease in the share of services and especially tourism, for a specific area, either as a policy choice or as the result of global trends) (Lim & Fernandez, 2022). The pandemic crisis is already considered one of the greatest shocks in the last 60 years, strong enough to modify future needs and social values. Several of the changes in personal priorities may persist in time, even after the eventual recovery (Romeo *et al.*, 2022). On the other hand, social distancing has accelerated the adoption of technological solutions that help avoid transport. Teleworking, video-conferencing, and other remote collaboration methods have long been seen as potential solutions for reducing transport demand (Jenn, 2020).

The extensive adoption of such solutions by a large share of enterprises during the crisis will probably result in an increased share of employers and employees continuing to use them once the confinement measures are over (Zeng *et al.*, 2022). On the other hand, the increase in e-shopping during the crisis as a response to limitations in retailing, risk aversion, and social distancing is also expected to be sustained in the future. Either as employees or as consumers, many individuals will limit trips that can be avoided through technology, or simply because they would consider them unnecessary (Lim & Fernandez, 2022). Regardless of how soon the COVID-19 threat is over, the uncertainty concerning the possibility of new waves of the virus or other pandemics will remain in the post-pandemic recovery and will probably lead to a higher risk aversion towards transport and travel (Romeo *et al.*, 2022). Apart from decreasing the trip frequency at an individual level, the user preferences concerning transport modes and trip distances will also possibly change.

Public transport is especially vulnerable to the changing trends in society and technology (Lim & Fernandez, 2022). Emerging mobility technology and business models already threaten the role of public transport demand by shifting users to ride-hailing services, shared-mobility applications,

and micro-mobility solutions (electric bicycles, e-scooters, etc.). In a post-pandemic situation, a part of the population may avoid public transport due to disease transmission concerns and opt for more individualistic forms of mobility (Lim & Fernandez, 2022). Such behaviour can shift demand back to private cars, biking (conventional or electric), micro-mobility, and even walking. However, this will probably favour own vehicles as opposed to shared-mobility options. “Sharing economy” services such as ride-hailing, ride-sharing, and other emerging MaaS (Mobility as a Service) applications are, therefore, expected to face important viability problems as a result of the loss of income during the confinement period and the decreased demand afterwards (Teixeira & Lopes, 2020). Regulations are important when looking at the E-hailing transport industry and are discussed in the following content since they play an important part in the transport industry.

2.22. The social and economic impacts of e-hailing applications

E-hailing is a service that lets customers book a trip online and gives customers a platform to communicate with E-hailing businesses (Trew, 2019). In Malaysia, an E-hailing service was introduced in January 2018. The population of Malaysia is growing, and there is an increase in the number of people moving from rural to urban areas. There is a service offered in Malaysia. It has been successful thus far. For a number of reasons, E-hailing services are now more common than traditional taxis (Litman, 2019). As long as these service providers pay close attention to their clients' demands, often seek feedback, and enhance the calibre of the services they offer, clients are likely to seek out their services. The taxi industry and public transportation have been significantly impacted by mobile applications created by e-hailing companies in recent years (Zeng *et al.*, 2022).

The E-hailing technology, which threatens the taxi industry by reducing profitability, is difficult for the sector to keep up with (Trew, 2019). Now that Public Service Vehicle (PSV) licences are required for all E-hailing drivers, some of them have complained that the rules are too onerous. A lot of these driver partners employed e-hailing as a way to boost their driving income. There will likely be a significant change in how people move around cities over the next few years (Trew, 2019). The internet transaction is taking the role of the traditional marketplace as a means of doing business. To summarise, E-hailing today is a substitute for both private and public transportation, considering the country's growing use of the service.

For a number of reasons, E-hailing services are now more common than traditional taxis. E-hailing is, first and foremost, inexpensive (Trew, 2019). E-hailing service providers engaged in a competitive atmosphere, where the customer stands to gain the most, as was to be expected. By lowering the cost of travel, adding more amenities to make consumers more comfortable, and giving free trips to devoted clients, the providers are attempting to increase consumer comfort. For the business to succeed, it must comprehend the needs and desires of its customers (Benevenuto & Caulfield, 2019). As long as these service providers pay close attention to their clients' demands, often seek feedback, and enhance the calibre of the services they offer, clients are likely to seek out their services (Beck & Hensher, 2020). This tactic improved customer advocacy for the brand and the company. Without continual input and attention, the provider's services might no longer satisfy the customers' needs, which would frustrate them and make them think less of the provider in comparison to someone whose services would better suit their needs and pay more attention.

The taxi industry and public transportation have been significantly impacted by mobile applications created by e-hailing companies in recent years (Beck & Hensher, 2020). For this reason, specialists made the decision to research how E-hailing services affect the whole economy. Three perspectives can be used to understand this influence: the impact of E-hailing on drivers, the impact of E-hailing on the taxi sector, and the impact of E-hailing on passengers. The availability of a wide range of private transportation choices provided by E-hailing firms has had a tremendous impact on consumers (Benevenuto & Caulfield, 2019). The lowest prices and greatest levels of comfort will be offered to customers by E-hailing services as long as the market is operating efficiently. The user benefits the most from the creation of competition amongst businesses that offer the same service, since it improves the already available offerings. According to a recent study, almost 80 percent of Malaysians still favour E-hailing over traditional taxi services (Trew, 2019). Since DragCars only charge customers for the distance travelled, regardless of how much time is spent during the journey, E-hailing is favoured in traffic jams. For instance, taxis charge passengers not only for the distance travelled but also for the time spent during the trip.

The cost of a journey does not increase for E-hailing services during rush hours or late at night, though (Fabeil *et al.*, 2020). International e-hailing cars from Bolt also have a number of development problems, such as inadequate protection of consumer safety and ambiguity regarding

the relationship between the network driver and the device. Local customs and laws are frequently at odds, and issues like swipe orders and driver pickup orders are inadequately handled. E-hailing platforms with small user bases find it challenging to produce network effects, and their global expansion is not successfully assimilated into local culture (Fabeil *et al.*, 2020). Due to its accessibility, consumers frequently pick E-hailing services over taxis that may be found on the street (Beck & Hensher, 2020). The Malaysian Public Transport Council conducted a survey in 2017 that demonstrated how E-hailing companies surpassed taxi services in every category. It offers improved service information, quicker wait times, and a better booking process. The ease of scheduling the E-hailing service makes people love utilising it (Roa *et al.*, 2020).

By using the services of E-hailing companies, customers can also receive benefits like free trips. This strategy encourages customers to select one specific service over all others by forging a link (Bautista-Hernández, 2020). The E-hailing business opened up a lot of job opportunities for drivers. These flexible employment options are highly sought after in Malaysia. According to the Department of Statistics, approximately 220,000 Malaysians who are currently employed are eager to take on another job in order to increase their income (DOS) (Benevenuto & Caulfield, 2019). According to the Ministry of Transportation, this demonstrates how popular E-hailing services are as a secondary source of income and part-time employment. Because of the E-hailing companies' policies, customers had shorter wait times, which increased the number of trips a driver made (Vega-Gonzalo *et al.*, 2023). In other words, this tactic raised drivers' overall productivity, which raised their income. Additionally, the introduction of the E-hailing service had a negative effect on the taxi industry. Taxi firms are finding it difficult to compete with e-hailing services, even with the same profit margins. Taxis struggle to keep up with E-hailing because it is a single-unit business run by a single mind, and decisions are made to benefit the entire supplier (Bautista-Hernández, 2020). Contrarily, the taxi industry lacks such a mechanism; hence, it is understandable that the E-hailing system has a negative influence on the taxi sector.

2.23. E-hailing services in the sharing economy

The sharing economy has an impact on a number of firms and industries, including those in retail, technology, hospitality, media, finance, and travel (Kathan *et al.*, 2016). E-hailing has emerged as a very popular form of transportation, ranking among the top companies in the sharing economy

(Woskow, 2014). The E-hailing business model is a form of transportation whereby different people who have the same routes and timetables take the same automobile to get to work or school, go on a lengthy trip, or go somewhere else while splitting the cost of the ride (Chang *et al.*, 2018). Even in the sharing economy sector, the E-hailing service is distinctive due to a number of factors. E-hailing operations include longer customer and service provider interactions than other services do (Philip *et al.*, 2015). This has prompted a discussion on problems like trust, discrimination, the law, and pricing (Edelman *et al.*, 2017; Jefferson-Jones, 2015; Wang & Nicolau, 2017).

The COVID-19 epidemic is one risk that has recently come to light, making customers less likely to use the market's regular transportation options (Chang *et al.*, 2018). The case has increased the value of the sharing economy through digital platforms, and many service providers are shifting their operations to the online market (Hossain, 2021). This is due to the fact that conducting business while the COVID-19 epidemic is ongoing is safe, dependable, dependable, and secure. The sharing economy platforms that are best at mitigating the negative consequences of the COVID-19 pandemic are the E-hailing businesses like Uber and Bolt (Buheji, 2020).

2.24. Public transportation's informality

The market for urban passenger transportation in developing nations has been extensively examined with regard to business informality (Bautista-Hernández, 2020). Informal operators are unauthorised organisations using tiny paratransit vehicles, while formal operators are huge public transit companies with licences (Phun & Yai, 2016). While informal operators utilise a variety of vehicles, including pedicabs, auto rickshaws for one to three people, sports utility vehicles (SUVs), and minibuses, formal operators work with buses that carry more than 50 passengers. The characteristics in terms of demand, supply, and price formation distinguish between urban formal and informal operators. In addition to having defined routes, fixed schedules, an integrated focus, organised entrepreneurship, and medium- to long-distance routes, formal operators are impersonal (Daniels & Turcic, 2023). Medium- to short-distance routes, varied routes, flexible scheduling, a speciality emphasis, unstructured business, and personal ties with their passengers are all characteristics of informal operators.

On the other hand, informal operators charge variable, differentiated charges, whereas official operators have set, consistent fares (Daniels & Turcic, 2023). There are paratransit providers who

hold state licences in some nations but are categorised as working in the unorganised sector because they do not adhere to other transport-specific laws as well as general tax and labour laws. In certain nations, the term "illegal" is used to describe paratransit providers rather than "informal" providers (Godard, 2013; Salazar, 2015). While some studies on informal urban transportation are descriptive and concentrated on the costs and advantages of enabling mobility, they do not examine operators' own reasoning when making decisions to continue operating as official or informal units. Some of this research emphasises the complementarity between formal and paratransit informal systems or examines the effects of these two systems on passenger welfare (Salazar & Behrens, 2015).

Incorporating the socio-historical situatedness (Evans *et al.*, 2018) and transdisciplinary nature of informal activities into its analysis is a hallmark of the critical "mobility school" of thought (Kumar *et al.*, 2016). Parallel to this, proponents of post-structuralism like Morris and Polese (2014) and Rekhviashvili and Sgibnev (2019) contend that informal transportation behaviours are deeply ingrained in a persistent, concrete structure of social relations as well as new norms and perspectives. Informal transportation markets are subject to sociocultural norms and institutions that might be vertically or horizontally anchored rather than solely relying on the laws of supply and demand (Daniels & Turcic, 2023). The latter method enables the investigation of informality across a range of contexts, including market and non-market, State-based and society-based systems.

The characteristics of the intercity ground transportation market are distinct from those of the aforementioned urban transportation market. According to Ratanawaraha and Chalermpong (2018), in the intercity transportation sector, formal and informal operators' buses are more similar in terms of bus type and size. However, formal operators have newer buses, more constrained driver work schedules, and better management. Both professional and informal operators take the same routes, cover the same distances, and visit the same cities (Jenn, 2020). Trip segments are connected, whereas formal organisations offer greater insurance and service quality. Operators never formally or informally build or maintain personal relationships with passengers. One of the biggest contrasts between official and informal operators is that while they compete in the national intercity transport market as a whole by dividing up supply and demand, in urban transportation, they actually work in harmony with one another (Jenn, 2020). The city, not a particular market,

serves as the analysis's unit of analysis along with its transportation issue. In both urban and intercity ground transportation, there is a distinction between public and private transportation.

According to Salazar (2015), political processes have a significant impact on the growth of informal transportation in Latin America. Operators who participate in opening and liberalisation programmes enjoy unrestricted access to transportation routes, the freedom to discontinue services whenever they please, free importation of pre-owned cars, no restrictions on the minimum size, age, or fleet size of their buses, and other technical requirements. These facts lead to a substantial oversupply of transport providers and an unrestrained, "lawless," competition that results in predatory prices and a decline in labour and operational standards (Jenn, 2020). Irresponsible operators use a variety of opportunistic business strategies to cut costs, including failing to pay taxes, purchasing fake parts and modifying cars, "renting out" routes and licence plates, and more. Accident rates in informal transportation are higher than in official transportation because moral hazard is transmitted to passengers (Kassa, 2014). Through what is referred to as a permissive "chicha culture," informal practices not only limit supply operators but also passengers. Lower-income passengers are more likely to experience adverse selection due to information gaps and asymmetries, or they may simply grow bored and tolerant over time, tolerating unsafe, unhealthy, and subpar services in exchange for paying lower fares.

This results in a market niche that is more likely to employ unofficial transportation services. According to Arbues *et al.* (2015), intercity travel demand can be divided into two groups: those with lower incomes who choose informal, inexpensive transportation and those with higher incomes who want pleasant official transportation. A third group, rush-hour travellers, uses paratransit to shorten the "wait and journey duration" of illicit transportation. The State also takes a selective "permissive" stance in this situation. Medium and large operators are subject to state normative and enforcement duties, but little is done to make sure that informal operators follow rules and regulations (Jenn, 2020). The State is also not interested in developing an institutional environment that supports law and order, or the argument that informal operators have harmful externalities. Due to state inefficiency, informal operators' risky and unsafe behaviours are not limited, their technical standards are not monitored, and their unethical business and tax methods are not identified.

2.25. Regulations in the E-hailing services

Regulations were brought in order to ensure E-hailing standards are met and streamlined in the transportation service industry. Another objective in implementing E-hailing regulations is to bring balance and equity to the E-hailing transportation industry. Regulations of E-hailing services were implemented in countries such as Malaysia, China, the United States, Mexico and South Africa. The regulations were further explored in detail under the regulation topics and subtopics below, looking at how they were implemented, their importance and positive change in the E-hailing transportation industry.

Given the enormous growth of E-hailing services, several nations are debating how to regulate this new industry (Koopman, Mitchell, and Thierer, 2015). Some countries have a policy of explicitly banning E-hailing services; however, given how popular these services are with consumers, it has been difficult to put this policy into practice. Since local and regional legislation directly affects sharing platforms' adoption, growth, and economic potential, questions of regulatory monitoring are still crucial.

Since local and regional legislation directly affects sharing platforms' adoption, growth, and economic potential, questions of regulatory monitoring are still crucial (Quattrone *et al.*, 2016). Since sharing economy platforms are new to the economic landscape and are frequently transnational, this has resulted in a patchy regulatory environment that has allowed businesses to grow with varying degrees of resistance and compliance. Indeed, Hill (2015) identified a major factor contributing to the sharing economy's explosive expansion as the lack of regulation. In terms of power, the interaction between sharing platforms and external regulatory agencies plays a key role in determining not only the platform's power but also in mediating the power imbalances that arise between platforms, their users, and impacted third parties (Rauch & Schleicher, 2015).

Platforms can circumvent protection laws like consumer protection laws (Calo & Rosenblat, 2017). Disability advocates contend that the absence of legal obligations results in fewer accommodations for people with impairments. There is intense controversy regarding whether sharing economy enterprises should be subject to more or less regulation. As discussed by Oskam and Boswijk (2016), attempts to outlaw disruptive sharing services like Airbnb may serve to discourage innovation and protect oligopolistic markets, but more permissive regulations may

result in damaging commercialisation in developing countries. It has also been demonstrated that attitudes vary, even among users of sharing platforms. The need for regulation was viewed differently by conservatives and liberals, according to research conducted in the US (Smith, 2016).

Some people are in favour of regulation (Cannon & Chung, 2014). But there has been a request for regulation to be better fitted to the current socio- and technological realities in light of the digital economy's generally rapid change. According to Ranchordas (2015), regulators have an incorrect understanding of how the innovation process functions. She advises authorities to postpone final legislation until additional information is known or the technology has been extensively commercialised, rather than rushing to pass regulations. In a similar vein, Dyal-Chand (2015) contends that because traditional corporate models do not fit with the sharing economy, present regulatory structures do not work.

While Calo and Rosenblat (2017) contend that legal interventions must reflect a deeper understanding of platform behaviours, Brown & Marsden (2013) suggest that a more holistic view goes beyond simply regulating the code and takes organisational settings into account. There are no universally applicable solutions for the regulation of algorithms (Latzer *et al.*, 2014). There is a need to "adapt our policies, organisations, and research to exploit the opportunities and handle the issues these technical instruments give rise to. For instance, Johal and Zon (2015) contend that for the management of smart regulation regimes, governments should modernise their organisational structures. A group of neoliberal and libertarian economists, in contrast, advocate for a laissez-faire approach to the sharing economy. Examples of these positions include those of Koopman *et al.* (2015), who contend that existing regulations should not apply to the sharing economy at all, and Allen and they suggest a bottom-up approach to self-regulation where private certification programmes and reputation systems can develop to take the role of licencing programmes. It is further stated in detail below.

2.25.1. Regulatory accountability

Kaplan Nadler (2015) found that due to a lack of clarity on the legality of services, users are at risk of legal repercussions. How to tax new types of economic activity appears to be a major issue. Although there is a lack of tax regulation in the larger E-commerce market, the main problem with the sharing economy seems to be enforcement rather than application because some platforms are

opportunistic in choosing a beneficial regulatory regime (Guttentag, 2015). For instance, Airbnb mandates that service providers abide by local regulations, emphasising that it is their responsibility to do so.

However, some districts have taken proactive measures to guarantee tax compliance through service pooling. For instance, the city of Paris and Airbnb reached an agreement under which the city's tourism tax and administrative district tax would be added to the total sum paid by visitors and paid by Airbnb directly to the city's government (Smorto, 2016). Additionally, the lack of licencing requirements for providers has drawn criticism. For instance, platforms in the food service industry have argued that they are not restaurants and are therefore exempt from some tax and health regulations. In a similar vein, Uber and Airbnb assert that they are not held to the same legal standards for safety as hotels. McLean (2015) emphasises the murky nature of culpability in situations involving car accidents or damage to a host's property. Uber was accused by the Frankfurt District Court of unjustly competing with the taxi business by lacking the required insurance and licencing.

In a fair assessment that integrates regulatory and economic analysis, Edelman and Geradin (2016) contend that requiring platforms to get licences would be unproductive and a source of regulatory capture by established businesses. They do not support total supervision freedom but rather suggest that platforms embrace oversight to prevent negative externalities that could harm consumers and non-consumers, particularly through filling in insurance gaps. The liability has become a more urgent concern given the number of accidents caused by ride-hailing drivers. According to Pfeffer-Gillett (2016), at least in the US, the terms of service for both Uber and Lyft contain provisions waiving all liability. Similarly, insurance continues to be a major obstacle in the regulation of sharing economy services, with users bearing an unfair share of the responsibility. Rauch and Schleicher (2015) talk about peer-to-peer car sharing's liability concerns because, in some cases, personal auto insurance coverage does not apply when a vehicle is being rented out or leased to others. Personal insurance policies frequently do not cover shared services in the UK, leaving individuals without insurance and with uncertainty in the event of damage.

This is a pressing issue because, according to a Eurobarometer survey from 2016, 41 percent of respondents were concerned about personal accountability, and users' top concern with the sharing

economy was a lack of clarity regarding who would be held accountable in the event of a problem during the provision of the service (Lutz & Hoffmann, 2017). However, regulation is also required to shield third parties from harm. Peer-to-peer interactions could result in negative externalities for third parties as a kind of passive participation, according to Cohen and Sundararajan's (2015) analysis. "In these circumstances, some sort of third-party regulatory involvement is inevitable". According to the concept of passive participation, persons can be affected by or targeted by activities even when they are not actively involved, voluntarily, or consciously (Casemajor *et al.*, 2015). It is debatable if and how regulating mechanisms for reducing the harmful impacts of passive participation should be put into place. That is why self-regulation plays an important role uncovered in detail below.

2.25.2 Self-regulation

Proponents of self-regulation argue that formal regulation is costly and merely serves to protect vested interests (Calo & Rosenblat, 2017). Regardless, current information asymmetries within the sharing economy restrict the ability to regulate. Platforms maintain control over the algorithms and data, allowing them to exercise absolute power within the community itself as well as hinder regulatory investigation. The exercise of this power is limited by the market and by emergent social norms, but, as Suzor (2016) argues, it is barely limited by law. Only the platforms currently have the data to determine whether they are behaving fairly in a form of autocratic self-regulation.

Self-regulation as a regulatory tool has received a lot of attention in the regulation theory literature (Isaac, 2017). Even though the typology of self-regulation was released before the advent of for-profit sharing services, it nevertheless provides a useful lens for studying the sharing economy. Initiatives are optimistic that self-regulation can be used to advance social justice in the workplace, while Cohen and Sundararajan (2015) contend that self-regulation of some kind is necessary to deal with the sharing economy's potential in the future. They do emphasise that "self-regulation is not the same as deregulation or no regulation," though. Instead, it is the transfer of regulatory duties to organisations other than the government. It's interesting to note that support is a type of co-regulation in which some aspects of the sharing economy, such as insurance needs, should be controlled, while others are left to self-regulatory methods. However, Suzor (2016) has demonstrated that private governance models are rarely transparent, unambiguous, or predictable.

The deliberate avoidance of law enforcement on the Uber platform serves as a clear illustration of the limitations of self-regulation. The persuasive power of language and the significance of narratives are particularly highlighted by discussions and framings of the sharing economy's key themes.

2.25.3. Narrative Framing in the Logic of Sharing

Platforms aim to negotiate regulatory applicability by using narratives and self-framing as a technique for more "informal" self-regulation (Codagnone *et al.*, 2016). The framing theory can be used to examine narratives since framing is a deliberate communication positioning procedure. According to Dredge & Gyimóthy's (2015) analysis of discourses on the sharing economy, the way that these challenges were initially framed shaped the agenda for subsequent policy discourses and debates, further influencing the determination of research needs. The co-optation of the "sharing movement" by corporate interests has been a contentious issue in academic and policy discussions of the sharing economy for a while (Walker, 2015).

Despite their differences, the platforms all speak in terms of supporting independence, adaptability, and freedom. Martin (2016) discovered, for example, that players looking to strengthen the sharing economy niche used three frames: the sharing economy as a business opportunity, as a more environmentally friendly method to consume, and as a means of achieving a decentralised, just, and sustainable economy. Platforms seek the regulatory "sweet spot" that permits them to profit while avoiding obligations. This idea was developed in the context of sharing by Calo and Rosenblat (2017). Uber exploits its designation as a technology firm to define its function regarding regulation (Smith & Leberstein, 2015). Despite actively mediating transactions, sharing economy businesses frequently present themselves as neutral mediators or simple facilitators. At their core, the sharing economy and related terms are rhetorical tools used by proponents to advance their own economic or political agendas, such as luring customers, raising money, or reducing government involvement (Schor, 2015).

However, as Cherry (2016) has pointed out, there is a disconnect between stories and the world around us. Many of the "sharing" corporations of the past have abandoned the concept of "sharing," and are now wholly for-profit enterprises that strive to maximise shareholder value at any cost, frequently in response to the demands of their venture capitalist investors. Similar to how sharing practices are romanticised as altruistic, pro-social, and non-reciprocal despite being open to the

possibility of capitalist exchange, Rosenblat and Stark (2016) encourage being critical of the conflict between the sharing culture among users and the business goals of the platforms. However, as Cherry (2016) has pointed out, there is a disconnect between stories and the world around us. Many of the "sharing" corporations of the past have abandoned the concept of "sharing," and are now wholly for-profit enterprises that strive to maximise shareholder value at any cost, frequently in response to the demands of their venture capitalist investors. It has been claimed that while enabling regulatory avoidance, such narratives also explain and normalise providers' precarious employment situations (Cockayne, 2016).

Platforms portray sharing as an altruistic and non-reciprocal social interaction rather than a business, shaping it in terms of transactional exchanges and consumer convenience. As a type of lobbying, sharing corporations are thus able to identify themselves and provide their statistics. Kang and Eilperin (2015) contend that Silicon Valley has even turned into a "revolving door" for former Obama employees who are being coerced into lobbying on behalf of platforms. Major sharing economy businesses are recommended by Lee *et al.* (2015) to leverage studies on their positive benefits for lobbying in their article published in the Harvard Business Review. Airbnb, for example, hired Gene Sperling, a former White House National Economic Advisor, to create a report using administrative data from Airbnb on the subject of provider income, in addition to other self-published publications. Uber has similarly generated a body of self-published research on its benefits and positive impacts in addition to the widely recognised paper by Hall and Krueger (2015) on the reportedly high wages and flexibility provided to Uber drivers.

Despite extrapolating the data from only Seattle in one report from 2015, Uber provided proof that it helped to reduce the number of DUI incidents in all the cities where it operates (Cockayne, 2016). This straightforward econometric study "demonstrates that Uber's network of safe, easily accessible rides has a substantial and quantitative influence on drunk driving in cities where Uber operates freely. It is interesting to note that Greenwood and Wattal (2015) published a related study in which they examined the impact of ride-sharing companies like Uber and Lyft on the frequency of killings involving alcohol in motor vehicles in California. Their research revealed a decline, but not all of Uber's services had the same impact, suggesting that earlier statements about the company's effectiveness. Similar to this, Uber presented a two-volume study on the effects of Uber on the German economy with Justus Haucap, Director of the Düsseldorf Institute für

Wettbewerbsökonomie (DICE) and former Chairman of the German Monopolies Commission, arguing that with Uber, consumer welfare will be improved by the provision of more rides and lower prices (Sperling, 2015). Normal operations following upheaval are outlined below and discussed further.

2.25.4. Normal operations following upheaval

According to Christensen's concepts of "disruptive innovation" and "disruptive innovation theory" (Cusumano, 2015), a disruptive product underperforms in terms of a dominant product's key performance attributes but offers a unique set of benefits. After entering an entirely new market or targeting a certain market segment, the product eventually gets better and enters the mainstream. Disruption is a frequently used buzzword as well as a conceptual framework to define sharing economy services (Möhlmann, 2015). Sharing economy platforms frequently use a power dynamic over other platforms as their main growth strategy to "disrupt" traditional enterprises. For instance, Uber expressly seeks to destabilise the established taxi sector (Rogers, 2015). The consequences of this disturbance may be both favourable and unfavourable. It is Economics 101 that the entry of new competitors into established markets should have a positive impact on price and quality. Sharing services' disruption can challenge unsustainable models, such as hyper-consumption, and place competitive pressure on incumbent services, leading to lower consumer costs and increasing quality (Calo & Rosenblat, 2017).

From an economic standpoint, Einav, Farronato, and Levin (2016) have explored regulatory difficulties in the peer-to-peer economy and provided theoretical projections of the impacts that peer-to-peer markets may have on established businesses. The forced adoption of "sharing" concepts by conventional sectors is one effect of the sharing economy and its disruption (Cusumano, 2015; Martin, 2016). For instance, taxi firms increasingly provide app-based hailing (Calo & Rosenblat, 2017). Unsurprisingly, the majority of the critical literature on the subject of disruption focuses on the home-sharing industry, specifically the effects of the widespread use of Airbnb on local economies. These works discuss gentrification as well as rising rent and home prices. Guttentag (2015) examined how Airbnb is a disruptive innovation in the travel and tourism industry via the prism of disruptive innovation theory. Oskam & Boswijk (2016) used scenario

workshops and a Delphi panel to map existing trends and uncertainties as they examined the disruptive potential of Airbnb on the traditional tourism business.

Zervas, Proserpio, and Byers (2016) conducted an empirical study on the effects of Airbnb on the conventional hotel business, focusing on the company's arrival in the state of Texas. The most vulnerable hotels in Austin had an estimated 8–10 percent income effect from Airbnb, despite the company's claims that their services are complementary (Berger *et al.*, 2017). They also discovered an overall decline in hotel costs and occupancy rates, with independent hotels and hotels without conference rooms being disproportionately affected by Airbnb. According to one study, Uber transformed the labour market's composition in the ride-hailing industry, expanding the overall transport service. Zervas, Proserpio, and Byers (2016) conducted an empirical study on the effects of Airbnb on the conventional hotel business, focusing on the company's arrival in the state of Texas. The value of taxi medallions and overall taxi sector earnings, according to Bond's (2015) examination of Uber's effects in New York, San Francisco, and the District of Columbia, were negatively impacted by Uber. This story of market-based digital innovation upending conventional business models has been criticised as a type of “neo-liberalism on steroids,” regardless of potential benefits or costs. According to Slee (2015), some disruption can be used as a “card” against regulation, and businesses are engaging in regulatory arbitrage by taking advantage of the discrepancy between economic reality and legal treatment.

For instance, Calo and Rosenblat (2017) contend that sharing enterprises practice regulatory arbitrage by replicating already-existing services without the same limitations (Calo & Rosenblat, 2017). By “extracting more and more value from users while continuing to enjoy the façade of a disruptive, socially conscious firm,” they contend that the sharing economy is more of a “taking economy”. Since the intermediate platforms now have more negotiating power, they can increase their market dominance, especially if they can become monopolist bottlenecks that restrict access to other people's products (Kenney & Zysman, 2015). Indeed, platforms may be benefiting from a first mover benefit, whereby first movers can ensure a dominant or monopolistic market position for a ‘winner takes all’ result. For the vast majority of sharing platforms, market dominance to the degree of monopoly is out of reach. However, for Uber, pricing strategies and the wealth of data collection may enable market dominance, which is their primary goal.

Richardson (2015) offers an intriguing perspective that is more critical of the idea of disruption in general. He claims that while the sharing economy has the potential to upend existing business models, it also can further solidify “business as usual” because the market still can “disrupt” businesses by promoting isomorphism. According to Martin, Upham, and Budd (2015), isomorphic forces drive non-profit sharing economy businesses to adopt a more for-profit mindset. A segment of the literature also discusses the development of sharing economy services through time and provides case studies and illustrative trajectories. For instance, Mikoajewska-Zajc (2016) talked about how Couchsurfing changed from a non-profit to a for-profit business sponsored by venture capital in 2011. In such a situation, platforms are nonetheless moulded by conventional market dynamics even while they are engaged in a power struggle with other platforms or established firms. Regulations in the E-hailing transport industry are very crucial in the transportation industry, including public and E-hailing transport sectors. Detailed information is discussed below.

2.26. The importance of regulations in the E-hailing transportation industry

The relative levels of regulation will have contributed to the size of the impact (Gant, 2016). On the other hand, E-hailing companies have been able to operate more affordably and offer prices that are more competitive thanks to the relative advantage of being "unregulated." The traditional taxi industry has suffered from a very high level of regulation that has restricted its ability to innovate and compete (Miller, 2016). The taxi industry has demanded a "levelling of the playing field" due of this inequality. However, this momentary relative imbalance in regulation does not last long. The primary sources of competition are the underlying innovation of E-hailing services and the ensuing increases in price, quality, and productivity stated previously. The lack of regulatory pressure may have just become worse (Trew, 2019). As was already said, comfort and accessibility are typically regarded as the primary factors influencing consumer desire rather than this. As a result, e-hailing service laws have been proposed in numerous countries worldwide. The relative competitiveness of the businesses that offer E-hailing services and the traditional taxi sector is discussed in more detail below regarding the planned and current regulations.

2.27. The Proposed Regulations on E-hailing Services

Many nations are debating how to regulate this new business due to the massive expansion of E-hailing services (Lee, 2016). Some nations have created the idea of outright prohibiting E-hailing services; however, it has proven challenging to implement this legislation, considering how frequently people use these services. Malaysia has chosen a different strategy and is in favour of codifying and regulating E-hailing services inside a statutory framework (Sheppard Udell, 2016). This section evaluates how successfully the new regulations will aid the government in achieving its goals and the projected effects they will have on society.

2.27.1. The new regulations

The Commercial Vehicles Licensing Board (CVLB) Act 1987 and the Land Public Transport (LPT) Act 2010 were amended by a bill that was approved by the Dewan Rakyat on August 27, 2017 (Gant, 2016). A motor vehicle having a seating capacity of four people and no more than 11 people (including the driver) for any travel for single or separate fees with booking made using electronic mobile apps was defined as an E-hailing service vehicle under the Bill. Following the election of the Pakatan Harapan government on May 9, 2018, Transport Minister Anthony Loke declared that as of July 12, 2018, all E-hailing service providers must abide by a set of rules like those governing the taxi industry and register with the Land Public Transport Commission (SPAD) (Kassan & Orsi, 2015). The new regulations' stated objectives are to create an equal playing field for e-hailing services and traditional taxi services, safeguard the safety of customers, drivers, and the general public, and offer a legal foundation for e-hailing services. The law has given E-hailing service providers up to a year to adapt to the new restrictions, but there are still many issues that need to be clarified regarding the precise procedure for doing so.

The new regulations contain at least 14 separate provisions that deal with E-hailing service providers, drivers, passengers, and cars (Miller, 2016). By extending the definition of commercial cars and requiring E-hailing service providers to register with the SSM, the laws offer a legal foundation for E-hailing service services. Through background checks and insurance requirements that are both obligatory and imposed, the new legislation also greatly increases both consumer and motorist safety. On the one hand, these new rules extend many of the current criteria that apply to E-hailing services and taxi services, most notably the necessity that all drivers obtain a PSV

(Rogers, 2015). However, there are still several legal restrictions that apply to taxi services that do not apply to E-hailing services, such as rigorous price regulations.

The perks enjoyed by traditional taxi services, which are not available to E-hailing service providers, include financial assistance for the acquisition of vehicles and greater commissions for taxi drivers who switch to E-hailing service platforms (Martin, 2016). Other discrepancies that still exist as a result of the slightly different business models include the inability of E-hailing service drivers to accept street fare, which is not addressed by the new legislation, unlike taxi drivers. Taxi drivers have fewer options for vehicles than E-hailing service drivers, and the new regulations leave this unaddressed. E-hailing service operators and drivers run the risk of not being able to comply with the rules when the one-year moratorium expires if these concerns are not resolved (Calo and Rosenblat, 2017). Leaving this matter aside, the additional entry hurdles placed on both e-hailing service providers and drivers are the more important consequence of these new regulations.

2.27.2. Restrictions to entry

Any new rules run the danger of acting as a barrier to new entrants, which would decrease competition and the room for innovation (Cohen and Sundararajan, 2015). The new obstacles for E-hailing service providers include citizenship restrictions and a paid-up capital requirement of RM100,000. The price of the new Business Mediation Licence is more significant (LPP). Operators of e-hailing services would need to apply for an LPP at a stated cost of RM115 per car to cover all the vehicles they desire to operate in that year. The price of the LPP is intended to roughly correspond to the price of the taxi permit that businesses and individual taxi drivers pay (Koopman *et al.*, 2015). Therefore, even though the capital needs are modest, the cost of getting the LPP could be high.

The exact procedure for adhering to the new regulations hasn't been made clear, though. Direct expenses of compliance are predicted to be at least RM315 and take at least 16 hours for drivers. While these costs could be reasonable for full-time drivers (who make up the majority of E-hailing service drivers, at 75 percent, they represent substantial expenditures for part-time drivers (Sundararajan, 2014). If part-time E-hailing service drivers make RM10 per hour and put in 10 hours per week, then these upfront costs, both in terms of direct expenses and time, are about equal

to 5 weeks of employment. This presupposes that obtaining a licence must be done in person; if it may be done online, that assumption is made.

In addition to these expenses, E-hailing service providers may charge drivers for the LPP. Costs will probably rise as a result of the need for extra insurance coverage (Chen *et al.*, 2020). Costs may also result from the compliance requirements for cars, which, while the specifics are not yet known, may include specifications for brand-new equipment like fire extinguishers (Thierer *et al.*, 2015). Together, these expenses are probably going to be a big turnoff for potential E-hailing service drivers, especially for those planning to work part-time. There is already proof that the introduction of these new laws has caused a fall in the number of drivers. For instance, Grab has reported a drop in the number of new drivers since the regulations were introduced (The Star Online, 2018). This impact is very likely to increase following the entry into force of the new requirements. Fewer E-hailing service drivers will likely increase prices, as there is no indication that customer demand is likely to fall in line with supply (Miller, 2016). There are already indications that E-hailing service prices have increased following the announcement of the regulations. This effect is likely to compound with the natural expectation that E-hailing service operators and drivers will pass on some of the cost of compliance to the consumer. Price control is further discussed in detail below.

2.27.3. Price controls

There may be unforeseen effects from the choice to include direct price controls in the new regulations (Edelman & Geradin, 2016). This happens in two ways. First, a cap on surcharging is imposed, regulating the price that is provided to the customer. The second is the restrictions on the commissions paid to E-hailing service providers, which serve as a cap on the cost of service that providers can charge drivers (Johal & Zon, 2015). It is unclear why price regulations are necessary because E-hailing services have increased price competition for consumers. The two hazards associated with restricting surcharging are as follows: First, the impact on potential earnings may make drivers less inclined to work, especially during peak hours, limiting options and the welfare of consumers. Second, there is a chance that this may reduce the opportunity for competition from

new providers of E-hailing services, as they will have less room to differentiate on pricing (Ranchordas, 2015). Although the absence of a monopoly in the E-hailing service market negates the need for price regulations, doing so can unintentionally shield incumbents from competition.

There is a chance that commission controls would discourage new e-hailing service operators from entering the market, either because it will be less commercially viable or because they won't have as many alternatives to innovate and challenge the market leaders (McLean, 2015). For instance, a new E-hailing service provider could figure out a method to pay potential drivers in a way that they prefer in exchange for increased commissions to the provider, but that innovative possibility is currently barred. Therefore, despite the existing monopoly, these controls have the effect of raising entry barriers for new businesses and possibly giving incumbent firms an unfair competitive advantage, which would support the adoption of direct controls (Rauch & Schleicher, 2015). There is a chance that commission controls would discourage new E-hailing service operators from entering the market, either because it will be less commercially viable or because they will not have as many alternatives to innovate and challenge the market leaders. For instance, a new E-hailing service provider could figure out a method to pay potential drivers in a way that they prefer in exchange for increased commissions to the provider, but that innovative possibility is currently barred (Barry & Caron, 2014). Therefore, despite the existing monopoly, these controls have the effect of raising entry barriers for new businesses and possibly giving incumbent firms an unfair competitive advantage, which would support the adoption of direct controls. Developing new regulations helps to equate the transport industry to avoid further disadvantages and is highlighted in detail below.

2.28. Options to develop the regulations

The safety of passengers and drivers will be enhanced by new laws, which will provide E-hailing services a solid legal foundation (Johal & Zon, 2015). The imposition of significant financial and administrative hurdles on e-hailing service operators and drivers will result in adverse effects that are expected to follow the proposed legislation. These unfavourable effects result from using the same strategy of high barriers to entry for new E-hailing services as for taxi services. High entry barriers run the risk of unintentionally fostering a monopolistic environment where larger, better-funded businesses have a definite edge over emerging technological start-ups (Miller, 2015). The

laws are driven by the admirable objective of creating a "fair playing field" for taxi services and E-hailing firms to compete on. To ensure that fairness does not compromise the competitiveness of the service or the benefits to the customer from a dynamic and inventive market, the government should examine if the regulations for taxi services could be strengthened. The justification for the heavy regulatory burden must be considered before deciding whether the regulatory framework for the traditional taxi industry may be improved. According to Cetin and Deakin (2017), there are four key justifications for the high level of regulation of taxis.

The claim that regulation is necessary because there are major informational imbalances between the consumer and the taxi is the most notable (Ranchordas, 2015). One cannot expect the buyer to know the best route for their trip or, consequently, the greatest price. Additionally, they lack knowledge regarding the driver's calibre before signing a contract for that driver to render a service. This justification for regulation justifies rigorous standards for the calibre of the driver and the vehicle, as well as pricing limitations. The negative externalities that the taxi industry produces are a second argument in favour of the strict regulation of the industry. Specifically, the fact that a large number of taxis will increase traffic and pollution (Rauch & Schleicher, 2015). This justification is offered to support legislation that restricts the overall supply of taxis in a certain area. The third reason is that since taxis are a crucial part of the infrastructure for public transportation, the government is justified in regulating the sector to guarantee a particular standard of availability and quality.

This justification is also used to support direct price limits, ostensibly to guarantee that all members of the public can utilise taxi services (Chen *et al.*, 2020). The argument that the taxi sector may possess the characteristics of a natural monopoly is the final one. Ironically, this is influenced in part by the other justifications for regulation, namely the scarcity of cabs and the high obstacles to entry, which raises the possibility of an unwarranted concentration of market power (Miller, 2016). Price controls are sometimes justified using this justification. In addition to these four, there is also the necessity to safeguard the taxi industry's distinctive cultural brand (particularly in London and New York). Here, it is argued that because cabs are ingrained in national culture, the government is required to maintain a particular standard of excellence. These justifications have long served as the foundation for how the taxi industries are regulated in various nations, including Malaysia. Together, they have produced a regulatory system characterised by pricing limits, rigorous supply

controls, and high entry hurdles due to regulations for drivers and vehicles (Allen & Berg, 2014). The traditional taxi sector is particularly vulnerable to competition from e-hailing services since this regulatory structure has restricted the space for innovation or competition.

Grab's attempt to launch and compete as a taxi company in the District of Columbia in the United States involves more procedures than starting a small business in China, Venezuela, Mozambique, or Bolivia to demonstrate how heavily regulated the taxi industry is. A large amount of research suggests that the taxi industry's high level of regulation has been overestimated, as shown by (Farren *et al.*, 2016). As a result, alternatives to the regulatory approach have historically been used in the taxi sector. Additionally, as the E-hailing service illustrates, recent technological developments have offered fresh approaches to many of the issues that have previously warranted high levels of regulation. The potential drawbacks of each of the primary regulatory framework's elements are covered in the next section, along with suggestions for changes. These include limits on supply, high barriers to entry and price control, and are discussed below.

2.28.1. Limits on supply

Limiting the number of taxis available is explained as being required to prevent "too many" taxis from increasing negative externalities (congestion, pollution), sparking a cycle of competition that can lead to subpar service to reduce costs and provide lower pricing (Calo & Rosenblat, 2017). The restriction of supply is justified more strongly because the government already interferes with the market's regular operation by directly influencing prices. In Malaysia, the government regulates the supply by providing taxi permits, which may be obtained by individuals or businesses. Since the government is unable to accurately determine the ideal number of taxis to have on the road due to knowledge gaps, these supply restrictions inevitably result in an imbalance between supply and demand (Gant, 2016). The case for restricting supply is likewise tenuous. There are more effective strategies to reduce harmful externalities, such as congestion fees or pollution taxes, and there is little evidence that a race to the bottom would harm the taxi sector. As was already said, one of the main issues with Malaysia's traditional taxi sector is the poor service, which has made it possible for E-hailing services to compete.

Limitations on supply also incentivise rent-seeking behaviour, with incumbent cab drivers encouraged to urge governments to maintain severe supply limitations and high entry hurdles to

reduce competition (Farren *et al.*, 2016). Additionally, there are unconfirmed reports that the awarding of taxi permits in Malaysia has occasionally been highly politicised, with the permits being used as a form of patronage to win over political supporters. An obvious illustration of how a market can respond to consumer demand more effectively is the E-hailing services sector. Thankfully, the government does not intend to impose tight limitations on the availability of drivers for E-hailing services. Additionally, the government has increased the issuance of individual permits to lessen the issues with the permit system. The government should go further, though, and consider eliminating all limitations on the supply of taxi drivers so that supply may naturally adjust to market demand (Kassan & Orsi, 2015). They should also consider incentive-based options to minimise negative externalities. The government may think about how to implement this gradually and in coordination with the other regulatory reforms listed below, given that this could be seen as a radical step. High barriers to entry are as follows.

2.28.2. High barriers to entry

In the taxi business, there are stringent regulations for both the vehicle and the driver. These restrictions, such as those requiring criminal background checks and insurance, are to some extent justifiable on the grounds of customer safety (Miller, 2016). The barriers that exist in the taxi industry, however, go much further than this and are justified by informational asymmetry - since consumers cannot assess the quality of the driver before accepting a ride, the government must guarantee that all drivers meet an acceptable standard to meet a customer's reasonable expectations. This is used to support the need for further theoretical and practical testing before the necessary permits are issued. However, studies indicated that these kinds of high barriers diminish supply and stifle competition (US Department of the Treasury Office of Economic Policy *et al.*, 2015). Additionally, technology has made it possible to significantly eliminate market inequalities. For example, a user of an E-hailing service app can read information about their driver before accepting a fare (or at least when they still have an opportunity to cancel). A networked feedback system that enables users to share driver information (in the form of evaluations and ratings) underpins this.

Additionally, considering GPS technology, it is no longer necessary for drivers to possess a particular level of local geography knowledge. Although it should be their discretion, some taxi

companies might decide to sell their services using the local expertise of their drivers (Rogers, 2015). The substantial hurdles to entry normally associated with the taxi sector are not required, as seen by the high levels of overall customer satisfaction with E-hailing services and the proven effectiveness of client-based feedback to monitor performance. While it is reasonable to impose some requirements that are directly related to safety, such as criminal background checks and insurance, the government does not need to impose higher standards that are more related to service quality on drivers of E-hailing services, such as additional examinations beyond those needed for a driving licence (Miller, 2016). Instead, the government should eliminate these standards for both E-hailing services and conventional taxi drivers, limiting them to just having a driver's licence, insurance, and a medical certificate.

This will ensure that the supply of part-time drivers remains high and preserve the comparatively low entry hurdles that make E-hailing services appealing to part-time drivers. Farren *et al.* (2016) propose establishing a universal need that customers should be able to have an advanced screening of driver quality and travel price, and allowing businesses to interpret that requirement however they like. This is if this is thought to be too harsh. High obstacles are also present at the corporate level due to the expense and application procedure for permits. The use of the permit system by the government to actively regulate the supply of taxis has already been mentioned, but because permits are expensive, they also serve as a barrier to entry (Miller, 2016). A similar mechanism, which will incur expenses per vehicle registered to each E-hailing service operator, is being suggested for E-hailing service providers under the LPP.

The LPP is largely created to be compatible with the current taxi permit; as a result, the cost of the LPP will be higher than the processing fee, which is currently only RM20 per vehicle, according to the recently released application form (Johal & Zon, 2015). Additional expenses discourage new entrants in both the taxi permit and the LPP cases and are ultimately passed on to the driver and the customer. The government should lower the cost of the permit system and the proposed LPP to modify the cost of processing the application, rather than attempting to reproduce the current taxi permit system through the LPP. High entry barriers also relate to the mode of transportation. Again, this can be justified in part based on safety. However, it might be claimed that customer input enabled by technology will also be used to track car quality in this case. Despite this, it is

obvious that some flaws might not be obvious to the consumer and might not be properly monitored by this system (Miller, 2016).

This supports a certain level of vehicle standardisation. However, the monitoring system should not be expensive or onerous. In Malaysia, PUSPAKOM is required to conduct vehicle inspections for both taxi drivers and, under the current legislation, drivers of E-hailing services (Crunchbase, 2018). The government should follow other nations' lead and allow certified mechanics to conduct inspections, with PUSPAKOM determining the standards. The NCAP rating is optional for automobile makers, nevertheless. Consequently, this criterion may exclude many models. It is also unclear why E-hailing service vehicles should be subject to different regulations than privately owned vehicles that are allowed to drive on public roads, especially considering that the vehicles are already the subject of additional inspections. There are also extra standards for traditional taxis, such as the installation of metres, safety equipment, and of course, colour specifications (Johal & Zon, 2015). Due to their need on a vehicle due to a lease or ownership, these regulations may have the effect of creating "barriers to leave," making it difficult for taxi drivers to transfer to other professions, including E-hailing services. To help with this, the government might think about implementing a "scrappage" programme for outdated taxis that enables them to be traded in for more modern vehicles. This places the study to the third factor of price control.

2.28.3. Price control

Price limits have also historically been justified based on knowledge asymmetry: as clients cannot know what the appropriate fare should be before contracting with a cab, rates must be established by the government (Ranchordas, 2015). Once more, it is obvious that technology offers a better answer to this issue than regulation. As was already mentioned, one of the key benefits of using an E-hailing service is being able to see the pricing upfront and knowing that once an agreement has been made, the rate cannot be adjusted. The same technology makes it possible for the customer to watch the route being travelled, removing the chance that they may be misinformed about the best route and overcharged. In addition, the necessity to prevent taxi operators from abusing their authority justifies pricing controls. This is necessary since, in part, supply is constrained and entry is difficult due to other rules that discourage competition (Edelman & Geradin, 2016). Taxi pricing

controls, like supply restrictions, prevent the market from operating as it should. Because of this, taxi drivers are frequently obliged to engage in direct bargaining, which reduces customer faith in the service. Additionally, it hinders new competitors from setting themselves apart in terms of price. Furthermore, there is little proof that price controls lead to better consumer outcomes; rather, data suggests that they lead to unfavourable shortages and surpluses (Coyne & Coyne, 2015).

A more competitive and inventive E-hailing service, which is not subject to any pricing limits, can provide lower prices and better service. Therefore, it is unclear why, under the new legislation, the government has chosen to limit surge pricing. To preserve robust competition, the government should concentrate on maintaining low entry barriers for new operators and drivers rather than trying to restrict prices (Johal & Zon, 2015). Therefore, there should be no price limitations placed on e-hailing services, and tariffs for conventional taxis should be liberalised. This might require gradual implementation, like how supply-side limitations are being loosened. As suggested by Farren *et al.* (2016), the government might impose a general requirement that businesses make sure clients have advanced knowledge of pricing to alleviate the issue of information asymmetry for traditional taxis (McLean, 2015). This might encourage traditional taxi drivers and operators to use E-hailing technology, but the specifications can be made vague enough to allow for the use of other strategies, including posting prices on the side of the car.

2.29. The nature of gender representation in the Taxi workplace

Women's participation and involvement in the taxi industry have not been accelerated due to conflicts and violence. Literature alludes that the taxi industry became an industry where violence and intimidation were the methods employed to maintain economic standing (Ntuli, 2015 and Ngubane, 2016). In this regard, the violence has been characterised by fierce gun battles and bombings, which have resulted in many people being injured or killed. Despite conflicts and violence within the taxi industry, a minority of women are in possession of participation and involvement in owning and driving taxis. As a result of toxic masculinities, the scarcity of women's participation and involvement in the taxi industry remains highly rated (Ngubane, 2016).

In line with conflicts and violence within the taxi industry, Connell & Messerschmidt (2005) explain toxic masculinity as certain cultural norms that are associated with harm to society and to

men themselves. Connell and Messerschmidt (2005) articulate that traditional stereotypes of men as socially dominant, along with related traits such as misogyny and homophobia, can be considered toxic due in part to their promotion of violence, including sexual assault and domestic violence. Rosen and Nofziger (2019) infer that the socialisation of boys often normalises violence, such as in the saying "boys will be boys" with regard to bullying and aggression. According to Levant and Pryor (2020), toxic masculinity is thus defined by adherence to traditional male gender roles that restrict the kinds of emotions allowable for boys and men to express, including social expectations that men seek to be dominant and limit their emotional range primarily to expressions of anger.

In this regard, literature asserts that being judged like men in this work led to their experiences of isolation and pressure to measure up with men, and they often fall prey to over-scrutinisation, where any shortcoming would be amplified through gender stereotypes (Maina & Caine, 2013). In addition, Jayachandran (2020) note that by going against social norms and expectations of what jobs women are expected to do, these women were further exposed to victimisation and harassment and unable to attract public support. Therefore, Wright (2018) postulates that women in the taxi industry are thus seen as intruders who threaten the dominant group, whose ways of expressing this displeasure are to inflict them through sexual harassment, unequal wages, and lack of promotion opportunities. Despite the presence of women in the taxi industry, Maina & Caine (2013) utters that men used their dominant positions to perpetuate the status quo and to prohibit women from succeeding in the industry.

Concerning toxic masculinity in the taxi industry, Jewkes (2014) articulates that gender-based violence at work became a form of social control for reasserting male dominance and traditional gender roles that place women in subordination to men and as a way of marginalising them out of the occupation. Jewkes (2014) also adds that threats of physical violence from the passengers explain the perceptions that they have towards women conductors and the consequences of not conforming to gender roles prescribed.

2.30. Patriarchy and the taxi industry

Mngxitama (2010) argues that patriarchy is part of sexism because it puts the interests of men before those of women and uses culture, religion, tradition and even love to justify the enslavement of women. It reduces women to being the property of men. In addition, Mngxitama notes that

patriarchy is an ideological construct of a system encompassing ideologies, beliefs, values, and practices underpinning the organisation and structure of society, which result in unequal power relations between women and men. According to Miriam (2015), men are a prized commodity, yet there appears to be no clear consensus on the type of skills and qualities they exhibit besides being physically different from women. On the other hand, Jones asserts that the subjugation and subordination of women in all spheres of life, beginning with the family, are impacted by patriarchal attitudes (Miriam, 2015). Jones also emphasises that it is a historical and widespread phenomenon, continuously reinforced by social practices and institutions, including education, work, religion, culture, the arts, and the media and has come to be a natural, God-given or part of the tradition and culture.

2.31. Theoretical framework

2.31.1. Introduction

Different technology theories and Hegemonic masculinities theories that relate to E-hailing transport have been used to explain the phenomena under study. The technology model theories help us to explain the use of the online world in the transportation industry from different points of view. In this work, E-hailing transportation services are discussed from a variety of theoretical angles. To examine youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period, the Technology Acceptance Model, the Diffusion of Innovation Theory (DIT) and Hegemonic masculinities theory are discussed. The combination of these theories will help in interrogating the issue of e-hailing transport services from all angles. In building and anticipating various events that happen all over the world, whether in natural, social, biological, or psychological elements of human beings.

2.32.2. The importance of theories in research

Human beings have always been on a quest to discover, explain and understand the laws of the universe and the behaviour of every living thing. This has given a rise to different ideas which are critical in constructing theories. A theory is helpful in explaining and predicting everyday experiences and phenomena of the world (Craib, 2015). This means that theories explain and predict phenomena that occur around the world, whether in the natural environment, in the social

environment, or in the biological and psychological aspects of human beings and animals. Theories can also be defined as an organised body of concepts and principles intended to explain a particular phenomenon (Tavallaei & Abu Talib, 2010). This means that theories combine concepts and laws in order to answer the how and why questions. In research, theories help to provide detailed and organised explanations of the problem being researched.

According to Craib (2015), in researching challenges, theories determine the policy environment. This means that theories help to highlight how the phenomenon is perceived, what is known about it, what aspects should be emphasised, and what actions or decisions ought to be taken. Based on this statement, theories are essential in looking at the research problem and connecting it to the larger structural environment. This is how policies are linked with the problem, the knowledge that is available concerning the problem, and what can be done to solve that problem. Such an angle of viewing the world is essential in providing insight and solutions to the problem under study.

In social sciences, theories are essential because they are employed to explain and understand the experiences of individuals, groups and communities, and general ideas about the world (Craib, 2015). It is important to understand the various experiences, cultures and behaviour of different people when seeking to have knowledge about them, or to have critical insights into their ways of life. Theories help with ideas that can be used to minimise social ills or remedy certain challenges. This means that theories can provide specific laws that can explain the occurrence of a certain problem. Therefore, when one understands a specific problem, one can devise appropriate solutions or make recommendations. In short, theories are a roadmap towards finding a solution for a certain problem.

Theories are essential in explaining youth entrepreneurship from different angles, but they are silent on the role of youth entrepreneurship in the transportation industry. This limits scholars and researchers' ability to holistically explain and understand the issue of youth entrepreneurship in e-hailing transport services. Therefore, it is very important to use Technology model theories as they explain the conditions under which youth are challenged in the E-hailing transport services, and their predominance in certain sectors (Tavallaei & Abu Talib, 2010). It would be difficult to understand the role of youth in e-hailing transport services if Technology model theories were left out. They help to explain various behaviour and their vulnerability in the transportation sector.

There is a need to develop a theory or a model which will be capable of explaining the issue of youth entrepreneurship in e-hailing transport services. By doing so, researchers will have contributed to youth entrepreneurship in the E-hailing transport services.

2.32.3. Theories discussed in the study

2.32.3.1. Technology acceptance model (TAM)

Davis created the Technology Acceptance Model (TAM) in 1989. According to this theory, individuals are more likely to adopt technology when they perceive it to be useful. TAM theory proves that the determination of technology is seen by its perceived usefulness (PU) and perceived ease of use also known as PEOU. Perceived usefulness (PU) is the degree to which a person believes that the use of a particular system would enhance his or her job performance (Davis, 1989), while PEOU, on the other hand, is seen as the degree to which a person believes that a system would be free from effort (Venkatesh & Davis, 2000). The TAM developed by Davis predicts that information technology is accepted (Paul *et al.*, 2003). The TAM outlines the main reasons for technology acceptance or rejection. Even though that is the case, TAM has limits in terms of applications that go beyond the workplace because it does not consider how social factors affect the adoption of technology. TAM was questioned by Venkatesh and Davis (2000) due to the absence of extrinsic elements, such as social influence and conducive conditions that could affect the adoption and use of technology.

The theory is the most appropriate for the study because it ably supports the technological understanding of E-hailing transportation services, which improves predictions of the usage of new information resources. The thesis is based on the idea that improved personal control, flexibility, and skilful information usage can result from confidence in using technology. Therefore, greater productivity may result from improved knowledge. In other words, the transportation sector will benefit from and be effective with the usage of technology platforms for E-hailing services. The second theory is the Diffusion of Innovation Theory (DIT), which is discussed below.

2.32.3.2. Diffusion of innovation theory (DIT)

Everett M. Rogers introduced the theory of the diffusion of innovations in 1962. The hypothesis discusses the variables that would lead people to adopt innovations. The diffusion of innovations theory (DIT), which evaluates the adoption of new technologies in a social system, was first introduced by Rogers (2003) in 1962. The likelihood of adoption and continuing usage of an innovation decreases the more challenging it is to implement (Rogers, 1995). DIT intersects both social and psychological theory to help predict how people make decisions to adopt innovation by assessing their adoption patterns. Rogers (2003) looks at diffusion as a process in which innovation is spread through certain channels over time among the members of a social system. He claims that a person is motivated to dispel doubt about the benefits and drawbacks of an innovation.

The invention involves a number of processes, including information, persuasion, decision-making, implementation, and confirmation. An individual learns about the establishment of an invention in the first phase of the decision-innovation process knowledge and then continues to look for information about the innovation. Knowledge alone does not guarantee that a person will adopt a new idea because individual attitudes also influence whether a person will accept or reject a new idea (Sahin, 2006). The decision stage follows the persuading stage and is when a person decides whether to accept or reject an innovation. Adoption refers to "full use of the innovation as the best course of action available" in the decision stage, whereas rejection refers to "not adopting an innovation" (Rogers, 2003).

The theory effectively explains how technology and innovation seized control of the e-hailing transportation services, including stimulus-response patterns and the way people learn from experiences in their environment (Aloi *et al.*, 2020). It also underlines how knowledge is a key factor in how new technology is adopted in E-hailing transport services. The idea also emphasises how crucial psychological and social factors are. COVID-19 presented the world with a severe loss of life and impact, which has no geographical bounds or expected time when its effects will subside. It has impacted nations all over the world, upsetting transport operations in every field and changing people's daily lives. The study's major goal is to determine youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services. Public transport industries were most negatively impacted. Young people absorb socially constructed knowledge, values, attitudes, and behaviours from society and then put them into practice (Aloi *et al.*, 2020). The theory aids the

researcher in explaining the behaviour of youth entrepreneurship in the E-hailing (Bolt) transportation services, as well as how these factors interact continuously.

2.32.4. In this section, different masculinities are discussed, as well as an account of masculinities that may impinge on gender representation within the E-Hailing industry.

2.32.4.1. Hegemonic Masculinity Theories

Hegemonic masculinities are a set of theories that were established by Connell after observing how misogyny and male dominance work in societies. According to Connell (2018), hegemonic masculinity is the normative ideology that states that to be a man is to be dominant in society and that the subordination of women is required to maintain such power. Similarly, Jewkes (2014) maintains that hegemonic masculinity states how and why men maintain dominant social roles over women and other gender identities, which are perceived as feminine in a given society. In this regard, Connell (2018) and Glick, Berdahl, and Alonso (2018) opine that there are individual differences in male gender role socialisation. This specific masculinity works to position men in a space of power; thus, it is often the ideal form of masculinity that men are socialized to achieve. Furthermore, Smith, Parrott, Swartout, andTharp (2015) indicate that to demonstrate hegemonic masculinity, men are expected to adhere to a strict set of prescribed masculine gender roles that work to promote male dominance through subordination and an overall distrust of femininity. This notion can also be found in workplaces and, in particular, the E-Hailing industry in this regard.

In addition, hegemonic masculinity has proved significant in organizational studies, as the gendered character of workplaces and bureaucracies has been increasingly recognized. Thus, Literature reviews that hegemonic masculinity symbolizes and enacts power over other masculine identities as well as over women (Weil, 2022). In addition, Mcvittie, Hepworth and Goodall (2017) reiterate that It constitutes the most socially valued form of masculinity to which individual men can aspire, notwithstanding that it does not necessarily reflect the lived identities of many, or indeed of any, individual men. Therefore, hegemonic masculinity is often marked by features and values such as a preoccupation with status and dominance; exhibiting toughness; avoiding soft emotions and behaviours; self-reliance; aggressiveness; risk-taking behaviours; and hyper-competitiveness (Sattari, 2021; Jewkes, 2014; Glick et al., 2018).

Furthermore, literature reviews suggest that workplaces with highly masculine cultures encourage men to not only engage in practices and behaviours that are culturally understood as masculine as

an integral part of their careers, but also to seek to outperform others in masculine performances (Sattari, 2021; Glick et al., 2018). Moreover, Sattari (2021) articulates that women's entry into traditionally masculine fields and their success in doing men's jobs can invoke feelings of threats to not only men's exclusive access to these domains. Thus, Bhana, Janak, Pillay, & Ramrathan (2021) add that the credibility and status that emerge from their everyday achievements of masculinity through doing types of work that are culturally perceived as exclusively manly. In this regard, literature reviews that women's transgressions into masculine fields, especially in male-dominated fields with highly masculine culture, unsettle the routines and norms shaped around the all-maleness of such work environments (Bhana, Janak, Pillay, and Ramrathan, 2021; Glick et al., 2018).

In addition to men's behaviours, men engage in performing masculinity and sustaining their masculine status (Bhana et al., 2021). According to Connell (2018), complicity is the second category that determines relations among masculinities. This category refers to the extension and institutionalization of a male power group under mutual agreements (Connell, 2018). Thus, Hegemony is not actually effective if a careful and strategic plan is not well designed to guarantee power control. Connell (2018) also asserts that complicity is a cautious conspiracy and one of the main important factors in the power of masculinity because it refers to the intellectual planning to dominate other groups. According to Jewkes, Morrell, Hearn, Lundqvist, Blackbeard, Lindegger, Quayle, Sikweyiya & Gottzén (2015), complicity also reaffirms hegemonic masculinity "on how men should behave and how putative 'real men' do behave, as the cultural ideal". Jewkes et al (2015) opine that white men created a code based on aggressiveness, ambition, racism, and a compulsory heterosexuality in order to determine a particular model of masculinity through which they could hold power.

The third level of masculinity, according to Connell, is subordination. Connell (2018) indicates that masculinity deals with any political and cultural exclusion, including legal violence to dominate another masculine group. It directly has to do with the actual performance of authoritarian power based on the methods of control that have been established.

The last category of masculinity is marginalization. According to Connell (2018), marginalization of masculinity involves the relationship between masculinities in dominant and subordinated classes or ethnic groups. Mahtab et al (2016) articulate that while hegemony, subordination, and

complicity are aspects of the gender order, Connell offers marginalization to characterize the relationships among men that result from class and race intersecting with gender. Regarding relations among masculinities, Connell (2018) demonstrates that this relationship is one of authorization and marginalization because hegemonic masculinity is conflated with whiteness and middle-class status, and it confers authority in a way marginalized masculinity does not. Furthermore, Mahtab et al (2018) and Connell (2018) show that gender hegemony is so inextricably tied to heterosexual, middle-class, and white status that male dominance falls through the conceptual cracks when considering groups whose members are not white and middle class.

2.33. Summary of the chapter

This chapter covered youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period. It also highlighted the effects of COVID-19 on the transportation industry, gender dimensions, and the challenges thereafter. Both the public and e-hailing transport sectors were included, with e-hailing dominating the industry because of its further progress and advantages compared to the public transport industry. Post-COVID-19, there are still some underlying matters regarding public and E-hailing transport sectors and their differences in operations. Even in that case, the E-hailing transport sector, particularly Bolt, keeps on making progress and ensuring that customers are comfortable and satisfied. The chapter covered a theoretical framework that includes the Diffusion of Innovation Theory (DIT), the Technology Acceptance Model (TAM), and the Hegemonic Masculinity Theories to comprehend the problems with E-hailing services provided by young entrepreneurs and women.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1. Introduction

This chapter covered youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of and was explored following the research approach, measures of trustworthiness, research design, description of the study, population, sampling procedure and sampling size, data collection, data analysis and the ethical consideration.

A paradigm is a conceptual framework that a group of academics adheres to; the word comes from the Classical Greek phrase *paradigmata*, which means "a standing side by side" (Babbie, 2016). Bryman (2012) defined a research paradigm as a "full system of ideas. The investigational or investigative process is said to be guided by a set of principles. They provide a framework for understanding and viewing a phenomenon (Babbie, 2016). It is essential to understand these ideas or viewpoints in order to defend the research methodology employed in the study.

Any of the paradigms specifically in the two branches of the philosophy of science, known as ontology and epistemology, dictate the choice of a particular research approach that the researcher chooses to direct his or her study. Subjectivity and objectivity are related to ontology. The central question is whether social entities should be viewed as social constructs created by social players or as having a reality independent of social circumstances (Scotland, 2012). How knowledge is produced, gained, and shared is a topic of epistemology. Therefore, every paradigm has its ontological and epistemological assumptions (Scotland, 2012). This means that each paradigm is unique in its assumption of reality and knowledge production. There are many research paradigms but for this study, only the interpretivism paradigm is discussed.

3.1.1. Interpretivist research paradigm

The interpretivist paradigm was used as the philosophy underpinning this study. Interpretivism can be traced back to the work of Immanuel Kant (1724-1804), Wilhelm Dilthey (1833-1911) and Max Weber (1864-1920), whose arguments were based on the premise that research should be aimed at

understanding, or *verstehen*, of humans' unique lived experiences in their context. Humans are in a process of continuously interpreting, creating, giving meaning, justifying, and rationalising their daily actions (Antwi & Hamza, 2016). The interpretivist paradigm holds the idealistic ontological perspective, which implies that various realities vary from person to person. Only by comprehending how people's socially created meanings are the distinctions revealed (Scotland, 2012). Interpretivism enables people to establish their meanings considering their surroundings, emotions, experiences, and difficulties because the social world is complicated (Nelson, 2014). According to interpretivists, reality is arbitrary and impacted by a person's context, which can include their surroundings, past experiences, current views, and interactions with the researcher and participants (Ponterotto, 2005). The interpretive research paradigm was useful for the researcher as it helped in understanding the reality of the participants in their natural context.

In terms of epistemology, interpretivism considers knowledge to be acquired through an inductive process. An inductive process in knowledge production means that theories, laws, and patterns are built from observations of the world (Scotland, 2012). In other words, interpretivists believe in knowledge production through focusing on and understanding the experiences of people, the meanings they attach to their experiences, and how they interpret them. From these, theories can be created, unlike the positivists, who apply and test already existing theories. Interpretivism contributes to the development of new and unique ideas through exploring and understanding the world of the participants by focusing on their meanings and interpretations. Moreover, the paradigm assumes that human beings' behaviour cannot be predicted or explained using laws as in the natural sciences.

Interpretivism encourages methods that are adaptable and welcoming of discussion in order to communicate participants' experiences and the meanings associated with them (Antwi & Hamza, 2016). The study aimed to pinpoint the influence of COVID-19 on youth entrepreneurship in the E-hailing (Bolt) transport service in the Vhembe district of South Africa by interacting with them and learning about their social context. In contrast to the positivist paradigm, the interpretivist research paradigm acknowledges the interactive nature of the relationship between the researcher and the participants. The researcher needs to be unbiased but subjective. The research cannot be value-free because the researcher interacted with those who are impacted by the research. According to the interpretivist paradigm, participants and the researcher must negotiate and agree

on the findings (Antwi & Hamza, 2016). Reflexivity should be a defining characteristic of the interaction between the researcher and the subject of the investigation. When conducting research, the researcher's reflexivity is concerned with maintaining an impartial, empathetic stance. Reflexivity is necessary, according to Scotland (2012), to prevent overt or intentional bias on the part of the researcher and to promote objectivity in the gathering, processing, and interpretation of the data. With the paradigm in mind, the researcher was able to meet the participants where they are naturally, get to know them, and engage in conversation with them during interviews and focus group sessions. She learned more about the subject of the study as a result. She remained impartial and comprehended young people starting their own businesses in the E-hailing transportation industry during post-COVID-19, thanks to reflexivity.

Briefly said, the interpretivist research paradigm was chosen for this study because it allowed the researcher to learn about the participants' socially constructed meanings directly from them. Second, it directed her to comprehend the participants' various realities in their actual environments. The participants came up with fresh, original ideas as a result. An interactive relationship between the researcher and the participants was made possible by interpretivism, and this allowed for the production of much-needed in-depth information about youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe

3.2. Research Approach

A research strategy is a method for learning new information (Antwi & Hamza, 2015). The interpretivist paradigm is what this study is based on. As a result, the qualitative research approach is suited for this study since the researcher wished to understand the participants' perceptions of their own reality and how they understood and related to it. A distinctive method of conducting research in which the focus is on how individuals understand their own social environments is the qualitative research approach (Bryman, 2012). Compared to the quantitative approach, which limits the participants' opinions to the researcher's responses, which they must select from, this made it preferred. The qualitative technique makes use of highly unstructured tools, such as in-depth interviews, which provided the researchers with additional insights into youth

entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe.

Another reason for using qualitative research was its emphasis on an inductive approach to knowledge production. Unlike quantitative research, which takes a deductive approach whereby the researcher aims at testing theories, qualitative research focuses on generating new ideas and new theories that can later be tested through quantitative research (Bryman, 2012). Much of qualitative research is on exploring and describing a new area where little is known, and also, as noted above, understanding people's beliefs from their own perspectives (Antwi & Hamza, 2016). In this study, the researcher was interested in testing any theory but wanted to understand youth entrepreneurship challenges in E-hailing transport services during and post-COVID pandemic period from their own perspective.

The qualitative approach also enabled the researcher to understand the socially constructed meanings through getting closer to the participants and interacting with them in their natural context. According to Bryman & Bell (2007), qualitative researchers are more concerned with subjectivity, whereby they gain access to the natural setting of the participants so as to gain an insider's experience. This enabled the researcher to experience the subjective dimensions of the phenomenon under study. The researcher interviewed the participants in their natural settings so that she could observe some of the issues they were raising. This helped the researcher to look at the participants' way of life, living conditions, and non-verbal gestures.

The other unique characteristic of the qualitative research approach is that it is unstructured and flexible as compared to the quantitative approach. Its aim is to explore diversity in participants' views on the phenomenon being investigated rather than merely quantifying responses. Qualitative research does not seek to generalise the findings beyond the context in which the study has been made. It instead seeks to understand the behaviour, experiences, and beliefs in that context (Bryman, 2012; Kumar, 2014). With such concerns, the qualitative research approach was the best option for this study, because it enabled the researcher and the participants to build rapport before the interviews, and the participants to gain trust in the researcher. The qualitative approach was used because of its capacity to emphasise the voices of the participants. As a result, the approach enabled the voices of the participants to be included in the data presentation using quotations,

which captured the exact words as they were said by the participants. This was later analysed to derive their underlying meanings.

3.3. Research design

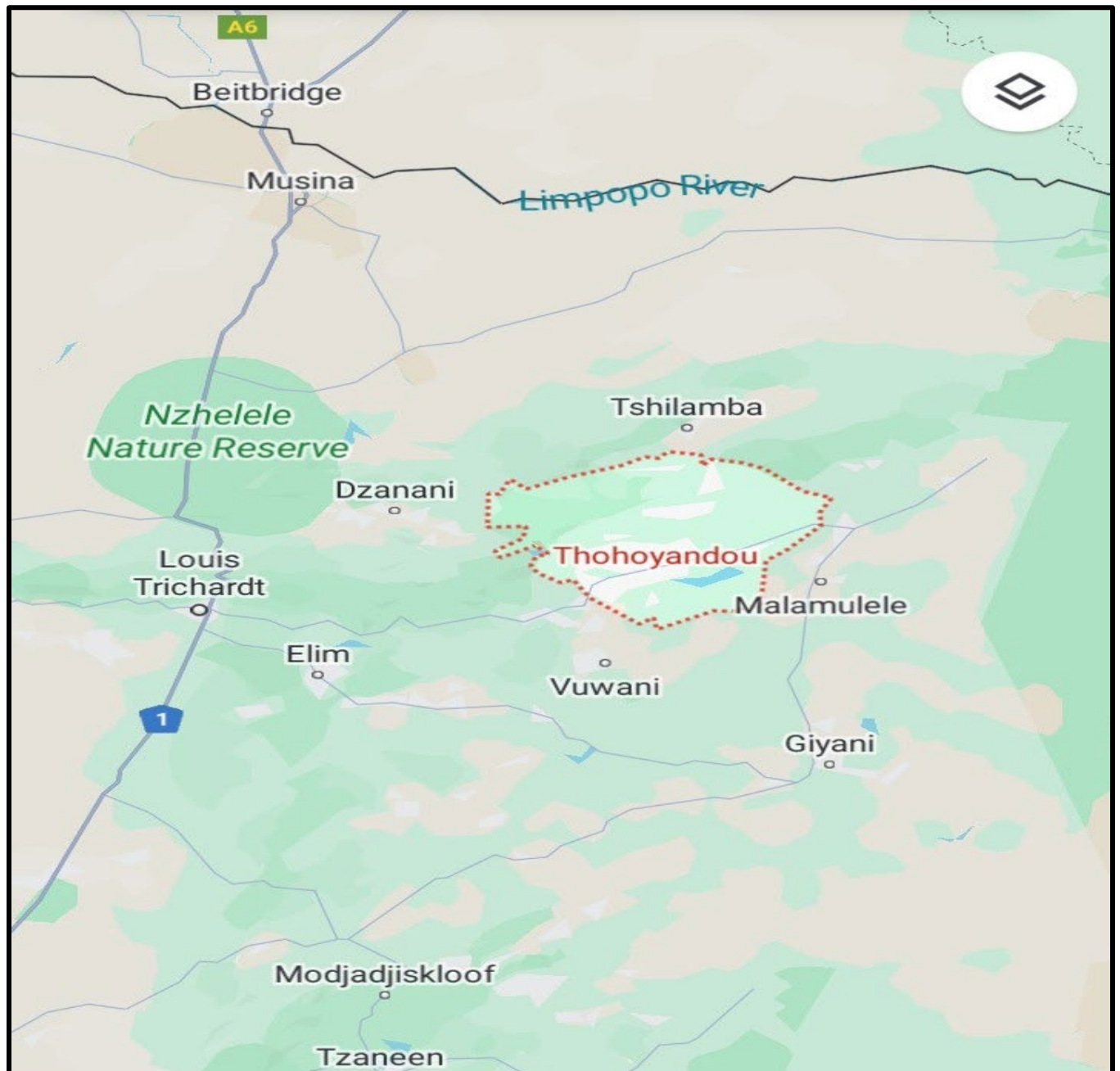
A research design can be defined as the map of how a study will be conducted to meet the objectives of the study. It shows the procedures that will be used to collect and analyse data, select the participants, and analyse the information. According to Kumar (2011), a research design is a procedural plan that the researcher adopts to answer questions. An explorative research design is one of the research designs that can be employed to answer the research questions.

In this study, an explorative research design was used. Explorative research design refers to a methodology approach that explores research questions that have not been previously studied in depth (Ahmed, 2010). It is often used when the issue you are studying is new or the data collection process is challenging in some way. An explorative research design employing a constructivist worldview was used in the study to provide a deeper understanding of the youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period, and to uncover the challenges they face. It seeks to understand the world in which they live and work. Youth entrepreneurs in the transport industry were explored during the mutations of the pandemic. At the end of the study, the researcher was able to understand youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period. This also helped the researcher to come up with effective measures for the prospective improvements of E-hailing transport services in the long term. The challenges that mask youth entrepreneurs in transportation services to thrive assisted in unravelling and identifying gaps in e-hailing transport services.

3.4. Study location

The study was carried out in Limpopo province's Thohoyandou, Vhembe area. Thohoyandou is a small town located in the Vhembe district, Venda, in Limpopo province, where people reside and work. People from the villages travel to Thohoyandou for shopping, schooling, and other various reasons. People travel in and out of it every day, as it is one of the busiest and most advanced locations in the Vhembe area. In Thohoyandou Town, particularly in malls and retail centres, many bolt-on rides can be found. People frequently travel to and from their houses for both personal and

professional reasons. Many people live and work both temporarily and permanently in the town's complexes and malls.



3.4.1. A map showing Thohoyandou as a location of the study

3.5. Population

Identifying the study demographic from which a sample was drawn was necessary to ask for information on a particular topic of interest. A population is a group of people who have certain traits in common (Kumar, 2014). The population of this study was made up of young entrepreneurs working in the Vhembe district of Thohoyandou's E-hailing transportation services between the ages of 18 and 35. The study concentrated on young entrepreneurs in e-hailing transportation services because individuals in this age range still fall under the definition of youth under the South African Constitution (National Youth Development Agency (NYDA), 2015). People in this age group are more likely to work in the transportation sector because they are youthful, active, ambitious, and still looking to explore in search of greater chances. People who would be included in the study regularly used E-hailing services before and after the COVID-19 pandemic. This is significant since they had lived in the targeted location for an extended period and hence had first-hand knowledge of the phenomenon under investigation.

The study employed a qualitative approach to collect in-depth information on youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period, and the challenges they may face (Creswell, 2014). A qualitative research approach was useful in the study to uncover the challenges faced by youth entrepreneurship and the gender dimensions in E-hailing transport services. The behaviour, attitudes, emotions and perceptions of youth entrepreneurs in the industry were examined, which also helped to interpret the results from what they were experiencing.

3.6. Sampling and sampling procedure

Sampling is the procedure of selecting units for observation from a population (Babbie, 2016). It is the selection of participants from a population of interest to be included in the study. There are two broad types of sampling procedures: probability and nonprobability. Non-probability sampling was used in this study. When the study's goal is not to generalise the findings, non-probability sampling is used (Etikan, Musa, & Alkassim, 2016). This is aimed at exploring and understanding the diversity of the participants rather than generalising or quantifying. The researcher used a non-probability purposive sampling method. Participants were chosen through the use of purposeful

sampling, which will allow the researcher to do so based on some particular characteristics that will be deemed crucial. Purposive sampling enabled the selection of data, expertise, and knowledge regarding a specific occurrence. The researcher used purposeful sampling in this study because she wanted to select young entrepreneurs working in the e-hailing (Bolt) transportation sector, since they were able to share their experiences more than anybody else. The inclusion criteria that were utilised to select the participants were described, and these included age ranges, gender, specific diagnoses or behaviour. These criteria ensured that the participants were relevant to the research question and that the study could be conducted efficiently and ethically. They also helped to ensure that the study sample was relevant to the research question and that the results were meaningful and generalizable to the target group.

The researcher was able to determine the precise features of the participants in this study by using the purposive sampling technique. The inclusion of the participants was that they had to be e-hailing drivers, between the ages of 18 to 35, operating in Thohoyandou for five years. Since there are numerous bolt drivers in Thohoyandou, the researcher purposefully chose the participants while taking the inclusion criteria into account. The researcher continued approaching young males and females who were drivers of E-hailing (Bolt) in Thohoyandou. Although several drivers recommended one another, the researcher did not depend on the advice because there were so many Bolt drivers in the area. Eleven people made up the sample size. The researcher chose a smaller sample because she wanted to interview a limited number of people

3.7. Data collection method

Sets of values of qualitative variables were used, whereby an in-depth method was utilised to help the researcher collect enough information from the participants (Yin, 2016). These covered the marital status of the participants, which included being single, married, divorced or widowed. Semi-structured face-to-face interviews were used in the study, using purposive sampling methods to select youth entrepreneurs in the E-hailing transport service. The face-to-face interview enabled participants and the researcher to interact with each other, respond and address the issues, thereby allowing the researcher to better understand the coverage and diversity of thoughts, perceptions, and opinions of the participant (Yin, 2014).

Interviews were used in the study to gather in-depth information related to their experiences and viewpoints on the E-hailing transport service during COVID-19. The interview is a data-collecting technique that entails oral interaction between the researcher and the participants to gather data that deals with the study's goals (Yin, 2014). Semi-structured interviews consist of the characteristics which allowed the researcher to organise the questions in a structured (closed) and unstructured (open-ended) format based on the themes used in formulating the questionnaire. Tape records were used during the interviews to capture the information. This enabled the researcher to gather in-depth information. The researcher, in this manner, was flexible in probing Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period. The benefit of using an interview in this study was to obtain constructive and specific responses and suggestions on the subject of the study and to obtain sufficient, detailed, comprehensive, rich and audio-visual data while using relatively few participants (Yin, 2016).

3.8. Data analysis

Data analysis refers to the process of evaluating data using analytical and logical reasoning to examine each component of the data provided (Leedy & Ormrod, 2016). Based on the data from different angles relating to Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, the researcher looked at their experiences and effects as a key to understanding and interpreting the data provided (Maree, 2010). The study provided explanations of the data gathered. The thematic analysis method was adopted to identify the experiences of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe (Lloyd, 2018). The method of thematic analysis was useful in the study because it helped the researcher to emphasise, pinpoint, examine, and record the information on Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services and how they are impacted during and post-COVID-19 pandemic. This entailed a proper analysis, which made the researcher understand and reach conclusions about participants and produce trustworthy results.

The steps followed in thematic analysis are familiarisation, coding, reviewing themes, defining and naming themes and reporting. The processes are further described below:

Familiarisation:

This is the initial stage, which involves immersing the researcher in the data, reading transcripts or other materials repeatedly and taking notes on the researcher's first impression

Coding:

The researcher labelled the key phrases, sentences and sections of the data that were relevant to the research question

Generating Themes:

The researcher grouped similar codes together to form broader themes or patterns of meaning

Review Themes:

The researcher refined and validated the themes by revisiting the data and ensuring that each theme is supported by evidence

Defining and Naming Themes:

The researcher provided clear, concise definitions and names for each theme to ensure understanding and clarity

Writing Up:

The researcher presented her findings in a clear and concise report, summarising the key themes and providing supporting evidence from the data

3.9. Criteria for evaluating the trustworthiness of the study

The methods employed in this work may not be complete without considering the basic issues relating to the assessment or measures of the trustworthiness of the research outcome. Four criteria were developed to measure trustworthiness, such as credibility, transferability, dependability, confirmability and ecological validity. Trustworthiness forms the most important part of the design of this study, with constant verification of the processes involved in this research. The researcher

then examined the processes by consulting established literature to support the employed procedures (Flick, 2015).

3.9.1. Credibility

Credibility concerns how believable the findings are (Kumar, 2011). In other words, the data should truly reflect the participants' views. In a simplified form, we look at the consistency of the results in a proper form. To ensure credibility in this study, the interview guide was translated into the participants' language to achieve effectiveness. It was then that the researcher translated the data into English. Secondly, the preliminary research findings were shared with the participants to check if the researcher misinterpreted or misrepresented the participants' views. The findings were later shared and made available for the participants to see if everything was accurate. This helped to increase the rigour of the research and provided a holistic understanding of entrepreneurship in the public transport service. Data was gathered using multiple forms such as interviews, observations, documents and audio-visual information rather than relying on a single source. Member checks by presenting the transcribed data to some participants also helped to establish the credibility of the research study (McLeod, 2017).

3.9.2. Transferability

Transferability refers to the degree of applicability of the research in other settings and is the interpretive equivalent of external validity or generalizability (Creswell, 2014). It is concerned with whether the results can be applied in other contexts or not. In transferability, the findings of the study were related to the studies and situations in a similar environment. The researcher ensured that the results were extrapolated to a wider population of the study. The doubts about how representative the obtained data are of the relevant universe followed the interview protocol. Again, the researcher purposefully selected the participants to make sure that the data presented was from the selected population.

3.9.3. Dependability

Dependability is an interpretive construction that parallels the reliability of the study (Ahmed, 2010). It matches the duplicability or replicability of the research by narrating all the changes that

will take place and how the research is affected by those changes. Dependability will be maintained by the researcher in being consistent with the use of time and analysis techniques (Flick, 2015). The same data was analysed by several researchers, and the results were compared to maintain dependability in the study. Inconsistencies in the data were discussed and addressed. The data was coded and recorded after two weeks to see if the results were still the same or not. The findings of the data were also discussed with the research assistants. This helped in identifying forfeited categories and themes when the study was completed.

3.9.4. Confirmability

Confirmability is concerned with the objectivity of the researcher and the neutrality of the data. It has to do with whether the researcher has allowed his or her values to intervene in the data-making process (Bryman, 2014). The researcher ensured that her values did not disrupt the data to ensure confirmability in this study. The researcher was objective in adopting a reflexive stance. Reflexive means that the researcher is to be empathetic and neutral at the same time. The issue is that in qualitative research, it is difficult to be objective because the researcher deals with people and their feelings. The researcher did not influence the views of the participants, and the findings of the study were a true reflection of the participants' views. The researcher and the assistants did the data collection and analysis to ensure confirmability in the study. The recordings were played in their presence to ensure that the data was recorded correctly, as expressed by the participants.

3.9.5. Ecological validity

Ecological validity has to do with collecting data on a natural environment. The data is presented in a natural environment to encourage truthful and real findings (Bryman & Bell, 2007). Data was collected in the natural settings of the participants to maintain ecological validity. The researcher interviewed youth entrepreneurs in E-hailing (Bolt) transport services in Vhembe District for them to be comfortable and open.

3.10. Ethical considerations

Flick (2015) referred to research ethics as a handbook of principles and procedures planned in response to growing awareness of ethically sensitive issues in research and scholarly activity. It is also with the steps taken to protect those who participate in the research. The study was approved by the Research Ethics Social Science Committee in April 2024 with the Ethical Clearance No: FHSSE/23/GYS/02/0429. The following ethics were considered in this study:

The following ethics were considered in this study:

3.10.1. Informed consent

Informed consent is the process of telling potential research participants about the key elements of a research study and what their participation will involve (Munette *et al.*, 2011). Participants were informed by the researcher about the purpose, procedures, risks, and benefits and obtained their consent before involving them in the study (Putman & Rock, 2016). It was the participants' free will to choose to participate in the study without any coercion from the researcher. In other words, before the participants participated in the study, they knew and understood everything about the study and signed the consent form in agreement.

3.10.2. Confidentiality

Confidentiality is commonly reviewed as similar to the principle of privacy (Wartenberg, 2010). Participants have the right for their affairs to be private. What was discussed between the participant and the researcher was assured to be not repeated, or at least not without their permission. In the study, participants' names were agreed to be kept confidential and would not be revealed in any course. For example, the names of the participants were used or replaced by participant 1, participant 2, participant 3, etc. In this manner, the researcher kept the names confidential.

3.10.3. Anonymity

Anonymity is defined as a situation where the researcher does not know or have access to the identity of the participants (Putman & Rock, 2016). When participation is anonymous, it is impossible to know whether an individual participated, and therefore, there is no way to describe the connection between individual participants' inputs and the results. The researcher informed

participants that they would remain anonymous and that they could not be asked for any personal information that would give away their identity. Therefore, the researcher agreed with the participants by not revealing their names or their personal information.

3.10.4. Deception of participants

Baron & Branscombe (2012) define deception as withholding information from the participants in such a way that they remain unaware of the true objectives of the research. The researcher informed participants about the true and correct reasons for collecting information from them. Participants were not lied to or deceived about the content of the study by the researcher to gain the favour of the participants. The contents of the study were correct regarding what the study was about, its focus, aims, and objectives.

3.10.5. Protection from harm

Protection of harm refers to a moral and legal commitment to support, respect, and value the dignity and worth of a person (Rossi, 2012). During the process of the interview, participants were asked questions that were not emotionally sensitive or harmful for them to participate freely (Menezes, 2012). The researcher respected the participants' input for the choices they made.

3.11. Summary

This chapter covered how the study was conducted about Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period. It adopted a qualitative research approach for the collection of in-depth information that participants provided.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter presented data and analysis. The study focused on Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, South Africa. The study selected 11 (eleven) participants, consisting of 6 (males) and 5 (five) female entrepreneurs in the E-hailing (Bolt) transport services in Vhembe District. The researcher used unstructured interviews to collect data from the participants.

4.2. Biographical information on Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe

The chapter presents the biographic information of all participants who took part in the study. It profiled gender, age, educational qualification, and marital status.

Participant	Age	Gender	Educational Qualification	Marital status
A	23	Female	Grade 12	Single
B	29	Female	Degree	Married
C	31	Male	College certificate	Single
D	19	Male	Tertiary level 2	Single
E	21	Male	Tertiary level 3	Single
F	33	Male	Degree	Married

G	25	Female	Grade 11	Married
H	35	Male	Grade 10	Married
I	27	Female	College certificate	Single
J	20	Male	Grade 11	Single
K	25	Male	Grade 10	Single

4.2.1. The table represents 11 participants, both male and female, whose age, gender, educational qualifications, and marital status were profiled.

4.3. Themes derived from analysed data

Objectives/Themes	Sub-Themes	Participants
1. Participation of women in the E-Hailing industry 2. Influence of COVID-19 on youth entrepreneurs in E-hailing (Bolt) transport service	- Restrictions on travel - Few rides (Inability to find customers)	- A, G, H, I - B, C, F, K
3. Factors that influence or limit the participation of youth entrepreneurs in E-hailing (Bolt) transport services post-COVID-19	- Lack of safety - Unfair pricing	- A, B, E, J, K - C, D, F, G, H

4. Challenges encountered by youth entrepreneurs in E-hailing transport services during the post-COVID period	• Not having permits • Not having enough money • No feedback from Bolt Company	• A, B, C • A, B, C, D, E, G, H, I • K
5. Supporting measures that can be taken to mitigate challenges encountered by youth entrepreneurs in E-hailing transport services during post-COVID-19	• Government intervention • Competition in public transport • A need to be registered as permanent employees	• E, K • B • C

4.3. A. The table above shows the objectives/themes, sub-themes, and participants who articulated their opinions underlying the themes of the study. Initially, most of the sub-themes were transcribed, followed by the themes. A brief outline of the theme was expressed to depict the course of discussion.

4.3.0. Theme: Participation of women in the E-hailing (Bolt) transportation service.

Masculinity

Women are increasingly participating in the e-hailing transportation service industry, driven by factors like economic empowerment, a preference for female drivers, and the need for more inclusive and safe mobility options. While this participation is growing, it's crucial to address

safety concerns and create more equitable opportunities for women in this sector. Recent research revealed that over 80 percent of e-hailing passengers would prefer female drivers when given a choice (Weil, 2022). These findings highlight the critical need for increased female participation in the industry, ensuring a more inclusive and trusted mobility experience for all. In line with this theme, Participants echoed the following sentiments:

Participant A

“The slow pace in involving women in the taxi industry hurts the industry because it is women who understand the problems women experience in transportation and how to solve these issues.

Participant G

Women have always been active taxi and e-hailing drivers. In spite of their hectic schedules of juggling household chores and performing domestic chores, as well as taking care of children, women use taxi services and ride-hailing services to the fullest, and this isn't always a smooth ride. We are facing harassment, intimidation, and discomfort. Most of our reports and social media keep exposing safety issues that women face while regularly finding themselves in a closed space with a stranger, and these challenges are not being addressed.

Participant H

“Masculinity always plays a huge role in the E-Hailing and taxi industry as it is male-dominated, and very few women are in existence in this industry. Women have to prove to be powerful in order to survive operating in this industry. Power within the industry, which is exerted through fear, is very important, and one has to show sort of control not to be regarded as weak, both by your peers and drivers

Participant I

In Thohoyandou, where masculinity is practiced in this industry, there is a huge gap between men's values and women's values as men are treated more superior. E-Hailing is viewed as a male industry. Women working in highly masculine jobs in a male-dominant labour market are viewed with suspicion.

Based on the response from the above participants, discussions around masculinity often center on safety perceptions and the potential for gender-based violence, particularly for women (Sattari, 2021). While e-hailing can offer convenient and affordable travel, concerns exist about the safety of female passengers, with some studies revealing disturbing incidents of harassment and assault. Additionally, research highlights the impact of gender on perceptions of safety and the willingness to use e-hailing services, especially at night or alone.

4.3.1. Theme: Influence of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period

Restrictions to travel

The study found that the restriction on travel by customers during COVID-19 contributed to e-hailing drivers struggling to make money. Since no person was allowed to use any form of border road transport or enter a cross-border road transport facility, building, place or premises, it became even more difficult for the e-hailing (Bolt) drivers would go for days without making anything, which was like a downfall (Aloi *et al.*, 2020). This affected Bolt drivers negatively, especially when only a few rides were requested and many people were staying at home, leaving the drivers finding it hard to take care of their families. It also impacted the lives of participants and their families, particularly Bolt drivers.

As the E-hailing services rapidly expanded and travel restrictions relaxed, the situation changed and became difficult because of competition in the industry. The customers, such as nurses, policemen, security personnel, and cashiers, would no longer book for the whole month. One had to work double shifts to make extra cash (Daniels & Turcic, 2023). On the other hand, women drivers had to worry about safety since there are lots of cases taking place where women get

trafficked, raped, or even murdered. Indeed, e-hailing transport services need a lot of improvements for the industry to thrive, especially in terms of safety. The participants indicated how restrictions on travel affected them during the COVID-19 pandemic below:

Participant A

“I am a family woman with numerous responsibilities. I am the breadwinner in my home, and it is kind of challenging. I was working in a certain firm, and life was good for me and my family. Things changed when I lost the job because of COVID-19, since the firm was not generating profit and thus had to close. I then saw an opportunity to register myself in Bolt so that I could continue supporting my family. It was not easy to make money because a lot of people were restricted from traveling. During the easing of the lockdown, people started to rely more on Bolt for travelling because it could transport a few passengers. Things got a little better since I could manage to make at least R5000 in two weeks. As the e-hailing services rapidly expanded, the situation changed and became difficult because I could barely make R1000 in two weeks because of having few customers. Sometimes I could go a day without transporting any customers, and this put me under a lot of stress. I can say that COVID-19 gave me a hard time”.

Participant G

“I joined Bolt a year before COVID-19 took over our country. The other reason was unable to get employment after finishing my matric. I saw an e-hailing transport service as an opportunity for me to make money and take care of my needs. I did not hesitate to go for Bolt since it was one of the greatest options I had before and during the pandemic. I can say the main hardship was when travelling was banned, and everything started to get tough. I remember spending the whole week without finding any customers. I barely made more than a thousand rands, and that made me feel like I was losing out. After the restrictions were eased, things became better because people could move from one place to another, but nothing has been easy. Even currently, there are a lot of challenges”.

Participant H

“When I decided to join Bolt, the situation in my family was really difficult. Most importantly, I have a wife and two children who look up to me. I would make money that would help my family get along as well as be able to take care of the car expenses. During the pandemic, although there were restrictions on travelling, I used to transport nurses, police officers, security personnel, and people working at banks, food stores, and radio stations. They would book me for the whole month consecutively, and I would be making money. Passengers book me specifically to transport them to their workplaces. With that, I am now an entrepreneur of my own with an extra two cars aside from Bolt. I opened my own transport business and managed to hire three young people. My dream is to accumulate more cars so that my business can flourish and become a success, and most importantly, hire more unemployed youth drivers. COVID-19 opened my eyes to more and more business ideas”.

The above response from participants shows that restrictions on travel by customers negatively impacted drivers' work environments by limiting their income opportunities and increasing stress (Daniels & Turcic, 2023). This is because fewer customers mean less work, potentially leading to longer periods of waiting for fares and decreased earnings. Additionally, drivers may experience higher levels as they try to maintain a stable income in a less active market. This answers the objective of exploring the influence of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period. Furthermore, the lack of customers in e-hailing services can be attributed to several factors, including market saturation, pricing, driver availability, service quality, and customer preferences (Türker & Tanyeri, 2022). These factors can impact the overall demand for e-hailing services, especially in regions with strong competition from traditional taxi services or other transportation options. A lack of customers in e-hailing services is a complex issue with multiple contributing factors. To address this, e-hailing companies need to focus on competitive pricing, improve service quality, ensure driver availability, and adapt to evolving technological and regulatory environments. As supported by the literature review, while e-hailing services in South Africa are generally growing, some areas and factors can lead to a perceived lack of customers for individual drivers or specific platforms (Türker & Tanyeri, 2022). These include factors like competition, pricing, safety concerns, and the overall affordability of using these services in comparison to other transportation options

From the oral transcript above, ride requests are the concern for most Bolt drivers, who face stiff competition to make enough profit. COVID-19 made things worse when restrictions on travel were imposed to help fight the virus (Aloi *et al.*, 2020). It affected Bolt drivers when only a few rides were requested because many people were staying at home, leaving the drivers to find it hard to take care of their families. Many drivers did not have any choice but to remain as Bolt drivers even during difficult times. Restrictions on movement left many households with no food in their homes as a result of the loss of jobs for many. According to Gan *et al.* (2021), many drivers became independent, and life was difficult, especially in making ends meet. Those with backups were better off because they had people who looked up to them. Unlike some, who had to settle for less because they had no employment or people to take care of them. Brough *et al.* (2021) have shown that COVID-19 affected the E-hailing transportation industry negatively since most of the drivers suffered a lot psychologically, financially, and physically. Although some managed to pull through and came up with ideas to make money, not many succeeded.

4.3.2. Theme: Factors that influence or limit the participation of youth entrepreneurs in E-hailing (Bolt) transport services post-COVID-19

Lack of safety

Thohoyandou is one of the town in which e-hailing (Bolt) services operates. Some drivers find their lives being threatened in different ways including committing suicide, getting themselves into debt, being robbed of their items, raped, bullied and even worse fearing for their lives while on duty because they might get killed. Females in particular are the ones targeted mostly since they are seen as weak and not suited to be in the industry (Alonso-González *et al.*, 2020). Some youth went to the extent of wanting to quit working for Bolt and go look for employment elsewhere because they did not feel safe. Although it might not have been easy to find employment out there, for the sake of safety, others felt the importance of trying out their luck rather than working in fear. The oral transcripts of the question were as follows:

Participant B

“I am a woman, and I always feel uncomfortable when I get requests from male customers. With Bolt, there is no protection guaranteed for a driver. We deal with strangers every day and every time. Some of them are bullies and also behave strangely. I came across a certain customer who threatened to rape me just because I am a woman driver. As I went closer to one of the nearest filling stations, I got out of the car and asked for help from the people around. Out of the blue, the man was long gone, and I just took my car and drove back. This situation has made me feel traumatized. I fear that one day I will be raped or even worse, get killed. I don’t want to leave my beautiful children all alone on this earth. I am just holding in there by the mercy of God because employment is difficult to get”.

Participant J

“Working as a bolt driver is a risk in itself. We ride with different customers, some are violent and abusive. One of the customers once threatened me with a knife, asking for my car. I do not know what happened, but I saw myself closer to death. The man said he was joking, and only God knows why he changed his mind. I did not even take his money and also did not look back in his direction after dropping him off. I am still traumatized by the event. At the same time, the Bolt does not care about our safety as drivers, and even today, nothing is being done. It goes by the saying, “One man for himself, God for us all”. I am prepared to quit anytime because I don’t want to risk my life for nothing”.

Participant K

“Since my friend committed suicide because of Bolt, I have never found rest. I am remaining as a Bolt driver, not by choice but due to the lack of employment out there. My friend has too many debts, including covering his car expenses. He ended up asking for loans just to patch here and there, but the debts increased to a point where it was too much for him. Everyone started to demand their money back, and my friend thought it was best to commit suicide. It was as if he was joking, but surprisingly, it became a reality. Since then, I have been terrified that I did not know where to run. I am still looking for a job where I can at least work in peace without any troubles like the one in the Bolt service”.

The above response confirms that both male and female bolt drivers face safety concerns, though women drivers may experience heightened risks (Gan *et al.*, 2021). Bolt has implemented safety

features like Perspex screens and emergency assistance, but incidents of violence, robbery, and even murder, highlighting the inherent dangers of the job and attacks on drivers continue to be reported. Women drivers often face additional risks, such as sexual harassment, unwanted advances, and potentially more dangerous situations during late-night or isolated rides.

Unfair pricing

The study indicated that unfair pricing puts a lot of pressure on the e-hailing (Bolt) because drivers are unable to make enough money to provide for themselves and their families. Some of the participants indicated that they take care of their expenses with their pocket money, which indeed puts a lot of financial pressure on them. Drivers lamented about picking up customers from distant places with lower prices (Puriwat & Triposakul, 2021). Even worse is that they carried more than one individual with the same price, either far or near. This on its own became a barrier that stifled profit, if not limited the participation of bolt drivers in the e-hailing industry. This requires the bolt company to intervene and provide fares that are reasonable and take care of the expenses from the drivers because, at the end of the day, the drivers are working for them. Below are the responses from participants:

Participant C

“The Bolt company does not support us as drivers. By this, I am referring to safety and not taking care of our car bills. The fact that I have to put petrol in my car using my cash hinders me a lot. I sometimes struggle with some parts of my car that need to be serviced, but where will I get the money? It is like I always take out my own money and still get nothing out of it. All this gets to me like I am not working because it does not seem so. I mean, what kind of a job makes no difference in your life? I mean, I would get it if I were getting peanuts, but as compared to that, peanuts are better than what I am getting from Bolt. As I am speaking right now, I have a feeling that I am going to quit and try to look for a better opportunity out there”.

Participant D

“I don't feel like I have pressure on being a driver. I try to cover everything myself because my parents support me financially. I am always sorted. I just enjoy riding around like I will

do with my friends”. Additionally, before and during COVID-19, we were used to certain behaviour that was not good. Bolt has humbled us because of that. We even risk and take advantage of the customers and charge them according to the distances they use to transport them. For instance, if a customer requests a ride from Thohoyandou and finds that the App costs R23, we would ask for R40 or more. On top of that, we would give the customers bad attitudes so that they can be threatened and feel scared to accept the price offered. Although that is the case, some drivers would take it very far and on top of that offer poor services”.

“Now, during post-COVID-19, there are new developments in which a driver depends on the rates from the customer to be safe. Another interesting thing is that we follow whatever price appears on the App, we are taught to be humble to our customers to offer the best customer service since our good ratings come from the way we treat our customers”.

Participant F

“Right now as I am talking to you, I am about to quit as a bolt driver because I found myself what I call “permanent employment” somewhere. Even if it is not much at least I will be valued and acknowledged. It is very difficult for me to be referred to as “friend’ than an employee. On top of that, not being registered adds to and also worsens the situation. I already have a hard time paying for petrol every week, not to mention car service and related. It's time I start to hustle somewhere because I am independent. I have many plans that I feel are delayed by Bolt since nothing adds up”.

Based on the response above, e-hailing drivers, including those using the Bolt platform, have repeatedly voiced concerns about unfair treatment, exploitation, and lack of regulation by the e-hailing industry in South Africa. Drivers are protesting the high fees charged by Bolt, the low pay they receive, and the lack of protection from violence and intimidation from other drivers. Some drivers also argue that they are treated as independent contractors but lack the benefits and protections afforded to employees. Bolt drivers may experience unfair treatment due to their classification as independent contractors rather than employees, leading to limited legal protections and benefits. This can result in issues like a lack of access to unemployment benefits, limited control over work hours, and potential for unfair dismissal. Additionally, high commission

fees charged by Bolt, safety concerns, and the lack of a structured system for addressing client complaints can contribute to unfair treatment.

Not registered as permanent employees

Bolt drivers aspire to become permanent employees of the Bolt company. Just like any other normal company, there is a need for Bolt needs to register its drivers to encourage inclusion and acknowledgement (Kolyangha, 2020) by rival industries. Taking advantage of drivers makes it look like the company is using them to make the business thrive, while on the other hand, it does not care for them.

Participant C

“Anyone who goes to work as a Bolt driver thinks that they will officially become employees, but the truth is, we are not regarded as employees. Maybe we are their assistants who help them make money. We need Bolt to register us as permanent employees so that we can be formal and happy. Bolt must not sideline us and treat us like pons”.

Participant G

“The fact that we are not considered permanent employees in the Bolt company makes me want to quit because I do not want to suffer even more. This matter is draining me physically and emotionally. I have a family to take care of, and I cannot remain in a company where I am not viewed as a human. I depend on some odd jobs already, and it feels better. Even if I decide to start my own business in the transportation industry, I can’t because I have no money for a startup”.

It is evident in the findings that classifying e-hailing drivers as independent contractors rather than permanent employees raises significant concerns regarding their rights and benefits. This arrangement often leads to drivers lacking access to unemployment insurance, skills development funds, and other protections afforded to employees (Alonso-González *et al.*, 2020). This is supported by the participant’s response above. Additionally, it can hinder their ability to organise and negotiate for better working conditions, potentially leading to unfair labour practices.

Unfair treatment

Unfair treatment in e-hailing services bolt in particular, can manifest in several ways, including surge pricing during peak hours, potentially insufficient earnings for drivers, and issues with dynamic pricing that may lead to higher-than-expected fares for passengers. The drivers say the e-hailing companies that employ them do not take heed of their grievances, and they are calling on the government to regulate the industry (Jenn, 2020). The drivers are also demanding improved pricing and payments in light of the increased price of petrol, improved security measures for both the driver and the passenger, and an end to “exploitation by the companies”. Drivers also demand to be part of the decisions taken, and also be a part of that process because they are referred to as partners. E-hailing drivers, including those using the Bolt platform, have repeatedly voiced concerns about unfair treatment, exploitation, and lack of regulation by the e-hailing industry in South Africa.

Drivers are protesting the high fees charged by Bolt, the low pay they receive, and the lack of protection from violence and intimidation from other drivers. Some drivers also argue that they are treated as independent contractors but lack the benefits and protections afforded to employees. Bolt drivers may experience unfair treatment due to their classification as independent contractors rather than employees, leading to limited legal protections and benefits (Alonso-González *et al.*, 2020). This can result in issues like a lack of access to unemployment benefits, limited control over work hours, and potential for unfair dismissal. Additionally, high commission fees charged by Bolt, safety concerns, and the lack of a structured system for addressing client complaints can contribute to unfair treatment. One participant responded as follows:

Participant H

“There is unfair treatment of drivers by Bolt. Almost 2 to 3 people can request a ride, but only one person will pay. Meaning that if the trip costs R25, only one person will pay the amount. To show the situation, Bolt must change their rule that everyone should pay individually. With that, I can say Bolt is ignorant. Mind you, we pick these people up from their homes and take them to where they want to go. Our cars and the issue of petrol are 100% involved fully especially when riding three people. All this gets to me negatively, that even when we reach out to the company, we are ignored. I cannot stay here for a long time.”

As soon as I get another job somewhere, I am leaving without looking back. Transportation policies are not advocating for us, and we are sinking deeply into these issues”.

Based on the response above, e-hailing drivers, including those using the Bolt platform, have repeatedly voiced concerns about unfair treatment, exploitation, and lack of regulation by the e-hailing industry in South Africa. Drivers are protesting the high fees charged by Bolt, the low pay they receive, and the lack of protection from violence and intimidation from other drivers. Some drivers also argue that they are treated as independent contractors but lack the benefits and protections afforded to employees (Jenn, 2020). Bolt drivers may experience unfair treatment due to their classification as independent contractors rather than employees, leading to limited legal protections and benefits. This can result in issues like a lack of access to unemployment benefits, limited control over work hours, and potential for unfair dismissal. Additionally, high commission fees charged by Bolt, safety concerns, and the lack of a structured system for addressing client complaints can contribute to unfair treatment.

4.3.3. Theme: Challenges encountered by youth entrepreneurs in E-hailing transport services during the post-COVID period

Not having permits

Challenges encountered by youth entrepreneurs in the e-hailing services are influenced by the ongoing situations that individuals go through every time (Roa *et al.*, 2020). Individuals were unable to work freely and comfortably because they were troubled by law enforcement officers and taxi associations from public transport every time they tried to work. They were even restricted from going to the malls and complexes to get customers because they were said to evade their working environments. These challenges indeed became a thorn that discouraged drivers from actively working in their day-to-day lives. The oral transcripts from the participants were as follows:

Participant A

“My challenge is with the law enforcement officers. Every time I come across them on the road, they demand money from me at their own will, and if I don’t give them, they accuse me of different offences which I don’t know of. This happens almost every time, and it affects me emotionally and psychologically. Sometimes it gets to me that I cry alone. Most of the

time, I use my pocket money to give to the officers. After that, I get so broke that I cannot even buy food for myself”.

Participant B

“My challenge is on the side of customers. Some passengers are so rude and ill-mannered to the point where they are abusive and aggressive. Several times when I was transporting some, I met a male customer who insulted me, telling me that I was not fit to be a driver because I am a woman. As I kept quiet throughout the trip to show no interest in what he was saying, he threatened to hijack me. I got really scared because of his threats. I then prayed that none of what he was saying should happen. It was the most traumatic trip of my life, and I have hardly forgotten about it. Some of them are women who would say that I don’t fit to be a driver. It is really difficult for me”.

Participant C

“It is really hard to work for Bolt because we are not taken seriously. I think we are falling for it because we have no other means of employment, and things get even harder. There is a lot of tension and trauma, while at the same time, we are emotionally cracking. We do not have permits even now, and that makes the taxi drivers assault us or demand money worth R1500, and we have no choice but to pop out, or else there will be no business. We end up using our pocket money and end up with no cents. It is as if we, as Bolt drivers, are being punished since we have no one who advocates for us, especially on the side of Bolt. If by any chance I get a job somewhere, I will leave with peace.”

The above response from participants A, B, and C shows that not having permits for Bolt drivers became a nightmare since drivers were not able to work freely and comfortably. The Bolt company needs to provide permits to the drivers so that they can reach various places to pick up customers without being pressured to take out money illegally by taxi associations and law enforcement officers. Customers can be picked up at any place of their choice, and having permits would make it easy to work well (Wilmoth, 2020). This issue needs to be balanced so that both e-hailing and public transport have equal chances and opportunities.

Not making enough money

Not making enough money, even though bolt drivers work hard daily, and the company does not take their employees seriously. Even going through debt and working with borrowed cars forces them to quit their jobs in the end. Other individuals took their own lives because of being in huge debts that they were unable to pay at the end (Nelson, 2020). Indeed, borrowing money that one does not have can strongly contribute to drivers' financial struggles, especially when there is no positive intervention from the company. The drivers are also affected financially, emotionally, and physically without support. Some of the participants responses were as follows:

Participant D

“Firstly, the car I am driving is not mine because I hired it so that I can work with it. I pay an amount of R1500 every Friday. Not every one of us at Bolt owns a car. Most of us hired the cars we are using to transport our customers. It is difficult for me because I don’t even make such an amount of money in a month, so it is hard for me. You know, as we speak now, I am in a huge debt which keeps getting me into deep trouble. I think my days are numbered because this whole matter cost me my health, as I have heart problems. I am sinking so deep”.

Participant E

“My biggest cry is having no rest, or I can say working abnormally, so just like a normal job. I am a person with health issues, and sometimes I will need to rest so that I can take my medications and relax. Even when I get some little time to do so, I sacrifice for the sake of making money because if I don’t work, I don’t get paid. And here, no one cares about your health. Sometimes I force myself to work day and night so that I can have something at the end of the day. I do it most of the time, and I even get so tired that I can’t do anything anymore. I once lost control and almost hit a tree one day, and it was the most traumatic day of my life. Life is really hard in here that one may even fall and die because of working unconditionally”.

Participant G

“I have a concern about low pay. The money we are getting cannot accommodate my needs or take care of my children. It even feels like I am doing nothing since I don’t see any progress. Two months ago, I went to take a loan so that I could at least pay for my children’s food and transport for school. I try by all means to work double shifts, but the number of ride requests from customers is few, and sometimes I get no requests at all. I feel like a failure and cannot face my wife and children, but I try to push and be strong. I even got myself into debt because I could not leave my family to suffer. I don’t know who to cry to, and this makes me feel like I am failing in life”.

Participant H

“I hardly afford my car expenses. Some of my car parts have problems and get damaged, so I don’t have the money to fix them or service the car. As an e-hailing driver, I have to go fetch customers from the places they will be, and most of the areas have bad roads that can damage a car. This is the reason why my car is suffering today, and I have no means to take care of it. Some roads have potholes, and some have gravel. Our cars get easily damaged in these kinds of environments. I feel financial pressure and believe that Bolt is responsible for taking care of our car expenses because we are always driving”.

Based on the response from the participants, the majority of bolt e-hailing drivers in South Africa struggle to make a living due to low fares, high petrol costs, and other factors. Some drivers report that their income is not sufficient to cover expenses and maintain their vehicles (Zeng *et al.*, 2022). With excessive petrol prices and stubbornly low trip fares, many South African ride-sharing drivers say that instead of independent, flexible entrepreneurs, they feel like they are treated as underpaid employees without benefits and with little space for negotiation.

No feedback from Bolt Company

Individual drivers are concerned about not getting a response to the challenges they encounter while working for Bolt E-hailing services. This puts the lives of both drivers and customers in danger and leads other drivers to quit the service (Wilmoth, 2020). Individuals experience death-related threats and report the case to the police and the E-hailing service, but do not get support. It is in the best interest of a company to ensure that its employees' challenges are attended to and that their plight is taken seriously for the business to thrive. Although some drivers want to pull out, they are unable to do so because there is high unemployment. This implies that they are forced to work as Bolt drivers even though the conditions are worse and life-threatening. One of the participants' responses was as follows:

Participant K

“I have a problem with exploitation (lack of responsiveness). We are going through many problems that need to be addressed urgently. We tried to send our cries through emails, calls, and many other ways. We even tried to mobilize, but nothing worked. There are also empty promises and threats that we will be blocked. We are tired and have no means again, and things are worsening to the point that we take care of whatever we come across, which most of the time threatens our safety, psychological, and financial levels. Even today, nothing has been done. According to my understanding, I think most drivers are still here because there is low employment out there, and that includes me. I feel hopeless. You know, it is good to have someone to take care of you, especially a company. A company must protect and take care of its employees, but with Bolt, it is unfortunate”.

The above participant reveals that e-hailing drivers are dissatisfied with Bolt's lack of communication or responsiveness regarding their concerns. This could be a broader issue related to driver grievances, including low pay, high commission fees, and potential unfair platform practices. Drivers are likely seeking clarification, support, or a voice in platform changes, and Bolt's silence could be seen as a lack of engagement with their concerns (Wang, 2019). E-hailing drivers are likely seeking feedback, updates, or explanations regarding issues they are facing, such as commission rates, ride cancellations, or platform changes. The absence of a clear response from Bolt can be frustrating and also create a sense of being unheard.

4.3.4. Theme: Supporting measures to mitigate challenges encountered by Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period

Government intervention

Government intervention in the e-hailing industry is often needed to ensure fair competition, protect consumers and drivers, and address potential safety issues. This can involve regulating pricing, formalising employment status, and implementing safety measures. The government intervention could level the industry playing field and also limit the everyday struggles that Bolt drivers go through with competing industries, for instance, taxi associations from public transport and law enforcement officers are hell-bent on seeing the e-hailing industry not take a meaningful role in the sector. Individual drivers see a need for various stakeholders to intervene to save many youth entrepreneurs in the e-hailing transportation industry. The oral transcripts of the question were as follows:

Participant E

“The government must come and intervene with policies that will protect and allow Bolt drivers to work freely without being threatened and harassed by some taxi associations that render E-hailing service uncomfortable and terrifying. We are human and young people who are trying to make a living in the transport sector”.

Participant K

“We plead with the government to provide us with funding so that we can create, improve, and start our businesses in the transportation industry. Some of us have greater ideas that we can use to explore the transportation industry. We can also hire other youths who are unemployed. For example, my friend and I came up with the door-to-door idea to recruit people who, should they need transport urgently they must contact us. Now people are

calling us, but the problem is that we only have one car, and we cannot accommodate others at the same time. This is why we need support financially from the government”.

The above extracts show that by regulating e-hailing services, governments can help ensure that passengers are transported safely and that the industry operates in a responsible manner. It can also help create clear and consistent regulations for the e-hailing industry, ensuring that all operators are held to the same standards. It is indeed important for the government, through the Department of Police and Traffic, to intervene to solve various challenges encountered by e-hailing transport services. Every worker’s rights need to be protected and made clear, and push Bolt as a company to quickly look at the matters that give drivers sleepless nights. In this way, everyone will be able to work freely and peacefully (Nelson, 2020). Even if other issues arise afterwards, there will always be interventions to eradicate such.

Competition with other public transport

Taxi associations for public transportation restrict e-hailing drivers from taking customers to the malls and building complexes. Consequently, Bolt drivers found it difficult to make money because of barriers imposed by the public transport industry's unwillingness to work with them. This unfair practice stifled E-hailing services (Bolt) in particular from reaching customers to and from their desired places (Brough *et al.*, 2021). The majority of customers travel to malls and complexes almost every day, and that is where they are targeted. It is also important for Bolt drivers to reach customers at such places, just like taxi associations, to accumulate profit. Should there be an open space for the transport industry where E-hailing and public transport services have equal rights, there will be fair competition amongst different modes of transport. One of the participants highlighted the following:

Participant B

“We are struggling because of being harassed by taxi drivers who always demand money from us as Bolt drivers. We need permits that will allow us to work freely and travel everywhere we want. As I speak now, we are not allowed to go to certain places because we have no permits. As long as we do not have permits, taxi drivers are still going to give us problems”.

In essence, the competition between e-hailing and traditional public transport is a dynamic process. Both modes are evolving and adapting to changing customer preferences and technological advancements. E-hailing and public transport are both valuable options for urban transportation, with their own strengths and weaknesses. Public transport remains a crucial component of urban infrastructure, offering affordability and environmental benefits, while e-hailing provides convenience and personalisation. The competition between these two modes of transport highlights the need for a balanced approach to transportation planning, considering the diverse needs and preferences of urban residents.

4.4 Summary

This chapter presented and analysed the data on Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of South Africa and the contributory factors to their vulnerability. These include safety challenges, low income, not making money, not being registered as permanent employees, low commission, unfair pricing, unfair treatment, and lack of communication from the Bolt company. E-hailing drivers, Bolt in particular, go through some challenges that are sometimes life-threatening, which makes it hard for them to work freely. When reporting the challenges to the company, they do not get an immediate response, and this could only mean they have to live with their problems for a long time. It is difficult to think of quitting or to explore other opportunities in other industries. The challenge of job hunting ends up leaving them with no choice but to remain with Bolt as drivers, even though it is not safe. It is even sadder to hear drivers end up taking their lives because of the financial struggles, while others are affected socially, psychologically, and physically. E-hailing work environment allows workers to operate individually under stressful circumstances.

CHAPTER 5: DISCUSSION OF THE FINDINGS, CONCLUSION AND RECOMMENDATION

5.1. Introduction

The chapter discussed the study's findings and recommendations about what should be done to overcome Youth Entrepreneurship and Gender Dimensions in the E-hailing (Bolt) transport industry. The chapter is divided into the following categories:

5.2. Overview of the study

The study dwelt on the highly gendered E-hailing industry, where women drivers are still experiencing marginalization as driving is still regarded as a male domain. This kind of marginalization is echoed well by Connell (2020), who ascribes this to what he calls Hegemonic masculinities. The theory of hegemonic masculinity indicates that in a workplace with a history of male dominance, such as the transport industry, a masculine culture is deeply embedded within the industry's functioning and manifested in practices that reward traditional forms of masculinity and disallow traditional forms of femininity. On the other hand, Turnbull (2013) indicates that women who enter the transport industry are confronted with this culture, and their very presence challenges the embodied norm of a male body. Thus, as studies alludes that transport industry constitutes a large portion of men's lives especially in contexts like United states, Japan as well as South Africa, where women's labour involvement in the industry is significantly lower than men's it expectedly provides a unique venue for daily doings and accomplishments of masculinity (Sattari, 2021).

5.3. Discussion of the findings

5.3.0. Participation of women in the E-Hailing industry

Norberg and Johansson (2021), in agreeing with the sentiments of the participants, indicate that in workplace with a history of male dominance, such as the E-hailing industry, a masculine culture is deeply embedded within this industry's functioning and is also manifested in practices that reward traditional forms of masculinity and disallow traditional forms of femininity. In the same vein, Turnbull (2013) indicates that women who enter the transport industry are confronted with this culture, and their very presence challenges the embodied norm of a male body. The literature explored indicates that the transport industry constitutes a large portion of men's lives, especially in contexts like the United States, Japan, and South Africa, where women's labour involvement in the industry is significantly lower than that of men.

5.3.1. Objective 2:

Restrictions on travel, few rides (inability to get customers)

As far as COVID-19's influence on youth entrepreneurs in the E-hailing transport services (Bolt) is concerned, the first objective explored how youth entrepreneurship in the E-hailing transportation industry during and post-COVID period was affected. The issue of travel restrictions has made it difficult for Bolt drivers to work and earn money to support their families (Brough *et al.*, 2021). The findings revealed that the inability of people to travel due to government regulations to fight against the coronavirus made it difficult for Bolt drivers to generate income. Many youths saw an opportunity to generate income during the hard lockdown of the pandemic by joining Bolt as drivers. Gan *et al.* (2021) confirmed this by indicating that many people lost jobs and joined Bolt and operated as independent contractors. This transformed how people and goods moved across cities and towns by creating a platform that offers flexible earning opportunities for drivers while providing convenient, reliable mobility for riders. Despite joining Bolt's transportation service, things were not as smooth and easy as everyone thought. The struggle continued when finding potential customers was not easy. People were only allowed to travel short distances to places like food stores, health, and government offices (Rangel *et al.*, 2022). This made the transportation industry, especially Bolt drivers, experience difficulty in generating income.

Following the findings on the first objective, getting riders was the challenge. The other barrier for the drivers to make money was the number of drivers on the Bolt platform (Saeidizand *et al.*, 2021). Every driver felt stuck in an unfair system that had them working harder but earning less. They had to pay instalments on the vehicles whilst work elsewhere was difficult to find. The drivers would end up not having customers for a few days or face the distressing reality of the removal of passengers from vehicles by mainline taxi operators. Most of the drivers wait for customers at shopping malls, stations, and complexes, outside schools, and church premises. Others are forced to reach customers from far distances to gain certain amounts (Gan *et al.*, 2021). The study also revealed that drivers offer prices that are a little cheaper than those that appear on the App, to get more customers and make enough money. Some drivers even search for small jobs aside from being Bolt drivers to sustain themselves financially (Rangel *et al.*, 2022). On the other side, some drivers end up quitting since nothing good seems to come out of being a Bolt driver. Despite all

the challenges, Bolt, with its easy ride requests and real-time tracking, brought competition, leading to improved transportation services.

5.3.2. Objective 3:

Lack of safety, unfair pricing

Bolt provided formidable competition to mainline taxis and presented consumers with a choice for affordable and reliable transportation. Bolt offers diversified services such as food and package deliveries. The violence between traditional mainline taxi operators and ride-hailing service Bolt has created a troubling transportation landscape. The regulatory uncertainties, violent actions, and coercive measures by mainline taxi operators affected the industry and customer rights. The growth of the Bolt platform exposed the ineffectiveness of the regulatory framework, resulting in conflict between Bolt and mainline taxi operators. The Bolt drivers are subjected to violent clashes, vehicle impoundment, and assault on drivers. Female Bolt drivers and passengers got harassed, abused, raped, and robbed on their duty lines (Gan *et al.*, 2021) threatening the safety and dignity of customers. The alarming levels of violence erode the constitutional rights of customers, such as dignity, respect, and protection from degrading treatment. The mainline taxi operators have escalated their violence by burning Bolt cars as well as assaulting drivers and forcibly removing passengers from the vehicles. Safety is one of the important aspects that should be taken as a priority by employers in companies or organizations. Many Bolt drivers feel like their lives are in danger, especially when the possibility of losing their lives and possessions is very high. Much is needed by the Bolt company to ensure that safety is guaranteed and brought to the drivers so that they can work freely without threats (Zhang *et al.*, 2020).

As revealed by the objective outcomes, Bolt emphasizes affordability and efficient services that cater to a broad customer base. It allows passengers and drivers to negotiate fares and trip conditions directly. The challenge is the absence of a functional industry that can operate as provided by the government through a regulatory framework. The problem is that there is nothing on paper that says the E-hailing platform is legal to ensure a safe operation environment. It can be confirmed that Bolt drivers are being taken advantage of by the company. It seems like the e-hailing company just wants to accumulate money by using drivers (Gomez *et al.*, 2021). Drivers

do not feel like they belong in the Bolt company because it is as if they are just hustling. The study also showed that drivers are working for Bolt, but not as employees of Bolt. This is very confusing because it stands against the rights of workers in the country. Most drivers are suffering, while others decide to quit because they feel like they are treated like fools (Wang & Noland, 2021). The most painful part is that drivers try hard to report the matter to the company but it is difficult for them to get updates. Even if that is the case, there seems to be no light at the end of the tunnel since everyone works according to their will, and it is not easy to get employment (Hossain, 2020).

The issue of unfair pricing, as revealed in the study, also adds to the major concern. Based on the findings, Bolt drivers find it hard to transport customers with small fares (Jenelius & Cebecauer, 2020). Some drivers confirmed that they go to far places just for a couple of rands, which has consequences. In other words, a group of two to three customers ask for a ride and pay a single price, which is unfair in the eyes of the drivers (Hossain, 2020). This always backfires on the drivers because of the expensive petrol, coupled with the consequences of car servicing, and worse, getting into debt. Due to unfair pricing from the Bolt company, some drivers decided to charge prices according to the distances and number of customers. Although that is the case, it is never enough that customers no longer request rides but rather opt for taxis and buses, which are more affordable (Keni *et al.*, 2020). This, in turn, leads to the drivers losing customers and finding it hard to make money. Few of the rides, because of having no choice, stick to the original price for bolt, while others decide to stick to their pricing.

Based on the findings of the study, drivers are not paid without working (Jenelius & Cebecauer, 2020). This means that without a driver transporting customers, there will not be any income. In other words, drivers have to make a certain amount of money and transfer 75 percent to Bolt, and this should be done monthly. This proves that being a Bolt driver does not make one feel like they are working a proper job (Keni *et al.*, 2020). Many Bolt drivers get into debt to settle for petrol, car servicing and their personal needs. Because of loans, some pay about R2000 a week to vehicle owners whilst carrying the burden of sky-high petrol prices and getting deeper into debt, which is difficult to overcome (Puriwat & Tripopsakul, 2021). Thus, the issue of not getting enough income is a major challenge to the Bolt drivers, especially when it threatens and affects their lives.

5.3.3. Objective 3:

Not having permits, not having enough money, ignorance, or not being provided with feedback from the Bolt company

Bolt drivers are not issued permits that allow them to work freely (Kolyangha, 2020). The drivers operate as independent contractors. On the other hand, drivers feel like they are employees who deserve benefits. One is stuck in the system where he has to pay instalments for the vehicle, petrol, and the rental of the car. Officers and the taxi associations demand a certain amount of money from the Bolt drivers, targeting them on the roads and threatening them. The law enforcement officers take advantage of Bolt drivers who have no permits (Nelson, 2020). According to the participants, it is hard to work freely and comfortably because they are always threatened. Many use their own pockets of money to bribe law officers to avoid arrests that are brought up by the officers (Gan *et al.*, 2021). It gets really hard and challenging for them because of the harassment they get daily, because of not holding permits. Some of the drivers who sometimes do not offer money to mainline taxis get beaten, raped and verbally abused. According to Puriwat and Tripopsakul (2021), all these challenges prove that Bolt drivers do not understand how to operate as independent contractors.

Ignorance or not being responded to and being treated like underpaid employees without benefits, with little space for negotiation, seems to be the other main force for all the hardships (Phun *et al.*, 2020). The Bolt company underestimates the rights of its employees since they do not attend to any problems affecting the drivers. Drivers tried to send all forms of communication such as emails, messages and calls but no one came to their rescue. Some even tried to mobilise for their concerns to be heard and attended to, but even in that case, nothing has been done up to now (Gan *et al.*, 2021). The hardships are getting worse every day, and still, no response.

There is an issue of the bolt allowing more than two people to ride for a single price, which affects numerous drivers (Phun *et al.*, 2020). The problem highlighted was the issue of petrol, car conditions, and the kinds of routes they pick up customers from. Another one would be long distances where coming to the ride fare does not sit well with the drivers. This was one of the issues reported before, during, and even now post-COVID (Puriwat & Tripopsakul, 2021). When there is a ride request from the app, drivers look at the distance and the price and then decide whether to take the trip or not. If they find that the distance is long but the fare is low, they do not

accept the ride. This also affects the customers because they wait for a long time without any driver accepting the ride due to a small fare. Some take chances and accept the rides even though the money is small, rather than waiting for a reasonable price from another customer (Wilmoth, 2020).

5.3.4. Objective 4:

Government intervention, provision of permits, and registration as permanent employees

Bolt drivers think that the government must support them with funds to explore the e-hailing transportation industry and to create more jobs for young people as well. Drivers expect the Bolt company to issue permits to allow them to work freely during their line of duty. Bolt company is expected to take care of drivers' car expenses, such as petrol and car service, and also provide them with enough income so that they can take care of themselves without getting into debt (Wilmoth, 2020). In other words, the drivers have difficulties in terms of expenses, which in turn make it hard for them to put food on the table. The fact that Bolt drivers are expected to operate as independent contractors confuses the entrepreneurs. Another major concern that needs to be fixed urgently is safety. Bolt drivers want to feel safe in their working environments. The issues of fear, robberies, rapes, hijacking, murders and being robbed of money need to be attended to so that drivers can be safe (Chan & Yuen, 2020). Another major concern for Bolt drivers is to register employees as permanent workers. Bolt company needs to take care of its responsibilities and stop burdening drivers in the name of making money (Clark, 2020). The Bolt drivers want their situation to change, but the unemployment rate in South Africa dictates the fight for change in the industry is challenging.

5.4. New body knowledge of the study

A new body of knowledge explored makes the Bolt company and the drivers' aspirations seem to contradict in terms of the aims and objectives of entrepreneurship (Clark, 2020). In this way, it can be said that drivers were not ready to work in the company since they had their own aim, which was to make quick money as long as they were working for Bolt. By implication, many South Africans are not ready to be entrepreneurs but rather want to be hired workers. When their aspirations are not met, drivers say negative comments about Bolt which also mask the perspectives of customers too. It is assumed by a wide range of people that Bolt does not care about its customers and drivers (Mao *et al.*, 2019). Many people opted for public transportation,

such as travelling with mainline taxis and buses, because of this negative impact. This proves that there is much unknown in the Bolt company, which, if drivers knew, they would understand in the first place and be able to work hand in glove with the company. Indeed, there may have been various challenges that might have affected drivers during and post-pandemic, those that were life-threatening and bad. Currently, the issue of safety from different angles has been looked at and attended to by the Bolt company (Bolt, 2023).

When looking at the real matter now, the study can confirm that Bolt is a major company that operates in more than 23 cities in South Africa, as well as in 45 other countries internationally (Bolt, 2023). Its aim is not only on transportation but also on other aspects, such as supporting sustainable projects all over the world. The projects include the environmental footprint of mobility and neutralizing the carbon footprint. Since 2016, the company has been making new developments that aim at creating job opportunities for youth (Mlambo, 2023). For instance, Bolt creates internships for youth and women specifically, which encourages wide participation in the food industry and technology. In the study, many participants talked about safety, affordability and quality rides. Now, post-COVID, Bolt covered them for both customers and drivers. Another thing is that Bolt looks for customers and aims to provide good customer service for people of all classes, be they poor or rich (Naidoo, 2023). In Bolt, all people are equal, which can be referred to as a generous motive. It also shows that Bolt, as a huge company, does not focus on making money but on caring and providing opportunities to youth.

As a way to improve, Bolt always looks for better developments that will create new opportunities (Bolt, 2023). Bolt innovated an App that increased safety measures to ensure that customers are safe throughout their trips. There is also a new Audio trip in which both the driver and the customer can report the Audio to the customer support team (Naidoo, 2023). Although that is the case, Bolt has implemented partnership opportunities that focus on unlocking entrepreneurial opportunities that focus on unlocking entrepreneurial opportunities for young people and women specifically (Bolt, 2023). It can be said that Bolt is like a savior to youth and people as a whole since it provides a life full of choices and various opportunities. The main aim of Bolt is to benefit both the drivers and passengers, as shown by investing a lot in driver confidence and trust.

On the side of drivers, only 15 percent commission is paid on each trip, which is lower than the market average, allowing each driver to earn more money daily (Rangel *et al.*, 2022). On the other

hand, it is in Bolt's interest to make cheap transportation with the motto “less money paid on rides is equal to more money saved for bigger purposes (Mlambo, 2023). Bolt keeps making rapid progress on building the best way to move in cities and towns, bringing convenience, affordability, and reliability to millions of people around the world. Bolt is a growing part of the transportation ecosystem and holds the responsibility for being part of the resolution. Although drivers are complaining about their cars transporting 3 people with one price, Bolt is concentrating on fighting climate change (Bolt, 2023). This means that when passengers decide to ride with Bolt, they are also choosing to fight climate change, looking at one ride at a time, at no extra cost. Bolt is the largest technology company and is continuing to grow.

The study brought forward new developments and new gaps in knowledge between the company and the drivers about Bolt as a company, which in turn contradicts the participants' views and experiences (Rangel *et al.*, 2022). It can be said that many drivers in the Bolt company did not understand the motive and mission of Bolt. It feels like two different worlds between the drivers and the company itself. This is a problem because drivers get into risky ventures that end up putting their lives in danger and tarnishing Bolt's name (Hossain, 2020). The in-depth study revealed the company's plans since it started in 2013, and even now, as the study stands, there are further improvements implemented every time to bring even better service. Another thing is that Bolt, as a company, aims to serve both the drivers and the customers by making sure that the drivers get paid a satisfying salary, while at the same time providing affordable and safe rides to customers (Hossain, 2020). The company still has huge plans that also aim at bringing or creating employment to youth while at the same time creating better services for people.

5.5. Conclusion

There is more unknown than known when it comes to the Bolt company (Rangel *et al.*, 2022). The aims and objectives of Bolt as a company have a certain focus that seems to be affecting the drivers, no matter how structured they are. It seems as if such objectives were hidden, or rather not known to the drivers all along, because they were poorly affected. The majority of the troubles they encountered were beyond their control as drivers, and even if they tried to reach out, there were no effective resolutions. For example, lack of intervention from Bolt made things even harder for the drivers, making them strike, write emails, and make calls with no luck of response (Bolt, 2023).

This went to the extent of the drivers, even passengers, masking or viewing the bolt as negative. Bolt, as we speak now, may have made its progress regarding the challenges drivers have been going through, but the majority of people already know it as bad. People would rather opt for public transport than e-hailing transport, especially Bolt in particular, because of all the bad reviews and comments.

The study found that Bolt drivers were challenged by restrictions to travel, few rides, lack of safety, not being registered as permanent employees, unfair pricing, not enough income, not having permits, and ignorance. The Bolt drivers at least want government intervention, provision of permits, registration as permanent employees, and fair income. The study explored the influence of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, South Africa, and managed to develop a comprehensive strategy to minimise the challenges in the industry. The aim was achieved in the end because participants managed to share their experiences on how they were influenced by COVID-19 and as drivers, they should operate as independent contractors rather than hired workers.

5.6. Contribution of the study

Doctoral studies place emphasis on knowledge production or discovery and its application through research. This study on youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe has contributed to four types of scholarship as posited by Boyer (1990). These include the scholarship of discovery, scholarship of application, scholarship of integration, and scholarship of teaching. Below is a discussion of how the study has contributed to these types of scholarship.

8.4.1. Scholarship of discovery

The scholarship of discovery focuses on the generation of new knowledge through research, which is often considered “Blue-sky” research where the primary goal is to expand the boundaries of understanding in a particular field. It involves rigorous investigation, data collection, and analysis to produce original findings (Vegter, 2020). This study has contributed to knowledge production by contributing to evidence-based knowledge on Youth Entrepreneurship and Gender Dimensions in E-

hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Thohoyandou. The study also discovered some of the coping strategies used by Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, and the proposed strategies to deal with their challenges. The discovered knowledge enabled the researcher to develop a comprehensive strategy to minimise the vulnerability of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period.

8.4.2. Scholarship on integration

The scholarship of integration is about making new connections within and among different disciplines (Tessa, 2018). It emphasises the synthesis and synthesis of existing knowledge from different disciplines or fields. It involves connecting ideas, theories, and research findings to create a more comprehensive understanding of a topic (Sattari, 2021). This study has brought insight to the issues of youth entrepreneurship in the e-hailing (Bolt) transport services, and contributed to the scholarship of integration through making use of an integrated theoretical framework. For the purpose of this study, the technology model theories and the intersectionality theory from a gender discipline were used. These two theories were applied to explain and understand the vulnerability of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in Thohoyandou.

8.4.3. Scholarship of application

The scholarship of application focuses on applying knowledge to solve practical problems or address real-world needs. It involves using research findings to develop new technologies, policies, or practices that benefit society. It is also known as the scholarship of outreach and engagement (Weil, 2022). It involves the use of scholars' knowledge to address challenges through engaging with different stakeholders (Vegter, 2020). The study engaged with both male and female youth entrepreneurs in the e-hailing (Bolt) transport services and the e-hailing (Bolt) transport experts through semi-structured face-to-face interviews. In these engagements, the challenges and the contributory factors to the challenges of youth entrepreneurs in the e-hailing (Bolt) transport services were established, and the

strategies to minimise their vulnerability were highlighted. This study advocated the application of these strategies in order to minimise the challenges of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe.

8.4.4. Scholarship of practice

The scholarship of teaching involves the effective and engaging transmission of knowledge to students. It encompasses the art of curriculum design, instructional strategies, and student assessment. Effective teaching promotes student learning and critical thinking, helping them develop the skills and knowledge necessary to contribute to society. It has to do with allowing for information sharing and evaluation by others (World Economic Forum, 2021). The scholarship of practice or teaching gives a high form of understanding of the processes of knowledge on the challenges of youth entrepreneurship and gender dimensions in e-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe. The study also provided a bottom-up approach for the generation of data and a strategy to minimise the challenges of youth entrepreneurship in the e-hailing (Bolt) transport services. This was done through collecting and analysing the data through the use of thematic analysis to come up with themes. These themes were later presented and interpreted to determine the major findings of the study and develop a comprehensive e-hailing (Bolt) transport services strategy. From this bottom-up approach, other researchers may learn and implement it in their studies.

5.6. Limitation of the study

The study was limited to 11 participants, consisting of males and females who are Bolt drivers from different educational levels, marriage status, age, and gender. The study was qualitative, which provided an in-depth understanding of youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period, and the challenges they encounter in the industry.

5.7. Recommendations

5.7.1. To the Bolt company

- Need to provide permits so that the drivers can work freely without hindrance.
- The Bolt company needs to pay drivers enough salary so that they can have enough to take care of their families.
- The need to register drivers as permanent employees is needed so that drivers can have a feeling of belonging in their workplace.
- Bolt as a company needs to take care of car expenses such as petrol and car servicing.

5.7.2. To youth entrepreneurs

- Youth entrepreneurs must thoroughly research Bolt Company's aims and objectives before they can sign their contracts and work as drivers for the company.
- Youth entrepreneurs need to explore the E-hailing transportation industry to learn how the industry operates.

5.7.3. To the government

- The government should reinforce anti-discrimination laws to allow gender parity and equity in industries related to transportation.
- The government must show support by issuing funds to youth entrepreneurs in the e-hailing transportation industry to explore and create more jobs.
- The rights of workers also need to be emphasised in our country so that no company or any form of organisation takes advantage of its workers.
- Policy makers must engage with the South African E-hailing Association (SAEHA) to protect E-hailing services from operating officially.
- Transport regulations must be implemented to avoid conflicts between public transport and E-hailing transport services.

5.8. Recommendations for future research

Future research on Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services should focus on understanding the evolution relationship between technology, users, and regulations. Specifically, studies should explore the impact of AI and machine learning on driver behaviour and safety, the effectiveness of different regulatory frameworks, and the changing preferences and behaviours of e-hailing users, including those who are new to the service. These factors are crucial for the responsible and sustainable development of autonomous vehicles and the e-hailing industry. They will also ensure that AI systems are used ethically and safely, that regulations are adequate to address the challenges, and that user experiences are optimized for both drivers and passengers. By focusing on these areas, future research can contribute to a more comprehensive understanding of the complex relationship between e-hailing services, users, technology, and regulations, leading to more effective and equitable policies and practices.

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ANNEXURE A

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Topic: Youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Limpopo Province, South Africa.

My name is Karabo Suzan Mabina with student number (15015241). I am a PhD candidate in Youth in Development and Gender Studies student at the University of Venda under the Department of Youth in Development, Faculty of Humanities, Social Sciences and Education.

Dear Participant

You are invited to participate in my academic research study on the topic of youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Limpopo Province, South Africa. This study has been approved by my supervisors and the School's Higher Degree Committee. The purpose of the study is based on the following objectives: Establish the extent of women's participation and involvement within the E-hailing transport services in the Thohoyandou area in the Vhembe District; To explore the influence of Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, To determine the factors that may influence or limit the participation of youth entrepreneurs in the E-hailing (Bolt) transport services during the post-COVID period in Thohoyandou, To assess the challenges faced by youth entrepreneurs in E-hailing (Bolt) transport services during post-COVID in Thohoyandou and To determine measures that could mitigate challenges encountered by youth entrepreneurs in E-hailing (Bolt) transport services in Thohoyandou.

To ensure legal confidentiality, the following will be taken into consideration:

- Your names will not be revealed and will be kept confidential. Your names will be replaced by: participants 1, 2, 3, etc.
- Your participation is compulsory in the study, and it will also be of your free will to withdraw at any time of your choice
- You will be required to provide relevant information based on the questions asked, and if not so, I, as the researcher, will have to ask you to withdraw from participating
- The interview will take about an hour
- The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings upon request.
- Due to the COVID-19 pandemic, you will be required to wear a mask, apply social distancing and sanitize your hands.

Please sign the form to indicate that:

- You have read and understand the information provided above.
- You give your consent to participate in the study voluntarily.

.....

Participant's signature

.....

Date

Promoter: Dr MH Mukwevho

Co-promoter: Prof TD Thobejane

Yours sincerely, Mabina KS

Cell phone: 0649577859

Signature:



Date: 13 August 2024

ANNEXURE B

Interview guide

1. Age.....
2. Gender.....
3. Marital status.....
4. Educational Qualification.....
5. Place of interview.....

- **Theme 1: What is the extent of women's participation and involvement in the E-hailing transport industry?**

- How does your gender influence your decisions about using or driving for e-hailing?
- Have you experienced any unique challenges or benefits as a woman driving for e-hailing?
- Do you feel safer or more vulnerable using e-hailing compared to other forms of transportation?
- How satisfied are you with the e-hailing platform's support and policies?
- Does being a female driver for e-hailing make you feel more or less empowered?

- **Theme 2: What are the factors that may influence or limit the participation of youth entrepreneurs in E-hailing (Bolt) transport services during the post-COVID period in Thohoyandou?**

- Do you think the platform is doing enough to ensure the safety of female riders?
- Which factors may limit you from participating as an E-hailing (Bolt) driver?
- If you get employed elsewhere, would you quit being an E-hailing driver?
- Would you describe being an E-hailing (Bolt) driver as a safe working environment?
- Why would you say so?

- **Theme 3: What are the challenges encountered by Youth Entrepreneurs and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Thohoyandou?**

- Which challenges do you encounter as an E-hailing (Bolt) driver?
 - Do you think the challenges endanger your life as an E-hailing (Bolt) driver?
 - How does the platform's rating system impact your experience and income?
 - How does it affect you psychologically?
-
- **Theme 4: What influence did COVID-19 bring on Youth Entrepreneurship and Gender Dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Thohoyandou?**
- What influence did COVID-19 bring on E-hailing (Bolt) transport service?
 - What are your overall thoughts on the role of e-hailing in your community?
 - How did you get affected as an E-hailing (Bolt) driver?
 - Do you think e-hailing is providing more opportunities for women than traditional jobs?
 - Do you think E-hailing (Bolt) brought a positive change in the lives of youth entrepreneurs during COVID-19?
-
- **Theme 5: Which supporting measures can be taken to mitigate challenges encountered by youth entrepreneurs in the E-hailing (Bolt) transport services during post-COVID in Thohoyandou?**
- What are some specific changes that could make e-hailing industry more equitable for women?
 - Are there any ways the e-hailing platform could be improved to better support young people especially young women?
 - With public transportation clashing with E-hailing services, do you think there will be equity and fairness during post-COVID in the industry?
 - Do you think there should be more regulation of e-hailing industry, particularly regarding gender and safety?
 - Which interventions need to be implemented to avoid the ups and downs of the E-hailing and public transportation industry?

ANNEXURE C



ZEE EDITING AND PROOFREADING
SERVICES PO BOX 663 THOLONGWE 0734

10 August 2024

TO WHOM IT MAY CONCERN

This is to certify that the thesis titled **“youth entrepreneurship and gender dimensions in E-hailing (Bolt) transport services during and post-COVID period in the district of Vhembe, Limpopo Province, South Africa”** by Mabina Karabo Suzan, student number **15015241**, has been edited and proofread for grammar, spelling, punctuation, overall style, and logical flow.

The edits were carried out using the “Track changes” feature in MS Word, giving the author final control over whether to accept or reject affected changes before submission, provided the changes I recommended are effected to the text, and the language is of an acceptable standard.

Please don’t hesitate to contact me for any enquiry.

Kind regards



Prof Hlavisomhlaka (BEDSPF-UL, BA Hons-UL, MA-IUP: USA, PhD-WITS, PGDiP-SUN) Cell number: 079-721-0620/078-196-4459
Email address: hlavisomhlaka@yahoo.com

ANNEXURE D

MABINA KARABO FINAL THESIS.docx

ORIGINALITY REPORT

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