Queering Public Transport

Understanding access for Aotearoa queer communities

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Abstract

Queer people face inequitable access to public transport. International literature suggests that queer people are more likely to be transit dependent, but at the same time more likely to experience discrimination, harassment or violence while using it. However, little is known about what makes public transport attractive or accessible to this group. This thesis seeks to address this through a survey of 347 public transport users (half of whom are queer) to understand this issue in an Aotearoa context. The results show the main factors influencing the attractiveness and accessibility of public transport to queer people are not feeling safe, lack of transport choice, long journey times, and affordability. Straight people are also influenced by these factors, however at lower rates. Interventions that could improve public transport attractiveness and accessibility for queer people were also identified. Safety improvements such as more frequent services, safety interventions along walking routes to public transport, and staff training are key to improving queer public transport access. Improving travel times to reduce queer exposure to discrimination and harassment is also important. Engagement with queer people is key to ensuring interventions are appropriate for local contexts. The survey also showed that police presence is unlikely to improve queer feelings of safety. This research was the first study of queer people's access to public transport in Aotearoa and offers important practical insights as to how planners can support a just transition to a low emissions transport future.

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No pride for some of us without liberation for all of us. – Marsha P. Johnson (1945-1992)

Executive summary

Public transport has an important role to play in reducing transport emissions, while also enabling all people to meet their needs. However, access to public transport is not currently equitable, particularly for queer people who face high rates of discrimination and harassment while on board. This thesis investigates access to public transport for queer people and aims to understand how access can be improved for this group. Understanding the experiences of this historically marginalised group will help planners provide more accessible services, thus supporting a just transition to a low emissions transport system. To this end, this research aims to address the following three questions:

- What does existing literature tell us about the accessibility of public transport to queer people?
- What elements of the public transport system in Aotearoa New Zealand cities impact its attractiveness and accessibility to queer people?
- How can planners make public transport more attractive and accessible to queer people in Aotearoa New Zealand cities?

This thesis addresses these questions using a scoping literature review and an online survey of queer and straight public transport users in Aotearoa New Zealand cities. The literature review achieves three things:

- Establishes a model of public transport attractiveness and accessibility.
- Determines elements of public transport which affect its accessibility to queer people in the international context.
- Identifies potential interventions for improving queer access to public transport.

With the understanding developed through the literature review, the online survey is then used to test elements affecting queer access to public transport and interventions offering the potential for improvement. The online survey allowed for comparisons between queer and straight public transport users to understand where the biggest sexuality-based disparities lie.

The results of the online survey showed that the attractiveness and accessibility of public transport to queer people are influenced by several factors:

- A lack of accessible public transport options near their homes or destinations means queer people cannot access a service.

- Not feeling safe due to high rates of discrimination and harassment while walking to or from public transport, while waiting at a stop or station, and while on board reduces both the attractiveness and accessibility of public transport.
- Long journey times leave queer people exposed to discrimination and harassment reducing public transport's attractiveness and accessibility.
- The affordability of public transport makes it more attractive and accessible compared to more expensive modes.
- A lack of other options makes some queer people transit dependent.

To counter this, the online survey also tested a range of interventions which could improve the attractiveness and accessibility of public transport to queer people. The results show that improvements to service frequency combined with bus only lanes would have benefits by reducing journey times, thus making public transport more competitive with private car travel. This would also reduce queer people's exposure to discrimination and harassment while waiting for a service and while on board which could improve their feelings of safety. Additionally, training for transport staff on diversity and inclusion could help to reduce discrimination and harassment originating from staff which would further improve safety for queer public transport users. Queer survey respondents also showed strong opposition to police presence on public transport as a safety intervention. Finally, ongoing engagement with queer people will help to ensure planners are implementing solutions which are appropriate to the local queer community. This will further support a just transition to a public transport-based low emissions transport system.

Overall, this thesis makes strong contributions to planning practice in Aotearoa New Zealand and the international literature. The findings illustrate specific elements of public transport which affect queer access. The thesis also offers practical steps planners can take to improve access for this group. Additionally, the Aotearoa New Zealand focus broadens the geographic scope of the international literature. It also provides unique insight through the direct quantitative comparisons between queer and straight peoples' perspectives of public transport attractiveness and accessibility.

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1 Introduction

The New Zealand government has committed to reducing private vehicle use in favour of public transport as part of the Emissions Reduction Plan (Ministry for the Environment 2021). This plan aims for a 'just transition' which will avoid disproportionate negative impacts on marginalised communities. One group at risk of unjust outcomes in the transition to a low emissions transport system is the queer community. Queer people currently experience high rates of discrimination and harassment while using public transport which reduces its attractiveness and accessibility for this group. A widespread shift to public transport puts queer people at risk of disproportionate negative impacts if adequate mitigations are not put in place. In response, this thesis seeks to understand the elements of the public transport system which influence its attractiveness and accessibility to queer people and how it can be improved. With this information, planners can avoid the potential unintended impacts of a shift to a low emissions transport system, and support a just transition.

1.1 The importance of public transport

Public transport has the potential to disrupt existing car-centric planning systems and provide equitable and low emissions transport options for people. In recent decades transport planning has primarily provided for the unimpeded movement of private cars to the detriment of active modes and public transport. This car-centric transport planning paradigm disadvantages people who do not have access to a car and are forced to use other modes which are unaffordable, indirect, unsafe, or inconvenient (Gössling, Kees, and Litman 2022). Many people without access to a car experience transport disadvantage, meaning they have poor access to opportunities (Lucas 2012). Improving public transport presents an opportunity to improve access for marginalised groups within the existing transport system.

In addition to supporting social equity, public transport is important to reducing Aotearoa New Zealand's transport emissions. To reach the government's target of net zero emissions by 2050, New Zealanders need to reduce the number of vehicle kilometres travelled in private vehicles by shifting to low emissions modes including public transport (Ministry of Transport 2021; Oreffice and Sansone 2022). The concept of a 'just transition' is key to Aotearoa New Zealand's move to a low emissions transport system by ensuring that everyone can access the low emissions transport future.

1.2 The importance of queer people in planning research

The lack of research into queer access to public transport in the planning literature reflects the wider planning industry. Queer people have been overlooked in planning for much of its history (Doan 2015) and until recently, queer people have not been considered in conversations about transport equity in Aotearoa New Zealand (Burdett and Thomas 2020; H. Walker 2021). Where queer people have not been overlooked, planning has been used to control and exclude them from certain spaces (Frisch 2002). Planning and geography academics have 'queer-ied' the field and found planners to be complicit in reproducing heteronormative power structures (For example: Valentine 1993; Forsyth 2001; Frisch 2002; Chavez-Rodriguez, Lomas, and Curry 2020). Despite great advances in queer social acceptance and anti-discrimination legislation, queer people continue to be ignored in mainstream planning practice (Doan 2015). Doan (2015) suggests that this arises from a combination of heteronormativity, explicit discrimination, and a lack of political will to address risky or controversial topics.

The historic exclusion of queer people from planning research means little is known about queer people's experiences of public transport. Discussions about queer people's experiences have recently begun in the Aotearoa New Zealand context, with speculation that harassment and safety concerns reduce access to public transport for this group (Burdett and Thomas 2020; H. Walker 2021). However, there is little research that has involved data collection from Aotearoa New Zealand's queer population. Much of the data gathered about queer people's experience of public transport is limited to specific locations, mainly in large cities in Europe and North America (Lubitow et al. 2017; Weintrob et al. 2021). The main source of data in Aotearoa New Zealand is a nationwide survey into the health of trans and gender non-conforming people by Veale et al. (2019) which included a small section about public space. The study found many trans and gender non-conforming public transport users have experienced harassment, and a large minority have stopped using public transport out of fear of harassment (Veale et al. 2019). This thesis will build on both the international literature and the findings of Veale et al. (2019) to understand queer peoples' current experiences of public transport and how these can be improved.

Understanding queer people's access to public transport will provide valuable insights into queer mobility and bolster the existing literature about queer people's embodied experiences in public space (Valentine 1993; Doan 2007; Nusser and Anacker 2013; Gieseking 2020). National and international literature tends to focus on discrimination and harassment but fails to investigate the different elements of the transport system that lead to the exclusion of queer

people (Lubitow et al. 2017; Weintrob et al. 2021). This thesis will investigate the extent of discrimination and harassment on public transport in Aotearoa New Zealand, including where on the journey it occurs, and who the source is. It will also investigate other elements of public transport which influence its attractiveness and accessibility to queer people, such as affordability, journey time, other transport options, and environmental reasons. Solutions to improve the attractiveness and accessibility of public transport to queer people will also be investigated in this thesis. Without this, a just transition to a low emissions transport system for queer people cannot be achieved, and there are risks of implementing solutions that are inappropriate for this community or not suited to the Aotearoa New Zealand context.

1.3 Research objectives

This research seeks to answer the question 'how can access to public transport be improved for queer people in Aotearoa New Zealand?' This overarching question can be answered by the following three research questions:

- What does existing literature tell us about the accessibility of public transport to queer people?
- What elements of the public transport system in Aotearoa New Zealand cities impact its attractiveness and accessibility to queer people?
- How can planners make public transport more attractive and accessible to queer people in Aotearoa New Zealand cities?

1.4 Structure of thesis

To address the three research questions, this thesis is broken into five sections. It begins with a scoping review of international literature to examine how accessible public transport is to queer people. The literature review also identifies the elements of the public transport system which may influence its attractiveness and accessibility to queer people to inform later parts of the research. Next, the methodology section provides detail on the methods used to carry out the research. This includes a discussion on why each method was chosen and how potential drawbacks of the approach were mitigated. Following the methodology, the results section presents the results of the online survey of public transport users in Aotearoa New Zealand. Subsequently, the discussion puts these results into context and explores the meanings, relevance, and implications of the various findings. The discussion also delves into the limitations of the research and areas for future study. Finally, the conclusion presents the

answers to each of the research questions, summarises the research process and findings, and outlines the contributions of this research to the wider field of planning.

1.5 A note on language

Labels and language are important due to the power they hold when wielded by or against the queer community. There is not a definitive answer as to what the correct terms are for referring to queer people, so it is important to be explicit with the terms used throughout this thesis and the reasons behind them. Additionally, there are limits to the English language in describing the meanings of sexualities and gender identities outside of western culture (Veale et al. 2019). In response to these challenges, this section briefly outlines some of the terms used throughout this thesis, and the reasoning behind them.

Queer is used as an umbrella term for the wide range of gender and sexuality identities which differ from cisgender heterosexuality. While *queer* was once used as an insult, the term has been reclaimed, particularly by younger generations of queer people (Forsyth 2001; Doan 2007, 2011). Queerness exists as its own identity to describe both a sexual orientation and a gender identity (i.e. gender-queer). The term *queer* also recognises the fluidity of gender and sexuality: a person's gender and sexuality identities are multifaceted and may change over time and in different contexts (Forsyth 2001). Although *queer* is used as an umbrella term throughout this thesis, the author remains aware that there are multiple sub-groups within the queer population.

The term *trans* can also have multiple meanings. Historically *transgender* has been used to describe people who transition from male to female or vice versa with a focus on physical appearance and surgical transition (e.g. Doan 2007). In this thesis, the term *trans* is used to describe anyone who self-identifies with a gender identity that differs from the one they were assigned at birth. This includes transmen and transwomen and provides better recognition of nonbinary, fluid, and gender-neutral identities or other overlooked trans identities which Garrison (2018, 612) refers to as the "messy middle".

Throughout this thesis, other terms are used to refer to specific identities when talking about findings from other literature, or when describing the identities of participants. In these cases, the terms used by authors / individuals are applied both for accuracy and to avoid misidentifying people.

2 Literature Review

Queer people experience public transport differently from straight people and encounter different levels of access. To understand the current attractiveness and accessibility of public transport to queer people, this literature review begins by introducing a model for accessible and attractive public transport. The literature review then moves onto the two major factors influencing queer people's access to public transport: the heteronormative legacy of historic planning decisions, and the contemporary social attitudes towards queer people while using public transport. The heteronormative legacy of planning means the design of many urban spaces, such as public transport, make queer people feel out of place and unsafe. In addition, contemporary social attitudes towards queer people mean this group experiences high rates of discrimination, harassment and violence while using it. This reduces the attractiveness and accessibility of public transport for queer people. The review ends with a brief discussion on how despite these negative experiences, queer people may still use public transport at disproportionately high rates when compared with straight people.

Despite being an important everyday space, the amount of research specifically focused on the experiences of queer people in the context of public transport is quite limited in terms of the quantity of research as well as the areas studied. The core literature consists of a handful of papers which together cover a range of experiences of queer people using public transport in the United States, the United Kingdom and the Middle East. The literature review returned no results for peer-reviewed literature specific to Aotearoa New Zealand. Because of this, the literature review draws on international literature to support this research for the Aotearoa New Zealand context. Overall, the existing literature shows that queer people have inequitable access to public transport, and public transport is less attractive and accessible to queer people which can affect their access to daily needs.

2.1 What makes public transport attractive and accessible?

To investigate how queer people's access to public transport can be improved, it is first critical to understand the elements of public transport that influence its overall attractiveness and accessibility. The seven demands of public transport developed by J. Walker (2014) provide a useful model for developing this understanding. J. Walker (2014) describes seven different "demands" people seek from public transport. The more of these demands that are met, the more attractive and accessible a public transport service is. Table 1 provides a summary of these demands and how public transport may satisfy them.

Table 1 The seven demands of public transport and how these are served (Adapted from: J. Walker 2014)

The seven demands of public transport	How public transport serves them
It takes me *where* I want to go	Location of stops/stations Connectivity
It takes me *when* I want to go	Frequency Temporal span of service
It is a good use of my time	Location of stops/stations Frequency Speed or delay Civility (safety, amenity, courtesy etc.) Journey time
It is a good use of my money	Affordability
I can trust it	Frequency Reliability
It gives me the freedom to change my plans	Reliability Frequency Simplicity to remember and use network Presentation of information
It respects me	Civility (safety, courtesy, amenity etc.)

As shown in Table 1, there is a range of demands that public transport should meet to serve its users well. The first and most obvious demand of public transport is that users can access the places they want to travel to. This is facilitated by conveniently located and well-connected stops and stations (J. Walker 2014; Curtis and Scheurer 2015). The second demand is that public transport is available at the times users want to travel. This is influenced by the span of time that services are available throughout the day, as well as the frequency which influences the flexibility users have as to when they travel. Ideally, services will operate at a frequency of 15 minutes or higher to provide users with a convenient 'turn up and go' service (J. Walker 2014; Curtis and Scheurer 2015). Public transport users also have a demand for the service to be a good use of their time. Frequency is also important to this demand as higher frequencies reduce the time users spend waiting, while a lack of delays once on board public transport are also important to a timely service which minimises total travel time for users (J. Walker 2014; Curtis and Scheurer 2015). Feeling safe and secure while on board is also an important factor in users feeling that public transport is a good use of their time (J. Walker 2014). Users also want to feel that public transport is a good use of their money, for this to occur, fairs must be affordable (J. Walker 2014; Lubitow, Rainer, and Bassett 2017). Another demand of public transport is that users can trust it. For this to occur services must be reliable by showing up

consistently and on time. Frequency also promotes users' trust in public transport as if they miss a service, they can be confident that another one will arrive at their stop soon (J. Walker 2014; Curtis and Scheurer 2015). Reliability and frequency also contribute to meeting the demand for public transport users to change their plans or make spontaneous journeys. This spontaneity is further supported by easy to access and easy to remember information about the network which enables people to make on-the-go decisions about their trip (J. Walker 2014; Curtis and Scheurer 2015). The final demand from public transport is of particular importance to queer people: it must respect queer public transport users and allow them a sense of safety, courtesy and amenity (J. Walker 2014; Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020). The high rates of discrimination and harassment that queer people face (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021) likely mean that achieving respectful public transport is a key challenge in improving the attractiveness and accessibility of public transport for this group.

In addition, there is a significant difference between people who are 'captive' users of public transport or 'transit dependent' (J. Walker 2014). Captive users of public transport have the choice of other transport modes, but use public transport because it is the most attractive and accessible option for them. In contrast, transit dependent users have no choice but to use public transport and will continue to do so regardless of how poor the service becomes (Lucas 2012; J. Walker 2014; Lubitow, Rainer, and Bassett 2017). This is an important point to note as the literature suggests that queer people are more likely to be transit dependent than straight people (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020). The differences between captive and transit dependent users also describe a valuable distinction for considering improvements to the attractiveness and accessibility of public transport. Improvements should be made that make public transport more attractive and accessible to the people who are already forced to use it through transit dependence, as well as to encourage new captive users.

2.2 The impacts of a heteronormative planning history

Early planners had a heteronormative agenda which influenced how they planned for public space. Due to the strong heteronormative values at the time, planners actively made decisions to exclude queer people from public space by imposing heteronormative values in their plans and designs. This section explores the legacy of these decisions which means queer people feel unsafe and unwelcome in many public spaces, such as public transport.

Spatial sexualisation occurs when hegemonic social values about sexuality are established in a place, resulting in one group being privileged over another (Nusser and Anacker 2013). In most

public spaces straight cisgender people are privileged at the expense of queer people due to the value placed on heteronormativity (Valentine 1993; Forsyth 2001; Frisch 2002; Doan 2007; Nusser and Anacker 2013; Weintrob et al. 2021). These values arise from both deliberate action from planners (Frisch 2002; Chavez-Rodriguez, Lomas, and Curry 2020), as well as the gendered or sexualised performances of other individuals in these spaces (Valentine 1993; Forsyth 2001; Doan 2007; Weintrob et al. 2021). Understanding how and why everyday spaces become heteronormative is key to understanding why queer people feel less safe on public transport, influencing how attractive and accessible it is to this group.

From its inception, planning has been tied to heteronormative values. Through coded rules and laws, planners have sought to solve 'abnormalities of sexual expression' and 'to bring order out of chaos' since the late 19th century (Frisch 2002, 258; Doan 2011). Pioneering town planners, including Lewis Mumford and Patrick Geddes, thought that through designing public spaces that 'emphasised rationality' they could provide a 'cure' to queerness which they saw as a social ill (Frisch 2002). These planners also promoted 'order' by explicitly planning everyday spaces for the heterosexual nuclear family in an effort to deter homosexuality (Frisch 2002; Doan 2011). It is not surprising that queer people continue to feel uncomfortable in everyday public spaces when many of these queer-hostile spaces remain largely unchanged since their construction (Frisch 2002; Valentine 1993; Nusser and Anacker 2013).

Planners and planning rules have also been complicit in the active removal of queer people and spaces from the public sphere. Andersson (2015) uses the example of the Chi Chiz bar frequented by Black and Latino queer people in New York's West Village to illustrate how planning rules were weaponised to control queer people's use of the footpath throughout the 1980s. In a liquor licencing lawsuit, the proceedings focused on Chi Chiz patrons' use of the footpath and how it created a 'nuisance' in the area (Andersson 2015). Andersson's (2015) analysis of the proceedings highlights how planning concepts such as Jane Jacobs's 'eyes on the street' are twisted to promote the comfort of white straight people in the area at the expense of the Black and Latino queer people visiting the bar. Andersson (2015) emphasises that this is not the only case of planning rules and nuisance laws being used for the 'sanitisation' or 'vanillaisation' of urban space. Indeed, other authors describe queer businesses being denied planning approval for reasons such as avoiding public nuisance or protecting children (Doan 2011; Doan and Higgins 2011). The removal of these queer businesses has a domino effect on queer people's safety in the surrounding public spaces as there is no longer a sense of safety in numbers (Andersson 2015).

Planners have also influenced mobility outcomes for queer people through their focus on planning for the heterosexual nuclear family. By enforcing traditional gender roles through planning, the planners of the late 19th and early 20th century tied women to the home and to children in the suburbs, while men were tied to employment in the city (Sandercock and Forsyth 1992). The mobility patterns established under these gender roles continue today with men more likely to make direct trips for employment, while women are more likely to make multiple short trips for childcare and household duties (Chavez-Rodriguez, Lomas, and Curry 2020). Anyone outside these traditional gender roles is largely excluded from gendered examinations of mobility (Lubitow, Abelson, and Carpenter 2020). Heterosexuality and cisgender-ness continue to be the assumed default today. Although modern planning does not have such an explicit heteronormative agenda, the exclusion of queer people from planning continues to produce everyday spaces which are unsafe for queer people (Frisch 2002).

Nowadays, a space will have distinct features and operate differently depending on how it is sexualised. Nusser and Anacker (2013) used the case study of Kansas City, Missouri to describe a spectrum of sexualised everyday spaces ranging from 'queer space' to 'anti-queer space' as shown in Figure 1. Each of these types of sexualised spaces has different characteristics that queer people perceive as contributing to how safe and welcome they feel there. As shown in Figure 1, the spaces available in an average city lean towards the anti-queer. In the examination by Nusser and Anacker (2013), queer spaces tended to be informal and controlled by queer people themselves. This contrasts with the anti-queer spaces which tended to be very formal and corporate with exposed entrances. Table 2 provides a summary of the different characteristics of queer space, anti-queer space and the baseline normative space which is neither fully queer nor anti-queer.

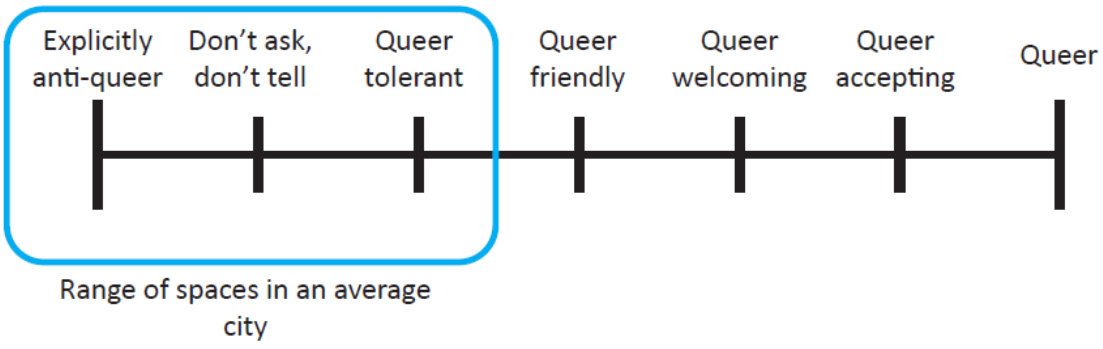

Figure 1 The spectrum of sexualised space (adapted from Nusser and Anacker 2013, 181)

Table 2 Characteristics of queer, normative and anti-queer spaces (adapted from Nusser and Anacker 2013, 186)

Queer space	Baseline normative space	Anti-queer space
• Highly enclosed • Informal entrances • Facades close to the street • Queer managers and users of space • One-way visibility to the street • Flexible spaces	• Informal regulation with a "don't ask, don't tell" policy • Strong awareness of whether it's safe to express queer identity	• Enclosed • Formal entrances • Explicit use regulations, such as a dress code • Corporate • Formal interior space • The perception that space is controlled by money • Explicit heterosexual signage

As well as the physical characteristics of a space, the behaviour of other people can also influence where the space falls on the spectrum of sexualisation (Valentine 2007; Nusser and Anacker 2013; Gieseking 2020). In her study of lesbian and bisexual women's perceptions of everyday spaces, (Valentine 2007) explained how just the presence of mostly heterosexual cisgender people in a space has the potential to make anyone else feel unwelcome:

> *"The identity of particular spaces [...] are in turn produced and stabilized through the repetition of the intersectional identities of the dominant groups [...] such that particular groups claim the right to these spaces. When individual identities are "done" differently in particular temporal moments they rub up against, and so expose, these dominant spatial orderings that define who is in place / out of place, who belongs and who does not." (Valentine 2007, 19).*

In the context of public transport, this assumption that everyone else is heterosexual and cisgender can cause queer people to feel like they do not belong, and that the space is heteronormative. However, the reproduction of identities in everyday spaces described by Valentine (2007) can also be wielded by queer people to disrupt the heteronormativity of the space. For example, in a semi-autoethnographic piece, Thorneycroft (2020) described walking to a train station and experiencing staring and non-verbal exchanges from other people on the street that the author assumed are heterosexual. Although initially a negative experience, the author suggested reimagining his narrative as 'queering the street' as the heterosexual onlookers observed and acknowledged his queerness (Thorneycroft 2020). This 'everyday resistance' can serve to queer everyday spaces in small but consistent ways.

The characteristics of different sexualised spaces provided by Nusser and Anacker (2013) are useful when considering the nature of public transport. Like the everyday spaces they described as being anti-queer, public transport has several features associated with anti-queer space. It is enclosed with exposed entrances, clear use regulations, requires a fee to enter the space and has a very formal spatial composition (Nusser and Anacker 2013). The enclosed nature of public transport has been mentioned in studies examining queer experiences of public transport. Both Weintrob et al. (2021) and Lubitow, Abelson, and Carpenter (2020) discussed the idea that the negative experiences queer people have in public spaces may be intensified on public transport for two reasons. Firstly, compared to walking past people on the street, public transport provides a long exposure time to strangers making queer people more likely to be noticed and subject to harassment or violence. Secondly, if that harassment or violence does occur, queer people are effectively trapped in an enclosed space and cannot escape until the next stop.

Overall, the sexuality of a space is typified by that space's characteristics, who controls it and how comfortable people feel expressing their queer identity in the space (Valentine 1993; Nusser and Anacker 2013). The fact that most city spaces are heteronormative stems from historic decisions by planners who sought to control the sexuality of citizens through the design of cities (Frisch 2002). Heteronormativity is upheld in contemporary spaces through the reproduction of heterosexual cisgender identities (Valentine 1993). This includes in public transport contexts where the majority of users are assumed to be heterosexual and cisgender. This suggests that public transport is a space which at best, is not necessarily welcoming to queer people, or at worst is a space which is actively anti-queer. Because of this, it is unlikely that queer users' need for respect while using public transport is being met (J. Walker 2014). This may affect the accessibility of public transport to queer people if they feel at risk of harassment while on board or like they do not belong in the space.

2.3 Social attitudes towards queer people using public transport

Social attitudes and people's behaviour have a strong influence on how queer people experience public transport. The literature shows high rates of discrimination, harassment and violence directed at queer people while they travel to or wait for a public transport service, or while on board. The following sections explore the negative experiences queer people have while accessing public transport which are born out of these social attitudes. The first section explores the sources of discrimination, harassment, and violence, as well as where queer people experience these things. Following that, the next section discusses some of the

differences between groups within the queer community. The literature shows that gender, ethnicity and disability interact with queerness, resulting in 'multiple marginalisation' for some queer people. The final section explores the impacts of social attitudes and people's behaviour impact on when, where and how queer people travel. This includes changes to queer people's travel patterns and their behaviour while travelling. Overall, the literature paints a picture of a transport system where queer people feel less safe using public transport than straight cisgender people due to the treatment they receive from other people.

2.3.1 Discrimination, harassment, and violence

The literature shows that queer people face high levels of discrimination, harassment and violence from others when using public transport. It is clear from the literature that queer people have a very different experience of public transport to their straight cisgender counterparts, and that differences within the queer community also exist based on individual identities. Discrimination, harassment and violence are covered in detail in a range of contexts by different authors, who describe it as coming from three main sources. These sources are other passengers, transport staff, and people passing by public transport stops (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Thorneycroft 2020; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022). In general, discrimination and harassment tended to relate more to gender identity than sexuality (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). However, some studies about sexuality also exist (Transport for London 2019; Weintrob et al. 2021).

From other passengers

Discrimination and harassment from other passengers were raised in multiple studies which centred trans and nonbinary peoples' experiences of public transport. Trans and nonbinary public transport users in several studies reported being subject to invasive questions (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020), had non-consensual photos taken of them (Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022), were subject to open stares (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020), or had other passengers move seats after realising they were sitting next to a trans or nonbinary person (Lubitow et al. 2017). Lubitow, Abelson, and Carpenter (2020) raised the idea of confusion being the source of much of this discrimination and harassment. The authors discuss the idea that confusion itself may not be threatening. However, on a large scale, it can become overwhelming for queer public transport users, particularly when they must be on guard daily

against the potential consequences of another person's confusion (Lubitow, Abelson, and Carpenter 2020).

Queer public transport users do not have to experience harassment targeted specifically toward them to be fearful of using public transport. Weintrob et al. (2021) found that in the United Kingdom, 42% of queer public transport users had negative comments either made about them or targeted towards them by other passengers. However, over 90% had overheard these negative comments being made towards another passenger. Weintrob et al. (2021) link experiencing or witnessing crimes with feeling unsafe or fearful on public transport. In fact, queer people did not even have to witness crime firsthand to feel unsafe on public transport, hearing about crime against their queer peers or through news reports was enough to reduce their feelings of safety. The fact that queer people feel they must be on guard against potential discrimination and harassment throughout their journey suggests public transport is not a space where queer people feel respected, therefore reducing its attractiveness and accessibility (J. Walker 2014).

From transport staff

Discrimination and harassment from transport staff were a concern for many queer people. Discrimination and harassment were predominantly reported by trans, nonbinary and gender nonconforming public transport users (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). However, cisgender gay, lesbian and bisexual people also experienced discrimination and harassment from transport staff (Transport for London 2019). In Portland, United States and Istanbul, Turkey trans and gender nonconforming people experienced discrimination from transport staff in the form of being denied entry to the bus (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). This tended to be accompanied by verbal harassment as the bus driver pulled away (Shakibaei and Vorobjovas-Pinta 2022).

Transport staff also contributed to queer people feeling unsafe by failing to intervene when other passengers were the perpetrators of discrimination, harassment or violence. Lubitow, Abelson, and Carpenter (2020) reported the disappointment that many trans and nonbinary passengers felt at the lack of intervention by transport staff. Because transport staff hold relative power in the context of public transport, some trans and nonbinary people saw their lack of intervention as just as bad as the harassment itself. Although the transport staff were not actively carrying out harassment, they were seen as enabling the environment which

allowed the harassment to occur (Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022).

Outside of carrying out deliberate discrimination or harassment, or failing to intervene on behalf of queer people, transport staff sometimes unknowingly contributed to unsafe environments through misgendering or using gendered language with queer passengers. Misgendering or inappropriate use of gendered language by transport staff was reported in multiple studies (Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). Queer participants described that even terms generally considered respectful, such as 'sir', made trans and gender nonconforming people feel unwelcome or uncomfortable when used incorrectly (Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). This leads to queer people not feeling respected which reduces their perceptions of the attractiveness and accessibility of public transport.

From people passing by

Harassment does not only occur while queer people are on board public transport. It also occurs while queer people are waiting for a service at public transport stops and stations. Harassment perpetrated by people either walking or driving past a bus stop was raised by Lubitow, Abelson, and Carpenter (2020) and Shakibaei and Vorobjovas-Pinta (2022). The authors of both studies raised the point that waiting at a bus stop for a long time can make trans and gender nonconforming people feel exposed and vulnerable to people passing by. Lubitow, Abelson, and Carpenter (2020) described how one participant felt trapped waiting for their bus. Despite two cars pulling into the bus stop to yell homophobic slurs, the participant could not leave the bus stop as they knew that missing the next bus would expose them to further harassment as they waited for a later service (Lubitow, Abelson, and Carpenter 2020).

Harassment from people passing by was a particular problem at night. An increase in the number of drunk people passing bus stops and reduced bus frequencies were cited as making waiting for a bus more dangerous by participants (Shakibaei and Vorobjovas-Pinta 2022). Thirteen of the 49 trans or gender nonconforming participants in the Turkish study had experienced harassment from people passing by (Shakibaei and Vorobjovas-Pinta 2022). This harassment tended to be sexual or stemmed from the perpetrator's religion or culture (Shakibaei and Vorobjovas-Pinta 2022). Trains were seen as safer than buses if people had to wait a long time for a ride home, particularly at night. Train stations tend to be better lit, have suitable seating and shelter, and train schedules tend to be more reliable. Shakibaei and Vorobjovas-Pinta (2022) report trans and gender nonconforming people felt safer waiting at a

train station for these reasons. The findings of this study highlight the importance of taking into account the whole journey when considering how to improve the safety of queer people using public transport. The seven demands of public transport which influence public transport attractiveness and accessibility must be met for all phases of a queer person's journey (J. Walker 2014).

Violence

Experiences of violence were reported across nearly all the studies which examined discrimination and harassment. In general, violence was less common than discrimination or harassment, however, a significant minority of queer people experienced violence, and at a higher rate than straight cisgender people (Transport for London 2019). In studies which interviewed or surveyed only queer people, very high rates of violence were reported among the participants (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022). In some cases, it is difficult to tell whether the violence queer people experienced was motivated by homophobia or transphobia, or was unrelated to the queer person's gender / sexuality. However, the very high rates of violence experienced by participants across multiple studies make it clear that violence is a significant issue for queer people (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022). This violence manifested in multiple ways including physical intimidation, groping or other unwanted touching (Shakibaei and Vorobjovas-Pinta 2022), physical assault (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020), public masturbation directed at queer people (Shakibaei and Vorobjovas-Pinta 2022) and sexual assault (Reddy-Best and Olson 2020).

The response to violence directed at queer people by bystanders is also an aspect of violence to consider. Shakibaei and Vorobjovas-Pinta (2022) and Lubitow et al. (2017) provided examples of trans people not being extended basic human decency by transport staff and people passing by. One participant, a trans woman in Istanbul, described being groped by a man on a crowded bus, when she grew angry and asked him to stop, it was the trans woman that was made to leave the bus by the driver while the man remained (Shakibaei and Vorobjovas-Pinta 2022). The participant interpreted the blame as falling on herself because she was in a conservative town and appeared as too different from society's gender norms (Shakibaei and Vorobjovas-Pinta 2022). In another example, a trans woman in Portland was stabbed at a transit stop in a transphobic attack. Despite there being other people present, she had to phone emergency

services herself (Lubitow et al. 2017). These examples suggest that the heteronormative nature of public transport can lead to unfair and dangerous outcomes for queer people.

Queer people often interpreted the severity of violence differently to that of discrimination and harassment. Outside the context of public transport, Meyer (2012) provided an interesting discussion about the meaning of verbal harassment and physical violence. For some participants in the study, verbal harassment was seen as minor when compared with physical violence, for example, one participant shared:

> *"Verbal's not as bad because I can go about my life. When someone says something to me, I can go about my life." (Meyer 2012, 863)*

For other people, verbal harassment was seen as just as bad as physical violence because of the possibility that it would escalate to physical violence. This caused people to feel the same fear symptoms in response to discrimination or harassment that they would feel if experiencing violence. In one example, a participant was approached by a man on the street who began by asking if she was trans, this escalated to verbal harassment, and then physical violence in the form of hair pulling. The participant described her fear that sexual assault would be the next step in the escalation (which fortunately did not occur in this situation) (Meyer 2012). The participants who viewed discrimination, harassment and violence as existing along this continuum were mainly trans and lesbian women. They tended to see all forms of harassment and violence as related, with sexual violence being the most severe, followed by physical violence (Meyer 2012). This is important when considering queer experiences of public transport as seemingly minor incidents could have strong impacts on queer women passengers.

In general, literature on queer experiences of public transport consistently reports high levels of discrimination, harassment and violence against queer people (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022). Where data comparing the experiences of queer people with straight people is available, it shows that queer people experience disproportionately high levels of violence (Transport for London 2019). Discrimination, harassment and violence came from several locations including other passengers, transport staff and people passing by stops or stations, this meant that queer people had these negative experiences both on transport itself, and while waiting for it to arrive (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022). Overall, this shows that public transport is not

attractive and accessible to public transport as queer passengers are not being provided with the safety and courtesy which J. Walker (2014) describes as key to public transport systems.

2.3.2 Differences based on gender, sexuality and ethnicity

Identity plays a large role in how a person experiences space, including public transport. Because the queer community is not a monolithic group, a range of queer experiences of public transport exist which means there is diversity in queer access to public transport. Not only are there multiple sexualities and gender identities within the community, but other aspects of queer peoples' identity can influence their experiences leading to multiple marginalisation. Many studies of harassment, discrimination or violence on public transport have examined these differences through an intersectional lens (Lubitow et al. 2017; Loukaitou-Sideris et al. 2020; Weintrob et al. 2021; Loukaitou-Sideris and Ceccato 2022).

When people are members of more than one historically marginalised identity group they may experience discrimination in complex ways. Weintrob et al. (2021) raised the idea of 'double victimisation' among the women and nonbinary participants in their study. Several participants reported verbal harassment which was both sexist and homophobic, and in many cases, the participants could not identify the motivation behind the harassment. Harassment of queer women and nonbinary people was seen as forming part of a wider culture of street harassment and cat calling which enforces both patriarchal and heteronormative values in public space (Weintrob et al. 2021; Loukaitou-Sideris and Ceccato 2022). For queer women of colour, double victimisation can become 'multiple victimisation' as harassment becomes racially motivated too.

Homophobic violence and harassment which is both gendered and racialised occur in the public transport context. Lubitow, Abelson, and Carpenter (2020) conducted a study involving 25 interview participants, of whom, 22 reported some type of negative experience involving harassment or violence on public transport. The three participants who did not report negative experiences were all white, and two of these participants were trans men. These findings are reflected in a study by Lubitow et al. (2017) where the only participants who had not experienced discrimination or harassment in relation to their gender expression were trans men. Some of these trans participants compared their experiences pre- and post-transition, explaining that they experienced less harassment after they were no longer perceived as women (Lubitow et al. 2017). This suggests that white ethnicities and male-ness provide some measure of protection against harassment and violence for queer people (Lubitow, Abelson, and Carpenter 2020).

Disability also interacts with queerness to reduce queer disabled peoples' experiences of public transport. Lubitow et al. (2017) described disability and gender as important aspects of their participants' identities which interacted with negative impacts on their access to public transport. Several participants described challenges directly resulting from being both queer and disabled. For example, one disabled agender participant described having their gender questioned when they asked for a seat on a busy bus (Lubitow, Rainer, and Bassett 2017). Another agender demigirl with autism described how the pressure of how people perceived them on public transport contributed to the sensory overload they experienced while on board. Although only covered in detail in a single study, these findings suggest that public transport is less attractive and accessible to queer disabled people than non-disabled queer people or disabled straight people.

In summary, the literature shows that intersectionality is important when considering the attractiveness and accessibility of public transport to queer people. Queer people who are members of other historically marginalised groups tend to experience worse outcomes when it comes to discrimination and harassment which is often called double or multiple victimisation (Weintrob et al. 2021; Meyer 2012). The literature focuses on the experiences of queer people based on ethnicity and gender (Meyer 2012; Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021), and to some extent on disability (Lubitow et al. 2017). Intersectionality is key to understanding how queer people experience public transport as queerness often interacts with other marginalised aspects of a person's identity resulting in unique experiences. This has impacts on the attractiveness and accessibility of public transport as different intersectional queer identities interact with public transport making it more difficult to access public transport services.

2.3.3 Impacts on when, where and how queer people travel

Queer people's travel patterns and behaviour are impacted by the possibility that they could experience harassment or violence on public transport. For some queer people, this involves no longer using public transport, changing when they travel, or altering the public transport routes they take. For other queer people, it involves self-surveillance and changing the way they dress or act on public transport intending to be less noticeable to potential harassers.

Travel patterns

Queer people's travel patterns can be affected by negative experiences of public transport. Some queer people experience a loss of mobility as they stop using public transport either

temporarily or permanently in response to discrimination or harassment. In these cases, public transport can no longer be considered accessible to queer people as the risk of discrimination or harassment presents an insurmountable barrier. Two sources provide data for the United Kingdom and Aotearoa New Zealand about the link between discrimination or harassment and public transport cessation among queer people (Veale et al. 2019; Transport for London 2019). Passenger data published by Transport for London (2019) showed that lesbian, gay and bisexual passengers are more likely to stop using public transport as a result of experiencing harassment than straight passengers. Around 20% of lesbian, gay or bisexual passengers who had experienced harassment stopped making that journey, compared to just 15% of straight passengers (Transport for London 2019). In the Aotearoa New Zealand context, data from the Counting Ourselves report (Veale et al. 2019) provided insight into public transport cessation among trans and gender non-conforming public transport users. Veale et al. (2019) found that 18% of trans and nonbinary people had avoided public transport out of fear of mistreatment because of their gender (Veale et al. 2019). In some cases, avoidance of public transport was only temporary following an incident of harassment or violence (Lubitow, Abelson, and Carpenter 2020), however, it is clear that the threat of discrimination, harassment or violence is impacting the accessibility of public transport to queer people.

While some queer people stopped using public transport altogether, others made changes to their travel patterns in an effort to minimise their risk of discrimination, harassment or violence (Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). Some queer people changed the time of day they travelled, limiting themselves to off-peak trips or daylight hours only as busy or late-night services were seen as riskier (Lubitow et al. 2017). Other queer people would only travel when they could coordinate their trip with others to provide a semblance of safety in numbers (Weintrob et al. 2021). Queer people also described altering their routes, either riding past their stop or getting off early in response to an incident during their journey (Lubitow et al. 2017; Weintrob et al. 2021). Another strategy was choosing a different bus route or train line to feel safer after past incidents (Lubitow et al. 2017; Weintrob et al. 2021). All these travel pattern changes serve to limit queer people's mobility and reduce the everyday activities these queer people are able to participate in (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). Although the literature is in general agreement that negative experiences affect queer travel patterns, not all queer people do alter their travel in response to discrimination, harassment or violence. Weintrob et al. (2021) found that despite experiencing harassment and violence, the mobility of many queer people in the United Kingdom and Tel Aviv did not change significantly. This

'refusal to be excluded' is likely because the queer people had no other option except public transport (Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021).

Behaviour while travelling

In addition to changing their travel patterns, queer people also change their behaviour while travelling to avoid negative experiences. These behaviour changes largely involved self-policing in order to make themselves appear 'less queer', thus less noticeable to potential harassers. The participants in multiple studies described self-policing their behaviour or appearance while using public transport in an effort to reduce their likelihood of being harmed (Lubitow et al. 2017; Reddy-Best and Olson 2020; Weintrob et al. 2021).

Public transport can be uncomfortable for queer people because of the feeling that they are being watched. Public transport vehicles like buses or train carriages are comparable to Foucault's panopticon as they are sites where the potential to be observed causes people to alter their behaviour (Reddy-Best and Olson 2020). In Foucault's panopticon, prisoners conform to behavioural expectations due to the possibility that they are being surveyed from the central watch tower (illustrated on the left in Figure 2) (Reddy-Best and Olson 2020). Reddy-Best and Olson (2020) apply this to trans peoples' experiences of travelling, describing how trans people are constantly aware of other people's stares. In response, trans people carry out self-surveillance and control their appearance and behaviour to appear 'less trans' or to 'pass' as cisgender just in case someone is watching. In the context of public transport, this phenomenon manifests in trans people altering their behaviour as they can never be sure who is watching or if they are being watched at all (illustrated on the right in Figure 2). Reddy-Best and Olson (2020) introduced the term 'identity labour' to describe this additional effort trans people must exert to protect themselves. Trans participants in the study described compromising their gender identity by dressing in a way they thought would make them less noticeable to other passengers, or not using public transport at all until they were confident that their gender presentation would 'pass' as their desired gender identity (Reddy-Best and Olson 2020). This identity labour and the effort trans people must exert, show that the demand for respect for public transport users set out by J. Walker (2014) is not being met consistently for all queer people.

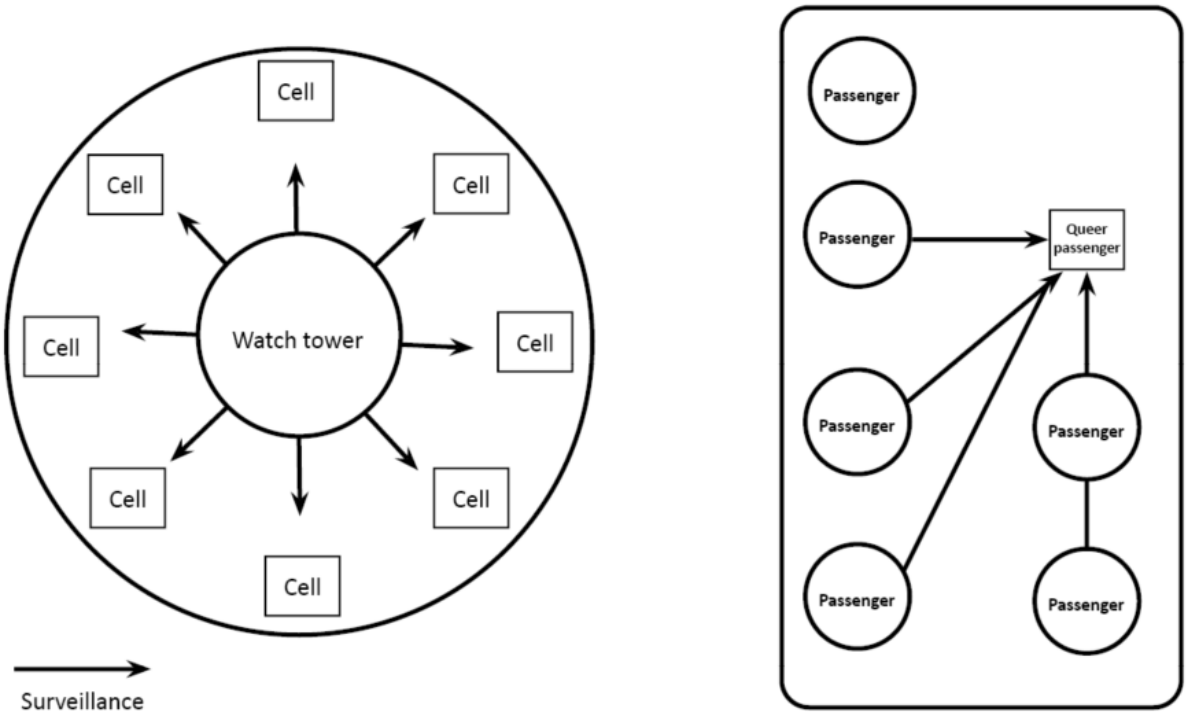

Figure 2 A comparison of surveillance in Foucault's panopticon and public transport

Identity labour also involved being constantly alert and hyper-vigilant about potential risks while using public transport. This means trans people expend effort while they travel that straight cisgender people do not need to expend (Reddy-Best and Olson 2020; Weintrob et al. 2021). Even simple interactions with other passengers required alertness, adding to the stress of travelling for trans people, for example, one participant said:

> *A stranger wanted to ask me something on the bus, and immediately all my defence mechanisms alerted. There is a place in me knowing that something is approaching, waiting for it to happen, which implies a constant level of stress. (Weintrob et al. 2021, 781)*

Although they did not use the same term, Lubitow et al. (2017) and Weintrob et al. (2021) also described identity labour and self-surveillance carried out by their participants. Many trans and nonbinary people saw the harassment, discrimination and violence they experienced on public transport as a direct result of the visibility of their gender non-conformity (Lubitow et al. 2017). For this reason, they would deliberately dress and act in certain ways to feel safer while travelling (Lubitow et al. 2017; Weintrob et al. 2021). This is reflective of Valentine's (1993) study of lesbians' experiences of public space which found that lesbians do modify their behaviour and appearance to navigate these spaces more easily. Overall, self-surveillance and behaviour monitoring contributed to an atmosphere of fear which reduces queer people's

experience of public transport, even if they do not experience discrimination, harassment or violence (Lubitow et al. 2017; Reddy-Best and Olson 2020; Weintrob et al. 2021).

While most queer people minimised their queerness in response to being watched, some used it as an opportunity to 'queer' the public transport space. In two studies there was a small minority of participants who deliberately flaunted gendered expectations and intentionally made their nonbinary-ness or trans-ness visible, thus 'queer-ing' the space (Lubitow et al. 2017; Reddy-Best and Olson 2020). This was described as an "intentional, political, gender non-conformity" or a "gender fuck" (Lubitow et al. 2017, 1405) which can be seen as a deliberate act to queer public transport. These proud non-conformers may make less visible queer people feel more confident on public transport, as they can see themselves reflected in the other passengers (Weintrob et al. 2021). This disrupts the heterosexualisation of everyday spaces, such as public transport, described by Valentine (2007), whereby the repetition of heterosexual and cisgender identities renders public transport a heteronormative space. Despite not compromising their gender identities, proud gender non-conformers are still carrying out identity labour and self-surveillance as they consider how their gender presentation will be perceived. The decision to be proudly gender non-conforming also requires trade-offs as the individual actively chooses whether it is worth compromising their safety to express their gender authentically (Reddy-Best and Olson 2020).

In summary, the literature shows that queer people's travel patterns and behaviour change in complex ways in response to the threat of harassment or violence. In some cases, public transport becomes inaccessible due to the unacceptable risk of discrimination, harassment or violence perceived by queer people. Some queer people who experience or witness harassment or violence avoid public transport altogether (Veale et al. 2019; Transport for London 2019; Lubitow, Abelson, and Carpenter 2020), while others modify their travel patterns by taking different routes or travelling at different times of the day (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022). Others engage in self-surveillance and modify their behaviour and appearance to fit in with other passengers to avoid harassment and violence, but at the cost of compromising their identities (Lubitow et al. 2017; Reddy-Best and Olson 2020; Weintrob et al. 2021). Together, the literature shows that queer people's access to public transport is altered in response to the threat of harassment and violence in ways that the rest of the population does not experience. This has potential knock-on effects on queer people's access to their daily needs as well as their ability to participate in their communities.

2.4 Queerness and public transport mode share

Despite the negative experiences of public transport that queer people endure, queer people still appear to use public transport at higher rates than the general population. This suggests that despite the barriers queer people face in accessing public transport, some level of attractiveness and accessibility remains. Oreffice and Sansone (2022) used data from the American Community Survey (2008-2019) to explore differences in commuter mode choice based on sexuality. Being in a "same-sex relationship" was used as a proxy indicator of sexuality. The authors found that working men and women in same-sex relationships were more likely to use public transport for their commute than working men and women in different-sex relationships. This difference was most pronounced for working men in a same-sex relationship who have a 13.0% lower likelihood of driving to work and a 7.0% higher likelihood of taking public transport to work than working men in different-sex relationships (Oreffice and Sansone 2022). The authors found this difference was still statistically significant, even after controlling for multiple demographic and location factors including whether the couple had children. This is supported by earlier work by Klein and Smart (2016) who also used the American Social Survey to explore differences in public transport use for people in same-sex relationships compared to people in different-sex relationships, with a focus on the data from 2010. This study found 10.3% of men in a same-sex relationship commuted to work using public transport compared to 3.5% of men in a different-sex relationship. The difference between women in a same-sex relationship and women in a different-sex relationship was less pronounced at 6.0% and 3.7%, respectively, but is still significant (Klein and Smart 2016). Klein and Smart (2016) also controlled for various factors but found that these differences between the sexuality groups persisted.

While different researchers tend to agree that queer people are more likely to use public transport than straight cisgender people, there is disagreement as to why this occurs. Additionally, gender and sexuality likely affect mode choice differently, which further complicates the question of what causes the difference in mode choice. For men and women in same-sex relationships, Oreffice and Sansone (2022) and Klein and Smart (2016) ascribed mode choice difference to lifestyle choices which stem from some degree of financial privilege. For trans and gender nonconforming people, Oreffice and Sansone (2022) and Shakibaei and Vorobjovas-Pinta (2022) saw a correlation between lower incomes for these groups and transit dependence, which left them with no option except public transport. Using data from the General Social Survey, Oreffice and Sansone (2022) found that people in a same-sex

relationship were more likely than people in a different-sex relationship to have a strong interest in environmental issues and to want greater investment in projects which enhance the environment. The authors tied this fact to the mode choices of people in same-sex couples. They concluded that people in same-sex couples were more likely to be environmentally conscious and that this was the main reason behind the significant sexuality-based differences. Klein and Smart (2016) found that for gay men in particular, neighbourhood location had a large influence on commute distance and mode choice. Because gay men are less likely to have children and tend to have higher household incomes, they are better able to afford homes in high-amenity, inner-city neighbourhoods which are walkable and well-served by public transport (Klein and Smart 2016). In summary, it seems that for this sect of the queer community, financial privilege and lifestyle choices enable their high public transport mode share.

While environmental attitudes are likely to have a large influence on mode choice for these older, wealthier and better-educated groups, it is also likely that a more complete dataset with single queer people and a greater representation of trans and nonbinary people would produce a different result. Smaller scale studies in Portland, United States (Lubitow et al. 2017) and Istanbul, Turkey (Shakibaei and Vorobjovas-Pinta 2022) have used interviews to focus specifically on the experiences of trans and gender nonconforming people using public transport, which help to fill this gap in understanding. In both these studies, trans and gender nonconforming participants reported being unable to afford a car which left them dependent on public transport for their travel. Shakibaei and Vorobjovas-Pinta (2022) also found that people employed in underground or informal economies had the least access to a private car. This was tied to employment discrimination which disadvantages trans people's access to employment (Lubitow et al. 2017).

Overall, the literature is clear that the rate of public transport use by queer people is likely to be higher than the general population. This phenomenon has been found across studies focused on specific sects of the queer population such as men and women in same-sex relationships (Klein and Smart 2016; Oreffice and Sansone 2022), as well as amongst trans and nonbinary people (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). No studies appear to have taken a holistic, quantitative view of queer people to understand precise rates of public transport use and how they differ between queer and straight cisgender people. Such a study could shed light on these differences, as well as the

reasons behind them. This presents an opportunity to make improvements for transit dependent riders (J. Walker 2014).

2.5 Summary of the literature

The literature shows that queer people and straight cisgender people experience different levels of accessibility when it comes to public transport. This largely stems from the sexualisation of public space which permeates public transport. Public space has become heteronormative through a combination of historic planning decisions which privilege heterosexuality and cisgender-ness at the expense of queer people. It is through these processes that public transport becomes an anti-queer space at worst or a queer-tolerant space at best. Queer access to public transport is also affected by social attitudes characterised by discrimination, harassment or violence directed at queer individuals, particularly if they are a member of another marginalised community. The literature shows that queer people who are trans, disabled, women or nonbinary, or have a non-white ethnicity are more likely to experience discrimination, harassment or violence, and will experience these things in more complex ways. Additionally, queer people do not need to have these negative experiences themselves in order to be fearful of public transport; just the threat that they could be harassed is enough to reduce their feelings of safety. Queer people's negative experiences of public transport go on to affect the way they travel. They may change their routes and the time of day they travel or stop using public transport altogether. Queer people's behaviour while travelling may also change, negatively affecting their experience of the service as they must constantly monitor their surroundings for threats and adjust their behaviour. Despite these negative impacts, queer people are still more likely to use public transport than their straight counterparts – either because it aligns with their values, or because they have no other choice. This creates a paradoxical situation where despite being more likely to have a negative experience and theoretically having lower accessibility, queer people are still more likely to use public transport than straight cisgender people. Overall, the literature tells a story of negative queer experiences of public transport which go on to affect queer people's access to their daily needs in ways not experienced by straight cisgender people.

3 Methodology

This section provides an overview of the methods used to conduct the literature review and to gather and analyse the primary data used in the study. It includes justification for the choice of methods as well as a brief discussion of the strengths and drawbacks and how they were mitigated. Finally, the author discusses their own positionality and how this has influenced the research. Overall, the combination of a broad literature review and primary data collection provides a solid evidence base for understanding how access to public transport be improved for queer people in Aotearoa New Zealand.

3.1 Scoping literature review

Central to this research is understanding the specific elements which impact public transport attractiveness and accessibility to queer people, as well as opportunities for planners to make it more attractive and accessible to this group. A scoping literature review provided a foundational understanding of these two issues. The literature review revealed several influences on public transport attractiveness and accessibility for queer people, as well as interventions which could improve attractiveness and access to public transport for this group. These findings informed the development of the online survey which then tested the impact of these influences, as well as the perceived benefits of different interventions.

After an initial scan of the literature, a scoping literature review method was chosen, due to the scarcity of research which considered both queerness and public transport. This scoping approach is favoured by Pham et al. (2014) in situations such as these, where there is little published literature on an emerging topic. As the topic of queer people's access to public transport has only recently emerged within the last 10 years, the scoping literature review helped provide a comprehensive overview of the existing literature to date.

The first stage of the scoping literature review was identifying the relevant sources. Sources were identified during the initial searches conducted in March 2022. Relevant peer-reviewed, English-language literature was identified through searches on Scopus and Google Scholar using search terms related to gender and sexuality, and public transport. These databases were selected for their comprehensiveness and to provide coverage over a broad range of disciplines. A relatively large number of search terms were employed in both databases. This is due to both the diversity in the language used to describe queer people and to broaden the search due to a low number of results in test searches. Table 3 shows the terms used in the searches of Scopus and Google Scholar.

Table 3 Search terms used in the literature review

Gender / sexuality-related terms	Public transport-related terms
queer OR gay OR lesbian OR transgender OR bisexual OR "gender diverse" OR homosex* OR "sexual orientation" OR "gender minorities" OR intersex OR "same-sex"	"public transport" OR "public transit" OR "mobility justice" OR bus OR "commuter train"

The titles, keywords, and abstracts of all the Scopus results and the first 200 Google Scholar results (of >166,000 results) were reviewed for relevance. Studies were included if they included terms relating to queer people and planning generally, equity and public transport, or queer people and public transport. The two former criteria were used as they could provide supporting information to assist in answering the research question. Snowballing was then used to identify additional sources from the reference lists of the literature, resulting in 43 relevant sources in total. Despite this comprehensive approach, it is possible that some literature was not captured due to the search terms and databases used. An additional search, using the same search terms, was carried out in February 2023 to confirm that no new literature had been published on the topic during the preceding year. This later search identified no additional sources.

The second stage of the literature review involved a thematic analysis of the relevant sources. The analysis was supported by NVivo software and involved a manual review of each source. High-level coding categories were used to capture elements which influenced queer people's use of public transport and interventions to improve attractiveness and accessibility for this group. From there, an inductive coding approach was used which allowed the themes to emerge from the literature as the analysis was conducted, rather than imposing a set of preconceived themes onto the literature. After first reading through several of the sources for familiarisation, the codebook was further developed with some primary themes which began emerging from the literature. These codes were built on as the analysis continued and more codes and sub-codes were identified. The result was a list of elements which either improved or reduced the attractiveness and accessibility of public transport to queer people. This was accompanied by a list of interventions to improve the attractiveness and accessibility of public transport to queer people which largely related to safety.

3.2 Online survey

An online survey targeting public transport users in Auckland, Hamilton and Wellington was used to gather a combination of qualitative and quantitative data from a range of public

transport users. This survey was designed to test the findings of the literature review in the Aotearoa New Zealand context. The approach of using surveys to understand user experiences of public transport is established in the literature. It has been used to study queer experiences of public transport (Weintrob et al. 2021), as well as to study phenomena which affect queer people (among others) on public transport such as sexual harassment (Loukaitou-Sideris et al. 2020; Loukaitou-Sideris and Ceccato 2022) and fear of crime (Yavuz and Welch 2010).

A diverse range of people participated in the survey. The survey was hosted online, on Survey Monkey and ran from 22nd June to 24th July 2022. A copy of the full survey is provided in Appendix A. Participants were provided with information about the survey and research project and were invited to give consent to participate by beginning the survey. The data collection, analysis and storage were all carried out with ethical approval from the University of Waikato Human Research Ethics Committee. Confirmation of ethical approval is provided in Appendix B.

The survey began by asking about demographic data including age, ethnicity, income, disability and location to enable comparison between different groups. In addition to demographic questions, respondents were asked a series of questions designed to understand their physical access to public transport. These included:

- Do you have a bus, train or ferry stop within a 10-minute walk of your house?
- How frequent is the service at the stop you use most often?
- In a typical week, how often do you use public transport?
- Would you like to take public transport more often?

Participants were also asked to use a five-point Likert scale to indicate the importance of reasons they use public transport and factors that prevent them from using public transport more frequently. These questions were designed to test the aspects of public transport that improved or reduced its accessibility and attractiveness to participants. Table 4 shows the factors which were tested in the survey.

Table 4 Factors influencing public transport use by participants

Reasons for using public transport	Factors preventing more frequent use
• I do not have a driver's license • For environmental reasons • It is affordable • It is convenient / easy • I prefer it to other modes • I have no other option for getting where I need to go	• It is too expensive • It takes too long • There are no accessible options near me or my destination • I don't feel safe using public transport • I don't have a reason / purpose for making more trips

The literature review suggested that discrimination, harassment and violence are major issues affecting the accessibility of public transport to queer people. As a result, a series of questions relating to discrimination and harassment were included in the survey. Violence was defined as a type of harassment so was not asked about separately. These questions included:

- How often do you experience discrimination when using public transport?
- Who of the following have you experienced discrimination from?
- In what locations have you experienced discrimination?
- How often do you experience harassment when using public transport?
- Who of the following have you experienced harassment from?
- In what locations have you experienced harassment?

Participants who had experienced discrimination or harassment were invited to provide further detail on their experiences with discrimination or harassment in open field comment boxes. This allowed the collection of some qualitative data about discrimination and harassment which could not accurately be captured in the multichoice questions. Finally, participants were asked about interventions that would make them feel safer while using public transport. A list of interventions drawn from the literature was provided and participants were asked to rate whether they agreed each intervention would improve their safety using a five-point Likert scale. The interventions included in the survey are shown in Table 5.

Table 5 Safety interventions rated by participants

Intervention
• Training for transport staff on diversity and inclusion • Inclusive messaging / signage supporting diversity and inclusion • CCTV/ security cameras on public transport • Increased security guard presence • Increased police presence • More frequent services (e.g. buses every 10 minutes, instead of every 20 minutes) • Shorter distances between bus stops • Better lighting at public transport stops or stations • Safer and more direct walking routes to public transport stops and stations

Advertising was done predominately on social media through Instagram, Twitter, Facebook and LinkedIn. Information about the survey was shared on the social media pages of two queer organisations, Pride Pledge and Rainbow Pride NZ, as well as the New Zealand Young Greens Instagram page. Information was also reshared from the researcher's social media accounts by queer local activists and activism groups. In addition, physical posters were displayed around tertiary campuses in the target cities. Advertising was targeted at queer people specifically, but open to all genders and sexualities. This led to a biased sample being collected which favoured queer people. In total, before cleaning, there were 421 survey responses with half the participants identifying as heterosexual or straight people, and the rest identifying as having a non-heterosexual identity. This biased sample is useful in providing a sufficient sample size of queer people for comparison with straight people.

Following collection, the data was cleaned. This involved discarding duplicate responses and any incomplete responses and removing identifying data (such as IP addresses) from the responses. Following cleaning, there were 347 valid responses. The data was then analysed using a combination of Microsoft Excel and statistical analysis software R. Descriptive statistics were generated using Excel to understand the demographic that had completed the survey. Two main groups were defined for comparative analysis. These were 'straight' which included people who selected 'heterosexual or straight' as their only sexuality; and 'queer' which included people who selected at least one non-heterosexual identity[1]. Respondents who selected only 'questioning or unsure' were excluded from the analysis. Comparisons were then made between these two groups to understand general sexuality-based differences, with a

[1] Non-heterosexual identities included: asexual, bisexual, gay, lesbian, takatāpui, or queer. Participants were also given the option to provide their own sexuality descriptor which were included in the non-heterosexual group.

focus on where queer people may be experiencing disproportionate negative outcomes. This comparison was carried out using two sample t-tests performed using R software. The mean responses to each question were compared between the two groups. P-values were used to understand where the differences were statistically significant. Sub-groups were also identified to understand differences based on ethnicity, gender, disability, and whether a participant was trans. The same process was used to compare these groups using R.

This research aimed to allow queer people to self-identify as much as possible due to its importance to queer people (Weintrob et al. 2021). In studies of queer people's experiences of public transport, it is common for participants to self-identify their sexuality or gender (Lubitow, Rainer, and Bassett 2017; Lubitow et al. 2017; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022). This research assumed this approach by providing open-field answer boxes for respondents' gender and sexuality in addition to tick boxes for more common sexualities. One drawback of the research was that the sample size of many sexualities was not large enough for individual comparison of each sexuality which required the combining of all non-heterosexual identities into a single group. This prevents a more nuanced examination of the experiences people have based on their sexuality. For example, asexual experiences are likely to be different to bisexual experiences which would be different again from lesbian experiences. Further research with larger samples of each sexuality would be needed to overcome this limitation.

A second drawback is the sampling method, which was non-random, meaning some people were more likely than others to volunteer to complete the survey. This could have led to people who had stronger opinions than the general public participating in the survey which could have affected the results. However, this likely occurred for both straight people and queer people, so it is not likely to have caused differences between the groups which do not exist in the wider population. The sampling method may have contributed to the low ethnic diversity among survey participants which reduced the ability to compare between ethnicity groups. For these two reasons, this study should be considered an initial examination of queer experiences and more research should be conducted for a more detailed understanding of the differences within the queer community.

3.3 Positionality

Queer literature highlights the importance of addressing author positionality and how it may influence research (Reddy-Best and Olson 2020; Weintrob et al. 2021). This brief section addresses the author's own identity, experiences, biases and privileges, and how these may

affect the research. I am a relatively 'out', Pākehā, non-disabled queer femme, I do not identify as trans. I also work as a transport planner for a professional services consultancy. My interest in this topic combines my personal identity and my profession. After two years of working in transport, I have noticed a lack of research, policy and interventions which consider my community which sparked the idea for this research. I see transport as an important means for improving people's quality of life and believe that affordable and convenient public transport should be accessible to all people.

In this research, I am both an insider and an outsider (de Vries 2015). My queer identity gives me a commonality and some shared experiences with my participants. However, my work as a transport planner and other aspects of my identity may make me an outsider to participants. I have never experienced discrimination or harassment on public transport because of my queerness, but I have experienced these things in other contexts. My combined identity and experience give me queer cultural fluency which may make it easier for participants to share their stories with me, but also enough distance from the topic that my research will not be clouded by my own experiences.

4 Results

This section presents the results of the online survey. The results are organised around the four main sections of the survey: demographic data; the factors which enable or prevent people from using public transport; experiences of discrimination and harassment; and perceptions of safety interventions. The key results of this study centred around public transport usage patterns, experiences of discrimination and harassment while using public transport, and perceptions of potential safety interventions to address discrimination and harassment.

4.1 Demographic data

This section explores the demographic data collected in the first part of the survey. The collection of this data also enabled for building an understanding of who completed the survey as well as a comparison between different groups. Overall, the data collected is representative of the wider population and has rich demographic information that allows direct comparison between groups. The data favours gender and sexuality minorities which allows for detailed analysis to understand the experiences of queer people with some intersectional analysis.

In total, there were 347 valid responses to the online survey. The majority of these responses were from public transport users in Auckland (50%), Wellington (37%), Hamilton (13%), and others who did not specify the city where they use public transport (21%). This roughly correlates to the size of each city and public transport ridership, as, of the three primary cities in this survey, Auckland has the largest population, Wellington has a mid-sized population with high rates of public transport use, and Hamilton has the smallest population and the lowest rates of public transport use.

As shown in Figure 3, the survey respondents identified with a diverse range of sexualities. 'Heterosexual or straight' and 'non-heterosexual' each made up half the responses. The most common identities in the non-heterosexual group are 'bisexual' (22%) and 'queer' (22%). Ten of the 18 respondents who selected 'Another sexuality' specified their sexuality as being pansexual. This sample has a significantly higher representation of non-heterosexual people than exists in the wider population which is 3.7% of adults in Aotearoa New Zealand (Stats NZ 2021). This is to be expected as the advertising was targeted toward queer people as the interest group of this research. Although not representative, these data allow for a robust analysis of minority sexualities which may not have been possible if the sexuality data were representative of the total population in terms of sexuality.

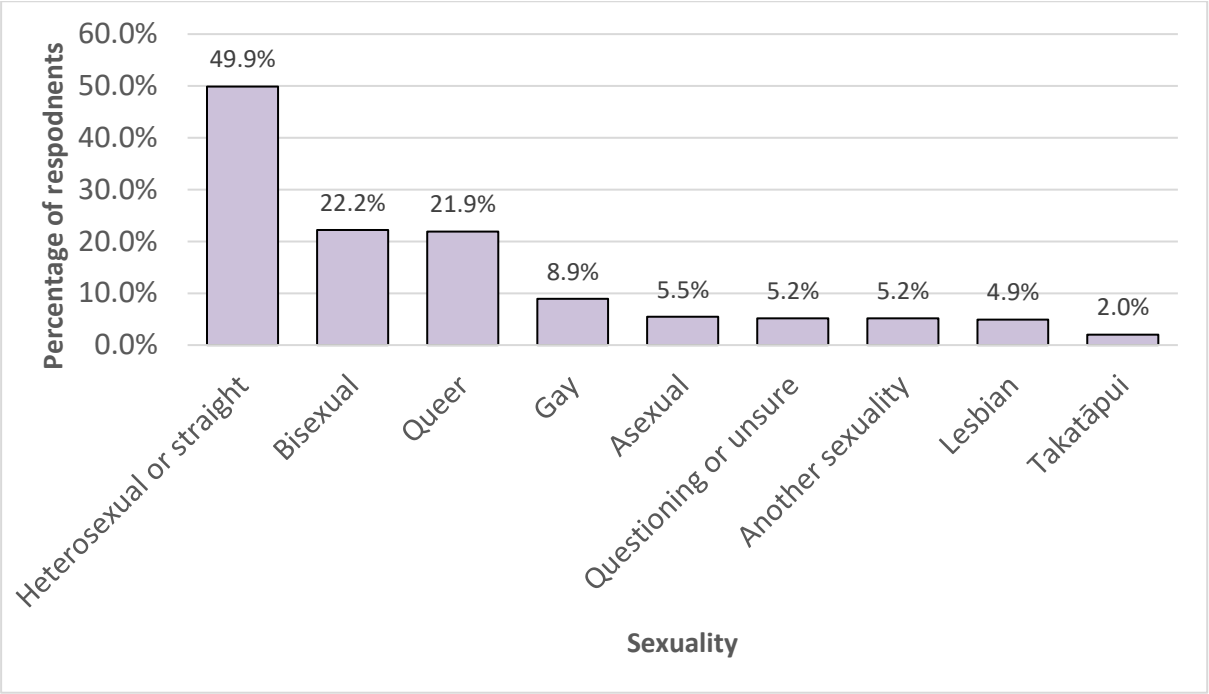

Figure 3 Sexuality of respondents[2]

A range of gender identities was present in the survey respondents. The most common was 'woman' (55%), followed by 'man' (29%) and 'nonbinary' (12%). Three respondents selected 'takatāpui', and another ten provided a gender other than the specified options, of which 'genderqueer' was the most common. 40 of the respondents were trans, while 15 were unsure if they were trans, and the balance was not trans. This is a much higher than the national proportion of trans and nonbinary people in Aotearoa New Zealand which is 0.8% of adults (Stats NZ 2021). This over-representation of women, nonbinary and trans people is possible because these groups are likely to be interested in the topic due to the link between gender and negative experiences of public space and public transport (Weintrob et al. 2021; Loukaitou-Sideris and Ceccato 2022). Although not representative, these data allow for a more robust analysis of minority genders which may not have been possible if the gender data were representative of the total population.

In terms of ethnicity, most respondents were European / Pākehā (88%). The next most common responses were Māori (9%), and Asian (8%). This sample is skewed towards European / Pākehā who make up 70% of the country's total population, while Māori and Asian people make up 17% and 15% of the total population respectively (Stats NZ 2020). This is a limitation as the ethnicity profile of the sample does not reflect the wider population, this

[2] Totals do not add to 100% as respondents could select more than one sexuality.

prevents a robust analysis of experiences based on ethnicity. Some comparisons are possible between European / Pākehā people and the remaining ethnicities as a group, however, this approach has less nuance than being able to compare individual ethnicity groups with the whole sample.

Concerning income, queer participants had a lower mean income than straight participants. Straight participants had a mean income of between $48,001 and $70,000 which reflects the national mean of $61,800 (Stats NZ 2022). The mean income of queer participants was lower at between 14,000 and $48,000. This is reflective of national statistics which show that queer people have a lower mean personal disposable income than straight people (Stats NZ 2021). When it came to disability status, 4% of straight participants identified as a disabled person, compared to 25% of queer participants. It is estimated that 24% of the entire Aotearoa New Zealand population is disabled, however, queer people are overrepresented in disability statistics in nearly every age group (Stats NZ 2021). Overall, this sample provides a good representation of income and disability amongst queer people which will allow for a strong analysis of the different experiences of queer people.

4.2 Public transport use

The second part of the survey queried participants' use of public transport. This included questions about how often participants use public transport, why they use it, and what prevents them from using it more often. These data offer an understanding of the factors which make public transport attractive and accessible to queer people. It also provides information about the aspects of public transport which make it less attractive or reduce its accessibility to queer people. Specifically, this section compares queer participants to straight participants in order to understand what unique experiences queer people have that are different to those of the general population.

The survey suggests there is little difference in how often queer participants and straight participants use public transport ($p>0.05$). However, there is variation in some of the reasons why the two groups use public transport. Queer participants and straight participants alike said that environmental and affordability reasons were very important to their decision to use public transport. Responses differed for the remaining reasons with queer participants placing greater importance on not having a driver's licence ($p<0.01$) and having no other transport option ($p<0.01$) than straight participants. Straight participants placed greater importance on the convenience of public transport than queer people ($p<0.01$). This indicates that queer

people disproportionately experience negative outcomes such as little transport choice and a lack of ease in accessing public transport.

The survey also investigated the reasons participants had for not using public transport more frequently. Queer participants were more strongly affected than straight participants by the negative aspects of public transport. For example, queer participants rated the expense of public transport ($p<0.01$), a lack of accessible options ($p<0.01$), and not feeling safe on public transport ($p<0.01$) as more important than the straight participants did. There were differences among queer participants, with queer disabled participants placing even greater importance on a lack of accessible options reducing their public transport use than non-disabled queer participants ($p<0.01$). A possible explanation which can be drawn from responses to other questions in the survey is the differences in rates of disability between the two groups. Just 4% of straight participants identified as disabled, compared to 25% of queer people. Additionally, existing literature reports that disabled queer people face worse transport outcomes than non-disabled queer people (Lubitow, Abelson, and Carpenter 2020). There were also differences between the queer participants based on gender. When compared to queer men, queer women ($p<0.01$) and queer nonbinary people ($p<0.01$) were less likely to feel safe on public transport. This reflects the international literature which shows that women and nonbinary people generally feel less safe than men on public transport due to a culture of harassment and cat calling, largely upheld by men (Loukaitou-Sideris et al. 2020; Loukaitou-Sideris and Ceccato 2022).

There was no sexuality-based difference in how important the long journey time on public transport was to participants. Queer and straight participants alike said this was their most important reason for not using public transport more often ($p>0.05$). These data suggest that other than journey time, queer people are disproportionately affected by negative aspects of public transport. Interestingly, queer participants were more likely than straight participants to say they had no reason to make any more trips by public transport ($p<0.01$) which could suggest they are more likely to be having their transport needs met. However, less than half of the queer participants said they had no reason to make more trips, indicating that there is a lot of unmet transport need amongst queer people and improvements to public transport are needed to address this.

4.3 Experiences of discrimination and harassment

The third part of the survey investigated participants' experiences of discrimination and harassment. This included questions about how frequently participants experienced either of

these things, where they occurred and who the source of the discrimination and harassment was. This section compares the rates of discrimination and harassment of queer participants and straight participants to understand whether queer people may be experiencing disproportionate negative outcomes.

Queer participants reported higher rates of discrimination than straight participants ($p<0.01$). Figure 4 shows that a much higher proportion of queer participants (23%) reported experiencing discrimination at least 'sometimes' when compared to straight participants (5%). There was also a gendered difference in rates of discrimination with queer women experiencing higher rates than queer men ($p<0.01$). This is consistent with international literature which suggests that queer people generally experience higher rates of discrimination (Transport for London 2019; Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022).

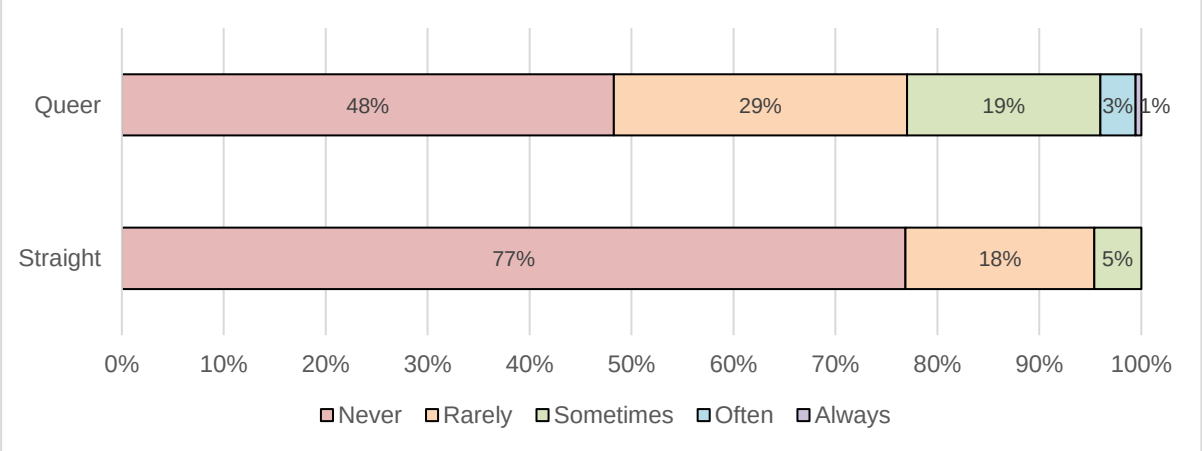

Figure 4 Frequency of discrimination when using public transport for queer and straight people

Participants who reported discrimination were asked follow-up questions about who the source of discrimination was. Of the queer participants who reported discrimination, the majority said this came from other passengers (76%), or people passing by (66%), with a smaller amount coming from transport staff (29%). Many queer participants experienced discrimination from multiple sources. This reflects other literature in the field which suggests that other passengers and people passing by stops are common sources of discrimination in the context of public transport (Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). In contrast, of the straight participants who experienced discrimination, a much higher proportion reported discrimination from other passengers (70%), with less discrimination from people passing by (43%) or transport staff (25%). This has

implications when investigating solutions for reducing discrimination against queer people, particularly in terms of preventing discrimination from people passing by public transport stops or stations.

Participants who reported discrimination were also asked where the discrimination occurred. There was a range of locations where queer participants experienced discrimination, as shown in Figure 5. The most common discrimination locations were buses and bus stops and walking to or from public transport. Bus terminals, trains and trains were also common locations of discrimination. A smaller amount of discrimination was reported on ferries and ferry terminals. Many of the queer participants had experienced discrimination in multiple locations.

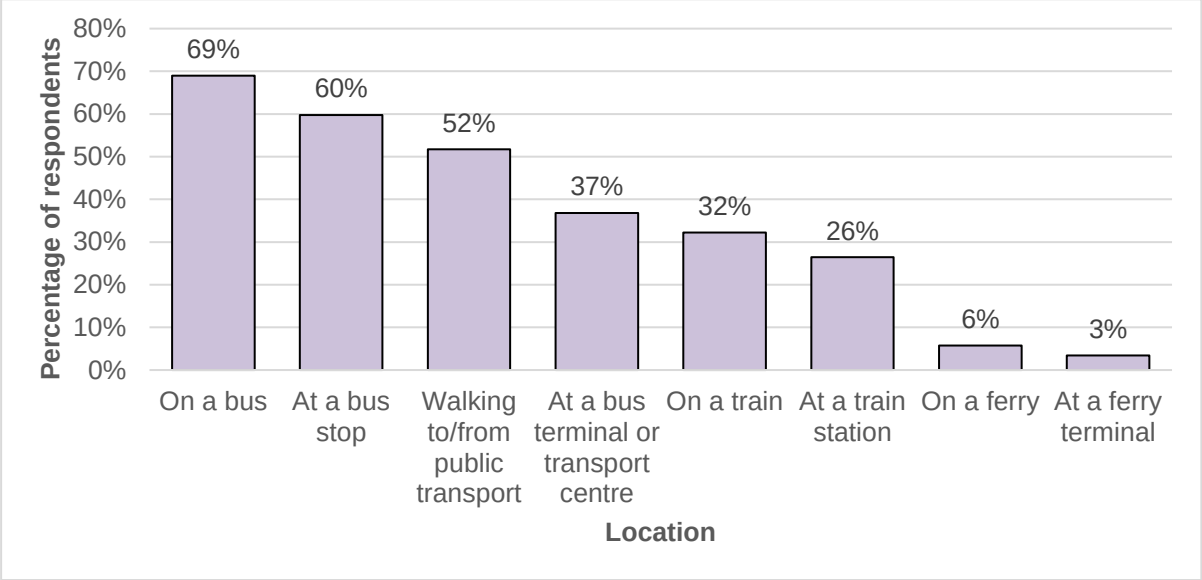

Figure 5 Location of discrimination experienced by queer participants

When it comes to harassment rates, the disparity between queer participants and straight participants is less stark than for discrimination rates. However, queer participants still reported higher rates of harassment than straight participants ($p<0.01$). Figure 6 shows that a similar proportion of queer people and straight people 'never' experience harassment, at 44% and 49%, respectively. However, a greater proportion of queer people (22%) experience harassment at least 'sometimes' compared to straight people (12%). This is unexpected as the literature suggests that queer people experience much higher rates of harassment while using public transport (Weintrob et al. 2021). Again, there was a gendered difference in rates of harassment with queer men experiencing less harassment than queer nonbinary participants ($p<0.01$) and queer women participants ($p<0.01$). This gendered difference is also reflected in

the literature which suggests men are the least likely to experience harassment while using public transport (Loukaitou-Sideris et al. 2020; Loukaitou-Sideris and Ceccato 2022).

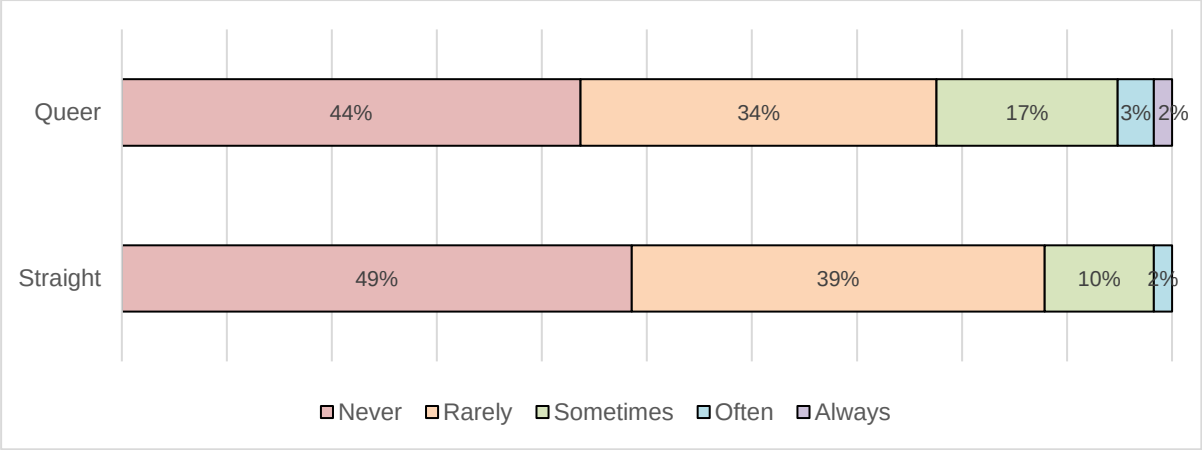

Figure 6 Frequency of harassment when using public transport for queer and straight participants

Participants who reported harassment were asked follow-up questions about who the source of harassment was. The sources of harassment followed a similar pattern to that of discrimination with the majority of queer participants saying harassment came from other passengers (80%) or people passing by (65%), with a smaller amount coming from transport staff (13%). Many queer participants experienced harassment from multiple sources. Again, this reflects international literature which reports other passengers and people passing by stops are common sources of harassment (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Shakibaei and Vorobjovas-Pinta 2022). There was also a clear difference in the source of harassment reported by straight participants. The majority of straight participants said harassment came from other passengers (88%), with less from people passing by (51%), and a small amount from transport staff (4%). This influences the types of interventions which could reduce harassment of queer people, particularly because of the disparity in harassment from transport staff.

Participants who reported harassment were also asked where the harassment occurred. There was a range of locations where queer participants experienced harassment as shown in Figure 7. Most harassment of queer participants was associated with buses and bus stops or walking to and from public transport. Harassment was also common on trains and train stations. Queer people reported less harassment on ferries or at ferry terminals.

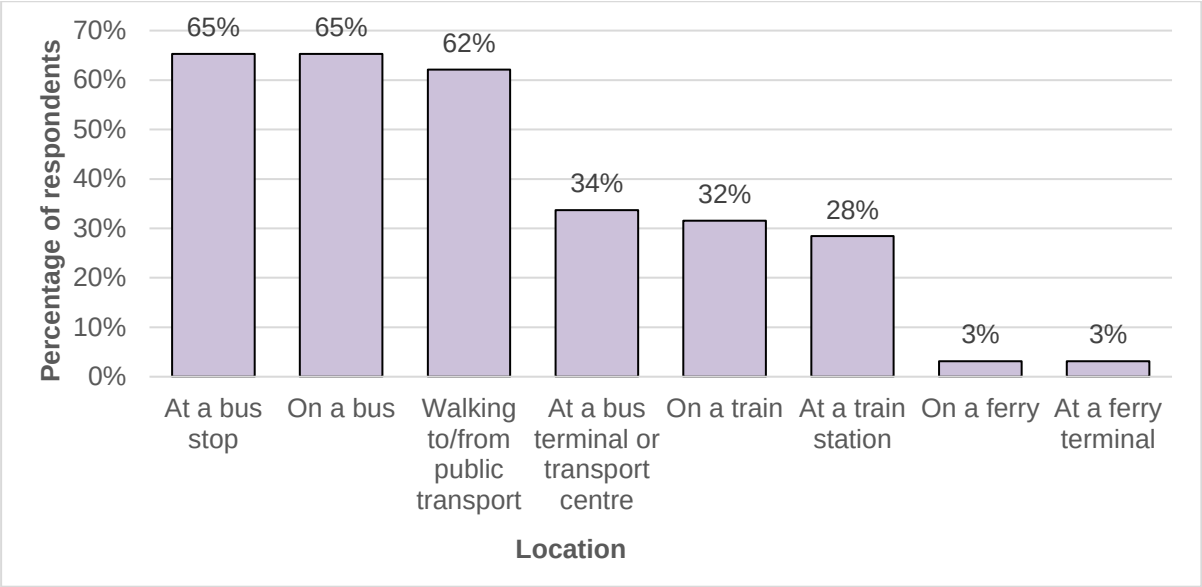

Figure 7 Location of harassment experienced by queer participants

4.4 Perceptions of safety improvements

The final section of the survey explored participants' perceptions of potential safety interventions. This included interventions designed to both prevent discrimination and harassment from occurring, and to reduce queer people's exposure to it. Participants used a Likert scale to indicate the degree to which they agreed each intervention would make them feel safer while using public transport, the lower the mean, the higher the rate of agreement. This section explores the queer participants' perceptions of each safety intervention and identifies where their perceptions differ from those of the straight participants. These differences are important as the literature suggests that some interventions which improve the feelings of safety of straight people may negatively affect feelings of safety for queer people (Weintrob et al. 2021).

Queer participants tended to rate safety interventions that would reduce their exposure to discrimination or harassment highly. On average, queer participants strongly agreed that improvements to public transport service frequency; better lighting at stops and stations; and safer and more direct walking routes to public transport would improve their feelings of safety while using public transport. Although straight participants also rated these three interventions highly, the perceived safety improvements were slightly higher for queer participants when it came to better lighting ($p<0.01$) and safer or more direct walking routes ($p<0.05$). There was no sexuality-based difference in perception of improved frequency as a safety intervention ($p>0.05$). Figure 8 illustrates the similarities and differences between queer and straight participants' perceptions of these interventions.

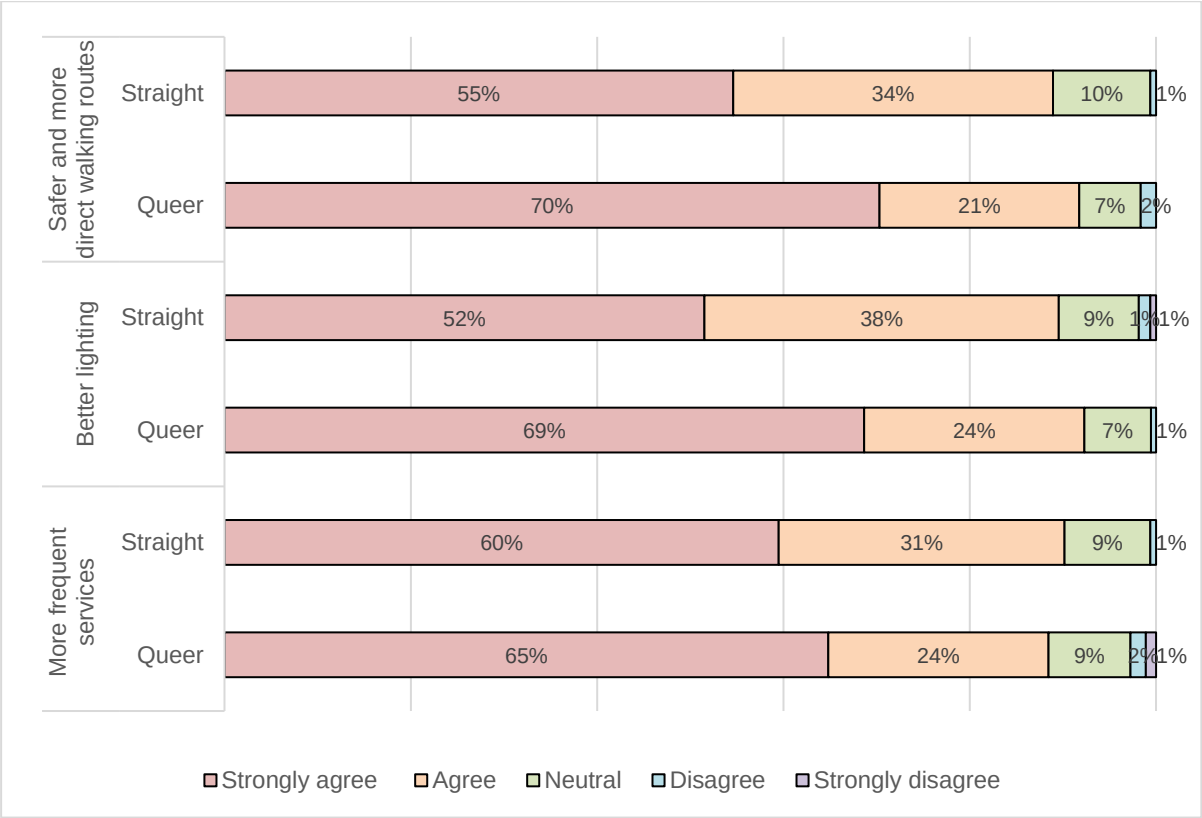

Figure 8 Participant perceptions of safety interventions to reduce exposure to discrimination and harassment

Queer participants also perceived interventions aiming to prevent discrimination or harassment from occurring positively. On average, queer participants strongly agreed that diversity and inclusion training for transport staff would improve their safety. They also agreed that more inclusive messaging / signage would improve their safety. However, these two interventions did not score as highly as the interventions shown in Figure 8 that would reduce exposure to discrimination or harassment. In general, queer participants had more favourable perceptions of diversity and inclusion training and inclusive messaging than straight participants ($p<0.01$), as shown in Figure 9. These findings are reflective of existing literature which proposes training for staff as well as proactive or inclusive messaging aimed at improving the safety of queer people (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022).

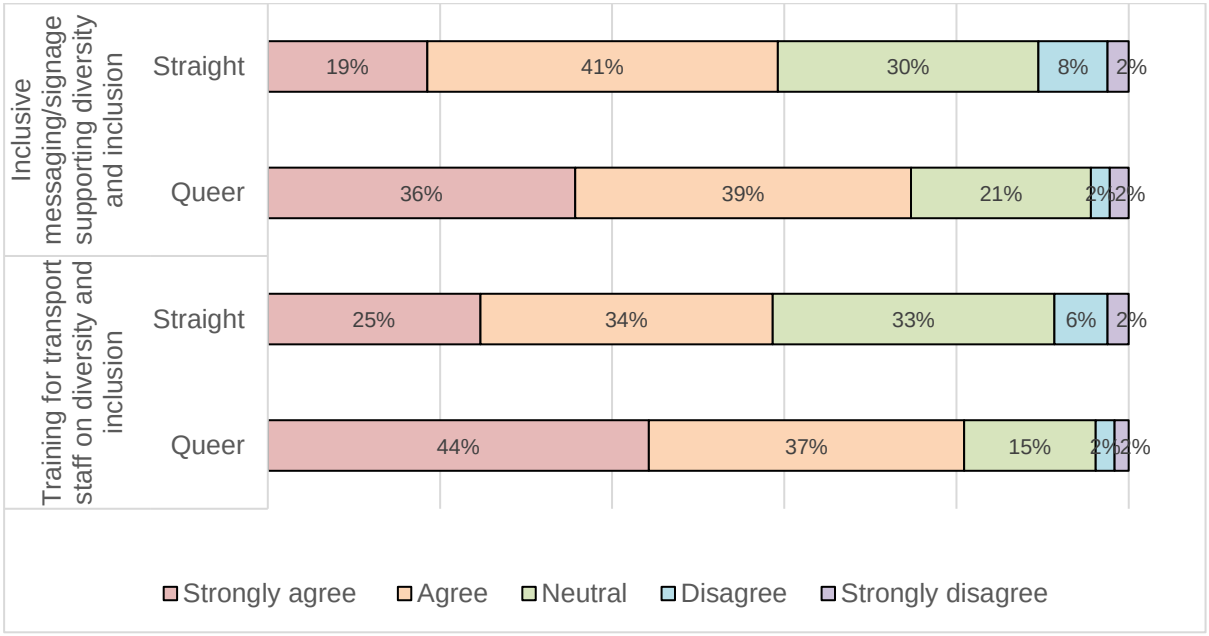

Figure 9 Participant perceptions of safety interventions to prevent discrimination and harassment

Police presence on public transport was the only intervention not considered to improve safety by either the queer participants or the straight participants. On average, queer participants disagreed that police presence would improve their feelings of safety while straight participants had a more neutral view ($p<0.01$). This reflects existing literature on queer people and public transport which suggests police officers can make queer people feel unsafe or unwelcome on public transport (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020), but differs from Shakibaei and Vorobjovas-Pinta (2022) who found support among queer people for police patrols. Figure 10 illustrates the strong difference in perceptions of police presence between queer participants and straight participants.

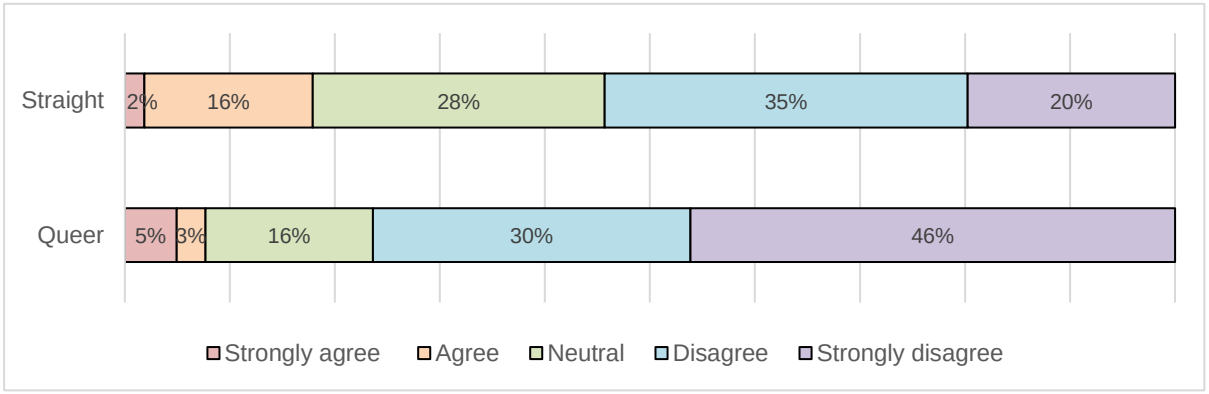

Figure 10 Participant perceptions of police presence on public transport as a safety intervention

5 Discussion

There are two issues central to this research which investigates access to public transport for queer people. First, understanding the elements of public transport that influence access for queer people, and second, understanding the opportunities planners have for making public transport more attractive and accessible to this group. To address these issues, this discussion begins with an exploration of the different elements of public transport that reduce its attractiveness and accessibility for queer people. This is followed by a discussion of the elements which encourage public transport use by this group. Interwoven through these two sections is a discussion about the opportunities planners have to either improve the attractiveness and accessibility of public transport, or to leverage existing elements which already encourage queer people to use public transport. Together, this discussion provides new insights and addresses the overarching question of this thesis which is '*how can access to public transport be improved for queer people in Aotearoa New Zealand?*'.

The results show high rates of unmet need amongst existing public transport users regardless of sexuality. Overall, similar proportions of queer and straight participants said that they would like to use public transport more often, but various reasons prevent them from doing so. This suggests that queer participants' mobility is not disproportionately impacted when compared to the straight participants. Despite the contrary nature of this result, it is supported by existing literature which has found that queer people persevere in using public transport in the face of negative experiences (Weintrob et al. 2021). This is likely due to the transit dependence described by J. Walker (2014). Although rates of unmet need are similar amongst queer and straight participants, the rest of the results show that queer people experience more negative outcomes while using public transport. This ultimately reduces the attractiveness and accessibility of public tranpsort to queer people indicating they experience greater difficulty in attaining similar rates of public transport use as straight people.

5.1 What makes public transport less attractive and accessible to queer people?

There are several factors which reduce the attractiveness and accessibility of public transport to queer people. This section begins with exploring the self-reported accessibility of public transport by queer people in the survey. It then moves on to discuss other influences uncovered in the survey as they relate to the seven transport demands set out by J. Walker (2014). The survey shows that the demands 'it respects me' and 'it is a good use of my time' are of particular relevance to queer people in Aotearoa New Zealand.

5.1.1 Self-reported public transport accessibility

The survey results show that public transport is not accessible to everyone as there is a disparity in who has accessible public transport options. When examined by queerness and disability, there were clear differences in who had accessible public transport options near their home and destinations. When identifying which elements of public transport prevented them from using it more often, disabled queer participants placed greater importance on a lack of accessible options than non-disabled queer participants did. Queer people and straight people may also have different needs from public transport which affects their perceptions of accessibility. The literature sheds some light on this issue. Lubitow, Rainer, and Bassett (2017) explore accessibility for non-disabled queer public transport users and define a lack of accessibility as a mismatch between people's needs and the service that is available. For example, a lack of accessibility outside of disability access could be explained by poor service during non-peak hours which makes public transport inaccessible to people who work a job with hours outside of the typical '9 to 5' (Lubitow, Rainer, and Bassett 2017). Lubitow, Abelson, and Carpenter (2020) build on the idea of a needs / service mismatch to say that for gender minorities, safety from violence is a need which is not always met by existing services. Queer participants were less likely than straight participants to feel safe (this is discussed further in Section 5.1.2) so are likely to be experiencing this needs / service mismatch. These are just two examples which could explain why queer participants may experience a lack of accessible options, even if they are non-disabled. This idea that accessibility is more complex than simply a consideration of disability is important for planners to bear in mind when reflecting on ways to improve the accessibility of public transport for queer people.

People who are both queer and disabled experienced public transport in different ways. Queer disabled participants were affected by a lack of accessible options more than straight disabled participants. For some participants, discrimination related to their queerness and disability

compounded, resulting in negative experiences. For example, one disabled takatāpui participant said:

> *"People generally judge me by sight a fat afab able-bodied neuro-typical wild-haired Pākehā, so aren't necessarily the kindest or most understanding when I'm overstimulated, or having a chronic pain blow up & need the bus lowered, or when I cant hear them telling me what stop but their patience wears thin when you ask twice."*[3]

This participant described how people's perception of them, based on the physical presentation of their queerness, meant they were treated a certain way. The participant felt this then made others less tolerant of their accessibility needs which could affect their overall experience while using public transport.

There are opportunities for planners to make public transport more accessible to the people who already live in proximity to public transport stops and stations. The most comprehensive study of transport and disabled people in Aotearoa New Zealand (Doran et al. 2022) recommends a systematic approach to improving accessibility involving proactively engaging with disabled people and regularly monitoring 'trips not made' due to accessibility shortcomings. This approach could be adapted for use for improving access for disabled and non-disabled queer people alike. Planners should engage directly with a wide range of queer people. This will provide a more detailed and nuanced understanding of how disability and queerness interact, as well as how to best address the accessibility shortcomings of the public transport system.

In summary, perceptions of accessibility are a crucial issue affecting queer people's use of public transport. The survey results show that queer participants are less likely to consider their local public transport services accessible. This is despite there being no sexuality-based difference in participant proximity to public transport. Differences in accessibility are potentially being influenced by the significant disparity in disability rates between the queer participants and the straight participants. Outside of disability, queer people may be experiencing a needs / service mismatch which reduces the accessibility of public transport. To overcome the lack of accessible options for queer people, planners should take a systematic approach to improving accessibility. This requires proactive engagement with a diverse range

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[3] This participant uses the acronym "AFAB" which stands for "assigned female at birth". This is typically used by trans people to describe the sex appointed to them when they were born.

of queer and disabled people and ongoing measurement of 'trips not made' because of accessibility challenges.

5.1.2 Feeling unsafe on public transport

Feelings of safety are a core part of attractive and accessible public transport systems. The literature shows that if queer people do not feel safe while using public transport, they either do not use it or they endure feeling unsafe to the detriment of their health and wellbeing (Weintrob et al. 2021). Survey respondents confirmed that not feeling safe was an important reason why they did not use public transport more often. There was a clear difference based on sexuality with queer participants having a lower mean, indicating not feeling safe is of greater importance to queer participants than it is to straight participants. This finding contributes to the literature which to date has tended to focus on the experiences of queer people, without comparing relative levels of feelings of safety between queer and straight people using public transport. This is significant as it indicates queer people should be an important group for planners seeking to improve safety for public transport users.

Queer participants generally reported lower feelings of safety while using public transport, however, there was variation within this queer sample as to who felt the least safe. Queer men reported much higher feelings of safety compared to both queer women ($p<0.01$) and nonbinary participants ($p<0.01$). This differs from the findings of Weintrob et al. (2021) who found lower feelings of safety on public transport among gay men than among lesbian women. However, in the context of other literature, the findings of this research are not surprising. Queer women and nonbinary people experience multiple marginalisation due to their gender and sexuality, which could lead to 'multiple victimisation' as described by (Meyer 2012). Women and nonbinary people are also at higher risk of harassment or cat calling than men which could negatively affect their feelings of safety (Lubitow et al. 2017; Loukaitou-Sideris et al. 2020; Loukaitou-Sideris and Ceccato 2022). This finding is important in the context of improving feelings of safety while using public transport as it shows a nuanced approach is needed which considers different gendered experiences, as well as sexuality-based experiences.

Harassment and discrimination reduce safety

To understand how to make public transport safer for queer people, it is first necessary to understand why many queer people do not feel safe on public transport. A likely explanation for this phenomenon is the high rates of discrimination and harassment queer people experience when using public transport. The survey investigated the frequency at which queer

participants and straight participants experienced both discrimination and harassment. The results show that queer people experience discrimination at much higher rates than straight people. There is less difference between the rates of harassment of queer and straight participants, however, queer participants still experienced more harassment. However, for both groups, harassment was more common than discrimination. One nonbinary survey participant described how hearing negative comments from other passengers directly affected how safe they felt on board:

> *"Someone was repeatedly saying "kill all homosexuals and their families". Wasn't necessarily directed at me but not very safe."*

In this case, the participant witnessed anti-queer behaviour from others, without it being directed at them and then felt less safe. This phenomenon exists in the literature with Weintrob et al. (2021) reporting several instances of queer people witnessing anti-queer behaviour without it being directed at them and then feeling unsafe.

The idea that feelings of safety are tied to rates of harassment is supported by gendered data about queer survey participants' experiences of harassment. The relationship between experiencing or witnessing harassment and feeling less safe is well supported by the literature. Yavuz and Welch (2010) and (Loukaitou-Sideris et al. 2020) show the relationship between harassment and feeling vulnerable for women. Both Lubitow, Abelson, and Carpenter (2020) and Lubitow et al. (2017) recognise this relationship for trans and gender non-conforming public transport users and Weintrob et al. (2021) explore it for queer public transport users generally. Compared to queer men participants, queer women ($p<0.01$) and nonbinary participants ($p<0.01$) reported higher rates of harassment. The nonbinary participants reported the highest rates overall with a mean answer of 'often'. This correlates with the data about not feeling safe on public transport whereby queer men felt the safest, followed by queer women, and then queer nonbinary people. In addition, contrary to the literature (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020), there was no difference in the rates of harassment of trans people compared to cisgender queer people ($p>0.05$) and no difference in the feelings of safety between these two groups ($p>0.05$). Overall this correlation could suggest that levels of harassment inform how safe people feel on public transport.

Public transport safety can be improved through targeted interventions

During the survey, participants' perceptions of safety interventions were tested. These safety interventions were drawn from the literature and selected for their potential to reduce

exposure to discrimination and harassment or to prevent it from occurring. Improving frequency is one way to provide safety benefits for queer people. This is because frequency improvements reduce the amount of time people must wait at a stop or station before their service arrives. This is particularly important if a person misses the service they wanted to catch and must wait for the next one. This leaves the person exposed to harassment from people passing by for a long time, particularly outside of peak hours when services are less frequent. In the survey, the most common place queer participants reported experiencing harassment was at a bus stop, 65% of queer people who reported harassment experienced it in this location. Improving frequency is likely to reduce exposure to harassment at bus stops.

The potential safety benefits of improving public transport frequency throughout the day were highlighted by the detailed responses of some queer survey participants. One in particular, a queer, disabled, nonbinary participant, described how their sexuality and gender interact with the public transport service frequency in Hamilton to reduce their safety and wellbeing:

> *"I would also say that the transport system is not set up to ensure my safety or wellbeing holistically. Across my gender and sexuality this looks like not optimising the network to run reliably or frequently, acknowledging that violence and harassment from the public is a thing that does occur and I have previously been stranded in the dark, in winter, at night when the last bus never turned up and I needed to walk from the Hamilton CBD to Bader alone."*

The participant's past experiences with harassment related to their gender and sexuality contributed to low feelings of safety walking home at night when their bus failed to show up. In the scenario they describe, they did not experience discrimination or harassment from one of the sources asked about in the survey. Instead, they faced institutional discrimination which put them at greater risk of negative outcomes than they would be if they had been straight, cisgender, male and non-disabled. In situations like these, high-frequency public transport with wider hours of operation could have prevented the participant from feeling stranded and exposing them to harassment during the walk between the Hamilton city centre and Bader, a distance of nearly 4km. Additional benefits of improving frequency, such as achieving demands for public transport which makes good use of users' time and gives users the freedom to change their plans are discussed below in Section 5.1.3.

A second way for planners to improve the safety of queer people is to improve the safety and directness of first-mile and last-mile walking routes to public transport. This falls outside of J. Walker's (2014) demands for public transport but is still important to the overall accessibility

of public transport. Walking route safety is important as 62% of queer participants who experienced harassment said they had experienced it while walking to or from public transport. For some participants, the walk between public transport and their destination was the main source of fear during their journey, particularly at night. One participant, a gay man in Wellington, said:

> *"Generally I feel safe on public transport, but walking to or from the stop at night can be a bit unnerving, especially as part of that walk is down a long alleyway with no visibility from nearby houses or the street"*

For this participant, the walk home to or from public transport at night was the only part of their journey where they felt unsafe. This excerpt highlights the need for walking routes which feel safe no matter the time of day or night they are being used. The link between feelings of safety and improved walking routes is also shown through the survey data; 92% of queer participants agreed that this would help them to feel safer. Planners should work to create safer routes to and from public transport but should do so in a nuanced and place-specific way. This is important as traditional crime prevention through environmental design principles have been criticised as being inappropriate for historically marginalised groups who are harmed by the constant surveillance they experience in public spaces (Azzouz et al. 2021; Cunningham 2022). Updating crime prevention through environmental design principles which are appropriate for queer communities is an area of future research for planners which will help inform safety improvements for people travelling between public transport and their destinations.

A final opportunity for planners to improve safety for queer people using public transport is to address discrimination while on board a service or waiting at a stop or station. The survey showed that 29% of queer participants had experienced discrimination from transport staff, while 76% experienced discrimination from other passengers, and 66% from people passing by. One way to address discrimination from transport staff is through inclusion and diversity training. Of queer survey participants, 81% agreed this would help them to feel safer on public transport. While training is unlikely to eliminate all discrimination, it has the potential to at least reduce it. An additional opportunity to address discrimination lies in using inclusive imagery and messaging in public transport advertising, an intervention which was widely supported by queer survey participants. This could include explicit messaging intended to deter harassment as well as subtle symbols and imagery in posters or other advertising.

Policing is not an appropriate safety intervention for queer communities

One intervention which is unlikely to improve safety for queer people is the presence of police on public transport or at stops and stations. This intervention is sometimes proposed to promote the safety of women while using public transport, however, there is no consensus about the effectiveness of this approach (García-Jiménez et al. 2020; Loukaitou-Sideris and Ceccato 2022). The survey responses in this study suggest that policing public transport will not be beneficial to queer people or women in the Aotearoa New Zealand context. Only 8% of queer participants and 11% of all women participants agreed that police presence would make them feel safer on public transport. An overwhelming majority of queer people strongly disagreed that police presence would make them feel safer on public transport. Additionally, several queer participants used the open field comment box at the end of the survey to express that police presence would actively make them feel unsafe. For example, one trans genderqueer lesbian participant said:

> *"Please don't encourage police. That makes me fear more."*

Fear of the police reflects other literature which found that many queer people are hesitant to rely on police due to a history of police mistreatment and violence against the queer community (Lubitow, Rainer, and Bassett 2017; Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020). Some literature suggests that fear of the police is a more important issue for queer people of colour than it is for white or European queer people (de Vries 2015). However, literature specific to the public transport context suggests that queer people, regardless of ethnicity, respond negatively to the presence of police on public transport (Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020). The results of this study support the findings of Lubitow, Abelson, and Carpenter (2020) and Lubitow et al. (2017) as there was no difference between how queer participants of colour rated police presence as a safety intervention compared to how the queer European / Pākehā queer participants rated it. One reason for the negative perceptions of police as a safety intervention is that police are seen to profile queer people and people of colour, rather than support these groups. For example, one European / Pākehā bisexual participant said:

> *"Most of the time when I've seen police at train stations they've been harassing non-white teens, not very constructive at all. […] they need to have a specific incident that they are responding to, to actually be useful and not just an additional vehicle for the harassment of passengers."*

Despite not being subject to police profiling themselves, this participant's perception of the police as a safety intervention was negatively impacted by what the participant saw as racial profiling at the train station. This theme was echoed by another European / Pākehā queer participant who said:

> *"[..] implementing police, who are a force of patriarchal and colonial violence, would make me feel less safe. Even as a Pākehā, I have not had positive interactions with the police and would not trust them to intervene appropriately or without violence or discrimination against people of colour, people with mental health or addiction issues, or other marginalised identities."*

Despite not having negative interactions with police related to their ethnicity, this participant had negative experiences with the police related to their queerness and other aspects of their identity. Like the participant who shared the previous quote, witnessing the way police treated other people negatively impacted this participant's perception of police so that they do not feel safe in their presence. Participants did not have to feel at risk themselves to feel unsafe, just the perception that police presence was a threat to other passengers was enough to undermine police presence as a safety intervention.

Police presence on public transport is likely to cause disproportionate impacts for trans people. There was a clear difference between trans and cisgender responses to perceived safety benefits of police on public transport. While everyone generally rated this as not improving their safety, trans participants rated the intervention much lower than cisgender participants ($p<0.01$). This is supported by literature which found that trans and gender nonconforming public transport users are more likely to face negative outcomes where police are present on public transport (de Vries 2015; Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020). Overall, the results relating to police presence clearly show that it is not suitable as an intervention for improving safety perceptions, and in fact may actively reduce queer people's feelings of safety.

Overall, not feeling safe on public transport is a critical issue affecting queer people's access to public transport. High rates of discrimination and harassment reduce queer people's feelings of safety and reduce the accessibility of public transport for this group. The survey results showed that queer women and nonbinary people experience the highest rates of harassment, leading to the lowest feelings of safety among these two groups. There is potential for planners to improve queer people's sense of safety when accessing public transport through a range of targeted measures. These include improving service frequency, improving the safety of first-mile and last-mile walking routes to and from public transport, and addressing harassment

and discrimination on board through inclusion and diversity training for transport staff. Queer participants provided strong resistance to the possibility of police presence on public transport. This intervention was perceived as one which would reduce feelings of safety among queer people, rather than improve it.

5.1.3 Public transport as a poor use of time

To be a genuine alternative to private car travel, public transport should provide competitive travel times and be a good use of user's time. According to the survey results, this is not yet the case in Aotearoa New Zealand. Regardless of sexuality, public transport taking too long was the most important reason why queer and straight participants did not use it more often. This is unsurprising as Aotearoa New Zealand's transport system and urban form are car-centric with journeys taking much longer by public transport than by car. This also reflects international data which suggest travelling by public transport takes 1.4 to 2.6 times longer than travelling by car (Liao et al. 2020). Although there was little sexuality-based difference in how people saw journey time, queer people face disproportionate negative impacts of a long journey time. As discussed earlier, a significant amount of harassment and discrimination of queer people take place at public transport stops or stations, or while on board public transport. Reducing the amount of time spent waiting for, or on board public transport may improve convenience for straight people. However, for queer people, reductions in travel time may be a safety intervention. Planners have an opportunity to achieve this by providing competitive travel times using public transport through frequency and infrastructure improvements. This will improve the overall attractiveness and accessibility of public transport to all users, as well as provide specific benefits to queer people by reducing their exposure to harassment and discrimination.

One way to reduce public transport travel time is to improve frequency, thus reducing the amount of time users must wait for a service. Waiting at a stop or station before making a trip, or during a transfer between services adds a significant amount of time to a journey and leaves queer people exposed to harassment. In this study, just 19% of all respondents said the public transport service they use most often had a frequency of 5-10 mins, but 93% of participants had a stop within a 10-minute walk of their house. This suggests there is a large population who could benefit from frequency improvements at existing stops or stations. Improving frequency to at least every 15 minutes enables a 'turn up and go' service whereby users do not have to check a timetable before travelling as a service is guaranteed within 15 minutes of arriving at the stop. This greatly increases the useability of public transport services and makes them

much more attractive. Additionally, participants strongly agreed that improving the frequency would improve their feelings of safety while using public transport. This study confirms that service frequency presents an opportunity for planners to improve all modes of public transport. This has potential benefits for all public transport users in terms of reducing journey time, as well as safety benefits for queer people from reduced exposure to harassment and discrimination while waiting for a service.

Planners have an additional opportunity to reduce journey time by bus, particularly in cities where congestion causes delays, through the introduction of bus lanes. Bus lanes separate public transport from general traffic thus improving reliability and reducing travel times as buses are no longer delayed by congestion. This makes the bus a more time-competitive mode and the additional reliability improvements have potential safety benefits for queer people who face discrimination and harassment while waiting at bus stops. Bus lanes also have the potential to reduce the amount of time queer people spend on board public transport which could further reduce their exposure to discrimination and harassment.

In summary, long journey times are one of the most important elements of the public transport system which prevents people from using it more often, regardless of sexuality. Planners have an opportunity to improve journey times by improving frequency and by introducing bus lanes. This will create a public transport system with journey times that are more competitive with private car travel, thus improving its attractiveness to all people. Reducing journey times also provides disproportionate benefits to queer people who will experience less exposure to harassment and discrimination.

5.2 What encourages public transport use by queer people?

The survey uncovered several elements of public transport which make it attractive and accessible to queer people. In particular, transit dependence has an important role in causing public transport use, alongside queer people's perceptions of public transport as sustainable. In addition, this section explores affordability as an important reason for queer people to use public transport which indicates the demand 'it is a good use of my money' is being met for most queer people.

5.2.1 Public transport as the only option

Queer people experience high rates of transit dependence, meaning many have no other option but to use public transport (Lubitow, Rainer, and Bassett 2017; Martens 2017). As discussed in Section 2.1, transit dependent people continue to use public transport even if it is

unattractive and has low accessibility because they have no other option (J. Walker 2014). To test rates of transit dependence among people in the Aotearoa New Zealand context, the survey asked participants to rate the importance of having no other transport option using a Likert scale. The mean for queer participants was significantly lower than that of straight participants, indicating this issue is more important to queer people. This suggests that, like overseas (Lubitow et al. 2017), levels of transit dependence are higher amongst queer people than straight people.

One potential reason for the high rates of transit dependence among queer people is the low rates of driver's licensing for this group. Using the same scale, participants were asked to rate the importance of not having a driver's licence in influencing their decision to use public transport. Again, the mean response from queer participants was significantly lower for queer participants than straight participants indicating that queer people rate this as more important. This alludes to lower rates of driver's licencing among queer people which could explain the higher rates of transit dependence. Discussion papers on the state of equity in the Auckland transport system (Burdett and Thomas 2020) and the wider Aotearoa New Zealand transport system (H. Walker 2021) have speculated that queer people are amongst the groups most likely to experience transport disadvantage. However, to date, little primary research has been conducted that focuses on transport for the queer community. The results of this study demonstrate a clear need for further research into this topic to understand why queer people have lower rates of driver's licencing and how queer transport disadvantage fits within the context of the whole transport system.

Overall, the survey showed that queer participants experience relatively high levels of transit dependence. They were more likely than straight participants to say they had no other option but public transport. This appears to stem from low rates of driver's licencing among queer people. This represents an important area of future research to understand queer people's transport disadvantage within the entire transport system, not just within public transport.

5.2.1 Environmental reasons for public transport use

The survey results uncovered reasons queer people have for using public transport outside of J. Walker's (2014) seven demands for public transport. Environmental reasons was the most important factor encouraging public transport use for queer participants. In contrast to the literature, there was no difference in the importance of environmental reasons to queer and straight participants. This is different to studies in the United States which found that gay men and lesbian women are more likely to care about the environment and therefore use public

transport at higher rates as compared to straight people (Klein and Smart 2016; Oreffice and Sansone 2022). The possible explanations for this variation are twofold; differences in the research methods and cultural variations between the United States and Aotearoa New Zealand. The two existing United States studies used nationally representative samples of all people and did not select by commute mode (Klein and Smart 2016; Oreffice and Sansone 2022). This research involved a smaller sample and only included people who use public transport. It is possible that a strong correlation exists between public transport use and caring for the environment, regardless of sexuality, which could account for the difference in findings. Alternatively, the difference in findings could also be explained by cultural differences between the United States and Aotearoa New Zealand in terms of attitudes to the environment. Environmentalism is a core part of Aotearoa New Zealand's national identity (Milfont et al. 2020), and this may transcend sexuality, resulting in different results than seen in the United States. Planners need to be aware that factors outside the transport system itself influence what transport mode people choose as the shift to a low emissions public transport system progresses.

5.2.1 Affordability of public transport

Affordability of transport is an important factor in transport disadvantage. When transport is not affordable, people are disadvantaged because they cannot travel everywhere they need to go or are forced to pay a disproportionate cost for their travel (Lucas 2012). It also becomes an unattractive transport option as users do not feel it is a good use of their money (J. Walker 2014). In this study, two survey questions asked about the affordability of public transport in different contexts. Firstly, in questions about factors which encourage people to use public transport, and secondly, in questions about factors which prevent people from using public transport more often. For some queer participants, the affordability of public transport was a very important reason why they chose to use it. In contrast, for a smaller group of queer participants, the expense of public transport was an important reason why they did not use it more often. This is surprising as queer participants were overrepresented in the lowest incomes groups which suggests they would be more sensitive to the cost of public transport.

There was a link between income and how participants rated the importance of affordability in their decision to use public transport. Queer participants with an annual income of less than $14,000 placed slightly more importance on the affordability of public transport than queer people with an income greater than $14,000 ($p<0.05$). This is unsurprising as it is well-established that people with lower incomes are more likely to be affected by the cost of

transport (Lubitow, Rainer, and Bassett 2017; Martens 2017; Gössling, Kees, and Litman 2022). What is surprising is that there was no income-based difference in how important the cost of public transport was in preventing queer people from using it more often ($p>0.05$). Queer people with an income under $14,000 and over $14,000 both rated cost neutrally in the context of it preventing further public transport use. The positive responses to affordability could be explained by the additional public transport subsidy offered throughout 2022. At the time of the survey, the New Zealand government was offering a 50% reduction in public transport fares to improve affordability in response to a cost-of-living crisis (Waka Kotahi 2022). It is likely that this discount influenced participants' perceptions of public transport affordability. Preliminary research shows that the subsidy resulted in an additional 7% of public transport journeys indicating that there is a link between improved affordability and increased ridership (Magill 2022). Further research is needed for planners to understand how to improve affordability for those who are sensitive to the cost of public transport, while still enabling fare collection from the people who can afford to pay.

Ultimately, the affordability of public transport is a draw card for most queer participants, while for others, the cost of public transport prevents them from taking it more often. The positive view of affordability by queer participants suggests that the demand 'public transport is a good use of my money' set out by J. Walker (2014) is being met for most queer public transport users. This improves the overall attractiveness and accessibility of public transport. The relative importance of affordability to queer participants cannot be fully explained by their income, making this an important topic for planners to consider further.

5.3 Study limitations

There are some limitations to this research which should be considered when interpreting the results and discussion. Overall, the limitations of the study do not compromise the significance of the findings. However, the findings should be considered a broad overview of the accessibility of public transport to queer people, with more research needed to delve further into the topic. The crucial limitations relate to the sample used in the study, and the constraints of using a survey to test perceived safety improvements of public transport interventions.

The sample size was sufficiently large to provide meaningful insights into the experiences of both queer and straight public transport users. By grouping heterosexual or straight participants into one group, and non-heterosexual participants into another group, two separate groups of over 170 people were achieved. This is useful for general comparisons

between the two groups, however, the sample did not allow for robust analysis based on other demographic differences within the sexuality groups. A much larger sample with sub-groups of people of different sexualities, ethnicities and disability statuses would have provided additional insights. Further research could be conducted on a larger scale than what is permitted within a master's thesis, to generate sufficient sample sizes of the various groups within the queer community. This would also provide a more nuanced understanding of how to make improvements which suit queer people who experience multiple marginalisation.

An additional challenge with the sample is the potential for self-selection bias from the sampling method which was non-random and involved participants who volunteered. This method could have resulted in people with strong opinions or extreme experiences of public transport volunteering over people who had milder opinions. If this did occur, it is likely to have affected the queer and straight samples equally, meaning that the differences uncovered in this research stand. Despite the potential bias of the sample, this research is valuable as an initial foray into the most important issues affecting the accessibility of public transport to queer people which can guide future research.

A second limitation relates to the use of the survey to test whether different interventions would make people feel safer. Testing people's perceptions of potential safety improvements through a survey is not as accurate as testing the actual safety impacts of these improvements in reality. This type of real-world testing was out of scope for this research. However, as this study is among the first of its kind in Aotearoa New Zealand, it provides a useful starting point for future research which could test some of the more promising safety interventions in practical trials in the public transport setting. This would enable comparisons between the perceived and actual safety benefits of some of the interventions tested in this research.

6 Conclusion

This section provides a summary of the thesis by drawing together the key findings of the research in the context of the research objectives. This section also considers the contribution of this work to the wider field of environmental planning which thus far has had little consideration for the public transport experiences of queer people. Finally, this section offers ideas for additional research which could further planners' understanding of how to improve public transport access for queer people.

This thesis sought to understand how to improve the accessibility of public transport to queer people in Aotearoa New Zealand cities. This topic is important in the context of rising emissions from the transport system and the need to increase the mode share of public and active modes. Encouraging mode shift from private cars to public transport requires planners to understand the equity impacts for different groups, including queer people. Historic and contemporary marginalisation means that queer people have different levels of access to public transport and different experiences while on board. Very limited research exists on these impacts on queer people in Aotearoa New Zealand. To address this gap, this thesis aims to answer the overarching question of how to improve public transport accessibility for queer people. This involved understanding the elements of the public transport system which support or discourage its use by queer people and specific ways for planners to make improvements to the attractiveness and accessibility of public transport.

This research also offers potential solutions due to the focus in the online survey on testing safety interventions with queer participants. Firstly, improving feelings of safety for queer people by reducing discrimination and harassment is key to making it more accessible to them. Improvements to reduce journey time are also important. Planners have opportunities to make journeys by public transport more time competitive with private vehicle travel by increasing service frequency and through infrastructure such as bus only lanes. Ongoing engagement with the queer community is needed to provide a detailed and nuanced understanding of accessibility for queer people. This is particularly important for understanding the needs of queer disabled people who currently have the most limited access to public transport. Planners should proactively engage with a diverse range of local queer people to understand context-specific issues and needs. Because many queer people use public transport due to having no other option, these interventions will have the dual effect of improving the experiences of these existing queer transit dependent riders, as well as encouraging new queer captive riders onto public transport. Improvements to public transport

must be considerate of queer people's unique experiences. Otherwise, there is a risk that improvements to encourage a widespread mode shift to public transport could have unintended consequences and lead to an inequitable or unjust transition.

The findings of this research have national relevance in the context of transitioning to a low emissions transport system. Prior to this research, little was known about access to public transport for queer people in the Aotearoa New Zealand context. Because of this, there was a risk of an inequitable transition to a low emissions transport system as the potential equity impacts on the queer community were unknown. This research has identified what currently influences public transport attractiveness and accessibility for queer people. It has also identified interventions planners can use to reduce the negative aspects of public transport and leverage the positive ones. The findings also have significance in terms of confirming the existing trends in the emerging international literature. The geographic spread of the existing literature is relatively constrained, focused mostly on the United States, United Kingdom, and Middle East (For example: Lubitow et al. 2017; Weintrob et al. 2021; Shakibaei and Vorobjovas-Pinta 2022). Additionally, the approaches taken favour qualitative methods which focus on the experiences queer people have while using public transport (For example: Lubitow et al. 2017; Lubitow, Abelson, and Carpenter 2020). This research broadens the geographic scope of the literature and tests many of the international findings in the Aotearoa New Zealand context. This research is also unique in that it provides a direct quantitative comparison between queer and straight users' perceptions of public transport attractiveness and accessibility. This contributes to understandings of the specific elements of public transport which lead to disparities in access for queer people when compared with straight people. This research also finds that queer people in Aotearoa New Zealand have similar experiences to queer people internationally, with a few localised differences such as attitudes to the environment, and comparable experiences between trans and cisgender queer people.

Additional research into topics explored in this thesis could further planners' understandings of how to improve queer access to public transport. As an initial exploration of the accessibility of public transport to queer people, this thesis has uncovered additional areas for future research in response to the challenges identified. Some areas of future research are understanding queer transport disadvantage in the wider context of the whole transport system, developing a more in-depth understanding of affordability, and practical testing of safety interventions. The survey showed that queer people experience less access to transport overall which forces them to use public transport. Further research into queer transport

disadvantage is needed to ensure queer people have equitable access to all modes of transport. Further research is also needed to understand how to make public transport more affordable for the people who experience cost barriers to accessing it. Additionally, as identified in the discussion, there are potential differences in perceptions of theoretical safety interventions and safety interventions in practice. Real-world testing of the promising interventions identified through this study could contribute to the literature on this topic. Studying these three topics will provide a more complete understanding of overall transport accessibility for queer people and could ultimately lead to more equitable transport outcomes for all people.

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Appendix A: Online Survey

Gender, Sexuality and Access to Public Transport

This survey is part of a masters research project at the University of Waikato investigating how gender and sexuality influence access to public transport. We are interested in hearing from people of all genders and sexualities who have used public transport in Auckland, Wellington or Hamilton.

The survey will take 8-12 minutes to complete.

The survey begins with some demographic questions. We then ask about your experiences while using public transport, and interventions that could improve your safety while using public transport. You will also be given the opportunity to participate in further research on this topic and stay up-to-date with the research findings.

Please note this survey asks about your experiences with discrimination and harassment.

The lead researcher for this project is Kiri Crossland a Pākehā queer femme living in Kirikiriroa Hamilton. For questions or comments on the research email kcrossland@mrcagney.com

This research was made possible thanks to funding from Waka Kotahi and the University of Waikato.

By completing the survey, you are consenting to the information you provide being used in a masters thesis and being published in academic journal articles. Data will be stored on the University of Waikato server for five years. This survey is anonymous and you can stop answering and exit the survey at any time, your answers will not be recorded.

Gender, Sexuality and Access to Public Transport

Demographic questions

This section of the survey includes demographic questions.

Your answers to these questions will help us understand how access to public transport is different for people depending on aspects of their identity.

1. How old are you?

- ◯ Under 12 years old
- ◯ 12-17 years old
- ◯ 18-24 years old
- ◯ 25-34 years old
- ◯ 35-44 years old
- ◯ 45-54 years old
- ◯ 55-64 years old
- ◯ 65-74 years old
- ◯ 75-84 years old
- ◯ 85 years or older

2. Which of these best describes your ethnicity? (select all that apply)

- ☐ European / Pākehā
- ☐ Māori
- ☐ Pacific Islander / Pasifika
- ☐ Asian
- ☐ Middle Eastern
- ☐ Latin American
- ☐ African
- ☐ Enter your own here

3. Which of these best describes your personal income?

- ◯ Below $14,000
- ◯ Between $14,000 and $48,000
- ◯ Between $48,001 and $70,000
- ◯ Between $70,001 and $180,000
- ◯ Over $180,000

* 4. Which of these best describes your gender?

- ◯ Woman
- ◯ Man
- ◯ Non-binary
- ◯ Takatāpui
- ◯ Enter your own here (including if you have multiple genders):

* 5. Are you trans?

- ◯ Yes
- ◯ No
- ◯ Unsure

* 6. Which of these best describes your sexuality? (select all that apply)

- ☐ Asexual
- ☐ Bisexual
- ☐ Gay
- ☐ Heterosexual or straight
- ☐ Lesbian
- ☐ Takatāpui
- ☐ Queer
- ☐ Questioning or unsure
- ☐ Enter your own here:

7. Do you identify as a disabled person?

- ◯ Yes
- ◯ No

Gender, Sexuality and Access to Public Transport

Location information

This section contains questions about where you live and the public transport options near you.

Your answers to these questions will help us understand differences in public transport availability in different cities and suburbs.

* 8. Which of these cities do you use public transport in most often?

- ◯ Auckland
- ◯ Wellington
- ◯ Hamilton

9. What suburb do you live in?

10. Do you have a bus, train or ferry stop within a 10 minute walk of your house?

- ◯ Yes
- ◯ No
- ◯ Unsure

11. How frequent is the service at the stop you use most often?

- ◯ Every 5-10 minutes
- ◯ Every 10-20 minutes
- ◯ Every 20-30 minutes
- ◯ Every 30-50 minutes
- ◯ Every 50-60 minutes
- ◯ Unsure
- ◯ I don't have a stop within 10 mins walk of my house

Gender, Sexuality and Access to Public Transport

Public transport use

This section asks about your use of public transport.

Your answers to these questions will help us to understand how often people use public transport, why they use it and what could be stopping them from using it more.

12. In a typical week, how often do you use public transport?

- ◯ Every day
- ◯ 5-6 days per week
- ◯ 3-4 days
- ◯ 1-2 days per week
- ◯ Less than once per week
- ◯ Never

13. This table lists some common reasons people have for using, or wanting to use public transport.

Please indicate how important these reasons are to your decision to use public transport.

	Extremely important	Very important	Important	Slightly important	Not important at all
I do not have a driver's license	◯	◯	◯	◯	◯
For environmental reasons	◯	◯	◯	◯	◯
It is affordable	◯	◯	◯	◯	◯
It is convenient/easy	◯	◯	◯	◯	◯
I prefer it to other modes	◯	◯	◯	◯	◯
I have no other option for getting where I need to go	◯	◯	◯	◯	◯

Something else:

14. Would you like to take public transport more often?

- ◯ Yes
- ◯ No

15. What prevents you from taking public transport more often?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
It is too expensive	◯	◯	◯	◯	◯
It takes too long	◯	◯	◯	◯	◯
There are no accessible options near me or my destination	◯	◯	◯	◯	◯
I don’t feel safe using public transport	◯	◯	◯	◯	◯
I don't have a reason/purpose for making more trips	◯	◯	◯	◯	◯

Something else:

Gender, Sexuality and Access to Public Transport

Discrimination

The following sections ask about discrimination and harassment.

Discrimination means being treated unfairly or negatively because of your identity.

Harassment means aggression, abuse or threatening behaviour. Harassment can be verbal, physical, sexual, intimidating or a combination of these.

* 16. How often do you experience discrimination when using public transport?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Always

Gender, Sexuality and Access to Public Transport

Discrimination

17. Who of the following have you experienced discrimination from? (select all that apply)

- ☐ Other passengers
- ☐ Transport staff
- ☐ People passing by (e.g. people walking past while you wait for the bus)

18. In what locations have you experienced discrimination? (select all that apply)

- ☐ Walking to/from public transport
- ☐ On a bus
- ☐ At a bus stop
- ☐ At a bus terminal or transport centre
- ☐ On a train
- ☐ At a train station
- ☐ On a ferry
- ☐ At a ferry terminal

19. Please describe your experience(s) with discrimination on public transport.

Gender, Sexuality and Access to Public Transport

Harassment

* 20. How often do you experience harassment when using public transport?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Always

Gender, Sexuality and Access to Public Transport

Harassment

21. Who of the following have you experienced harassment from? (select all that apply)

- ☐ Other passengers
- ☐ Transport staff
- ☐ People passing by (e.g. people walking past while you wait for the bus)

22. In what locations have you experienced harassment? (select all that apply)

- ☐ Walking to/from public transport
- ☐ On a bus
- ☐ At a bus stop
- ☐ At a bus terminal or transport centre
- ☐ On a train
- ☐ At a train station
- ☐ On a ferry
- ☐ At a ferry terminal

23. Please describe your experience(s) with harassment on public transport.

Gender, Sexuality and Access to Public Transport

Improving safety on public transport

This section asks about interventions that would make you feel safer when using public transport.

Your answers to these questions will help us understand attitudes to different types of safety interventions.

24. This table contains a list of interventions that could improve safety on public transport.

Please indicate whether you agree or disagree that these interventions would make you feel safer when using public transport.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Training for transport staff on diversity and inclusion	○	○	○	○	○
Inclusive messaging/signage supporting diversity and inclusion	○	○	○	○	○
CCTV/security cameras on public transport	○	○	○	○	○
Increased security guard presence on public transport	○	○	○	○	○
Police presence on public transport	○	○	○	○	○
More frequent services (e.g. buses every 10 minutes, instead of every 20 minutes)	○	○	○	○	○
Shorter distances between bus stops	○	○	○	○	○
Better lighting at public transport stops or stations	○	○	○	○	○
Safer and more direct walking routes to public transport stops and stations	○	○	○	○	○

25. Is there anything else that would make you feel safer when using public transport?

Gender, Sexuality and Access to Public Transport

End of survey

Thank you for completing this survey. Your answers will help us to understand how gender and sexuality influence access to public transport.

These final question give you the option to participate in later stages of this research and keep up-to-date with its findings.

The questions on this page will not be linked to the rest of your answers.

26. Are you interested in a follow up interview to discuss your experiences in more detail?

- ◯ No
- ◯ Yes, you can email or call me using these details:

27. Are you interested in receiving the results of this survey?

- ◯ No
- ◯ Yes, please send them to my email address:

Appendix B: Ethical Approval Confirmation

Te Wānanga o Ngā Kete | ***Division of Arts, Law, Psychology & Social Sciences***

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THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

Kiri Crossland

Te Kura Aronui School of Social Sciences

22 June 2022

Dear Karissa

Re: **FS2022-36: Improving access to public transport for queer people**

Thank you for submitting your revised application to the ALPSS Human Research Ethics Committee. We have reviewed the final electronic version of your application and the Committee is now pleased to offer formal approval for your research activities, as included therein.

We encourage you to contact the committee should issues arise during your data collection, or should you wish to add further research activities or make changes to your project as it unfolds. We wish you all the best with your research. Thank-you for engaging with the process of Ethical Review.

Kind regards

Dr Oleg Medvedev, Convenor
Division of Arts, Law, Psychology & Social Sciences Human Research Ethics