

**THE COVID-19 PANDEMIC'S IMPACTS ON POST-SECONDARY
INTERNATIONAL STUDENTS' PUBLIC TRANSIT USAGE IN THE GREATER
TORONTO AREA (GTA) AND THE GREATER VANCOUVER AREA (GVA)**

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Abstract

This master's thesis investigates the profound effects of the COVID-19 pandemic on the public transit usage of post-secondary international students (PSIS) in the Greater Toronto Area (GTA) and the Greater Vancouver Area (GVA). The research aims to understand the diverse experiences of PSIS while using public transit in these two regions, explore their specific needs and challenges in transit utilization, and assess how universities can support PSIS by facilitating their use of public transit. The study adopts transportation studies, education, and sociology disciplines, employing a mixed-methods research approach, incorporating qualitative and quantitative research methods. The findings indicate that PSIS have concerns about long travel duration, safety, and expensive transit fees. The GVA's U-Pass program makes public transit access more affordable than that in the GTA. These insights underscore the tailored support from universities and policymakers to enhance PSIS experiences with public transit, which is significant in PSIS development.

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Chapter One Introduction

Background to the Study

The number of post-secondary international students (PSIS) is enormous in Canada. PSIS significantly contributes to the Canadian economy; however, they have encountered various types of issues, including but not limited to psychological or mental health impact, financial challenges, language barriers, academic issues, and cultural adaptation, during their studies in Canada. While many PSIS are struggling to overcome the issues mentioned above, the coronavirus (COVID-19), which has spread rapidly and severely impacts all countries and regions worldwide, even exacerbates PSIS's challenges during their educational journey in Canada. In this study, This thesis examines a group of students in two large urban regions in Canada, focusing on their daily commute experience with public transit to explore their travel needs during the COVID-19 pandemic. Toronto and Vancouver, as two world-famous metropolitan regions in Canada, host a large population of PSIS and have well-developed public transit systems, have been hit harshly by the COVID-19 pandemic. Industries in these two cities, such as tourism, business travel, events, restaurants, and hotels, are still recovering. Furthermore, the pandemic severely restricted individuals' daily commutes.

The number of post-secondary international students (PSIS) is enormous in Canada. It takes up 16.2% of the student population in Canada's higher education system (Statistics Canada, 2020). International Students (IS) recruitment is the most crucial strategy for university internationalization (Maringe, 2010). In 2011, the Council of the Ministers of Education, Canada (CMEC) worked with each province to recruit IS for Canadian post-secondary education institutions. As a result, IS enrollment in Canada's universities grew by more than 300% from the 2008/2009 to 2018/2019 academic period, from 101,304 to 318,153. Only from 2014 to 2018 did

Canada's PSIS number increase by 68% (Government of Canada, 2020). PSIS plays an essential role in Canada's revenue. The Government of Canada (2020) released that in 2018, they contributed approximately \$21.6 billion to Canada's economy and supported nearly 170,000 jobs in Canada.

Like local students, many PSIS rely on public transit to meet their daily travel needs. For example, in the Greater Toronto and Hamilton Area (GTHA), many post-secondary education students use public transit in an academic year (StudentMoveTO[SMTO], 2019). Therefore, a well-developed public transit system is significant for all university students. The Urban Institute Student Transportation Working Group (2017) believes that "Student transportation may also affect a student's health and well-being" (p. 6). Furthermore, security and health issues while traveling to school can impact students' academic performance. However, compared to the continuous increase in PSIS numbers, the public transit system in some cities cannot meet their travel needs (Cross, 2018). Issues include the high monthly pass price, buses being too packed to get on, and long waiting times, especially on winter or snowy days. In 2020, the COVID-19 pandemic impacted Canada's public transit system, changing PSIS's daily travel mode. While the pandemic continues, the public transit systems in Canada's big cities, such as the Greater Toronto Area (GTA) and the Greater Vancouver Area (GVA), gradually return to standard service. Some PSIS have resumed using public transit for daily travel, such as grocery shopping, meeting with friends, entertainment, recreation, and doctor or dental appointments.

During the pandemic, most PSIS study remotely and unprecedentedly encounter challenges in study, finance, mental or physical health, and commute. The university's support of IS is essential for their success and holistic development during their educational journey in Canada.

Purpose of the Study

This interdisciplinary research aims to identify what non-academic support universities can provide to PSIS during a public health crisis, like the COVID-19 pandemic, by investigating PSIS's experience with public transit in the Greater Toronto Area (GTA) and the Greater Vancouver Area (GVA). This research examines how universities can assist PSIS in achieving holistic student development by supporting them in meeting needs while using public transit in the GTA and the GVA.

Significance of the Study

This interdisciplinary study includes three disciplines: education, sociology, and public transit management. Considering the large population of PSIS in Canada, a holistic understanding of their non-academic experience and needs, such as daily travel with local public transit, helps universities improve student support services. Therefore, from the educational administration perspective, this study examines what support a university can provide to assist PSIS in using public transit.

PSIS encounters challenges during their educational journey in Canada for various reasons. Sociological studies can help identify and explain the causes of PSIS's challenges, providing policymakers and universities with a better understanding of PSIS's needs, which is essential in finding solutions to assist them in achieving holistic development and better adapting to local life. Therefore, from a sociological perspective, Bourdieu's concept of social capital is applied to analyze the significance of the university's travel-related support in PSIS's intellectual, social, and career development.

Many post-secondary students, including PSIS, rely on public transit daily. A study of PSIS's travel experience with local public transit helps public transit providers better understand

PSIS's challenges and needs while using the service. Such understanding can benefit the providers in improving the quality of their services and adjusting strategies to encourage more PSIS and other temporary residents to use public transit, which helps the environment and revenue generation. From the public transit management perspective, this study explores PSIS's travel experience with public transit, which includes their general feeling, one-way travel duration, safety, and cost during the COVID-19 pandemic in the GTA and the GVA.

This interdisciplinary study, using a mixed-methods (MM) approach exploring PSIS's experience with public transit during the COVID-19 pandemic in two major Canadian cities, is significant in five ways. This study contributes to the public transit operation management literature in urban areas by investigating PSIS's public transit usage. This study contributes to the literature on PSIS studies from the perspective of exploring their daily commute experience with public transit. Furthermore, this study examines what non-academic support the university can provide to IS to assist them in meeting their travel needs during a public health crisis like the COVID-19 pandemic. Also, this study discusses the importance of student support during the pandemic for PSIS's development. Additionally, this study demonstrates that Interdisciplinarity is essential in PSIS research in Canada.

Research Questions

The following are the research questions that guided this study:

1. What is PSIS's different experience with public transit in the GTA and the GVA?
2. What are PSIS's needs while using public transit?
3. What is the significance of university support for assisting PSIS in using public transit during the COVID-19 pandemic for their development (refer to p.8 for the definition of Student Development)?

Description of the Study

In this section, the general description of the study is presented. The assumption, delimitations, and limitations are described. The definitions of key terms used in this study are explained.

General Description of the Study

This study uses a Convergent MM approach with an extended qualitative method to identify the non-academic support needed from the university to assist PSIS in meeting their daily commute in two major Canadian cities during the COVID-19 pandemic. Through various kinds of support, the university assists PSIS in meeting their commute needs, accomplishing success in their journey in Canada.

According to Creswell and Creswell (2018), using a mixed-method approach can yield more details than the data provided by either only quantitative or qualitative methods. A Convergent MM approach extended by additional individual interviews allows me to holistically investigate and understand PSIS's experience with public transit during the COVID-19 pandemic. In the Greater Toronto and Hamilton Area (GTHA), post-secondary students "account for more than 600,000 daily commuters". Students' commutes significantly impact their academic achievement (Toronto Metropolitan University, 2022, para. 2). This information indicates that commute is closely related to PSIS's daily life. I believe that daily commutes are essential for PSIS's development. Simpson (2002) points out that a student support system in a university is vital for its students. Therefore, I also study what kinds of university support assist PSIS in meeting their travel needs and are significant for their development and success in Canada.

Delimitations

This study was delimited to two public universities, one in the GTA and the other one in the GVA. Both universities are located in the suburb of the area. Although the interview data of this study cannot be generalized to other contexts, backgrounds, and participants, I believe the findings are practical to PSIS support development at other universities.

For this study, PSIS's experience with public transit between the GTA and the GVA, their understanding of the university's support in assisting them in meeting travel needs, and the relations between student support and development were examined. Furthermore, this study uses three types of data sources: the quantitative data from the 2019 survey data of the SMTO project, PSIS relevant interview data from the SMTO project, and data from 21 interviews with PSIS in the GTA and the GVA. The former two data sets focus on PSIS experience in the GTA, and the latter provides information on PSIS's different experiences between the GTA and the GVA.

Limitations

There are some limitations to this study. Due to the limited resource, a follow-up study could not be conducted to evaluate PSIS's satisfaction with their academic performance while using public transit as a commuting mode before the pandemic. Furthermore, the survey did not collect data about students' experience with public transit during the pandemic. Additionally, the comparison between the quantitative and qualitative data cannot be completed because of a lack of the same questions in surveys and interviews, which caused the inability to use triangulation to validate findings.

As the qualitative data counted on individual interviews, the effectiveness of qualitative data relied on participants' trustfulness, candidness, and thoroughness in the interview. As a researcher, I attempted to be aware of and avoid my personal experience or bias from intervening

in interviews, data analysis, and data presentation. The strategies included asking other researchers to code the data, having participants review the results, and reviewing findings with others having research experience.

Considering that the information provided by participants in the interviews might disclose their identity details, I used numbers to replace all participants' real names to ensure anonymity. I provided written information to them that their real identity would not be disclosed, all the information they shared would be confidential, and they could withdraw from the study whenever they wanted. If they withdrew, all data they provided would be deleted and not be used in the study. They signed the consent forms acknowledging the information.

Definitions

International student. International students refer to those who have left their home countries or original territories and studied in other countries or territories (UNESCO, 2006). In Canada, IS are categorized as temporary residents holding a valid Study Permit to study in Canada.

Student Support. Sanford (1967) defines student support as buffers in the setting that assist the student in overcoming challenges and succeeding (in *Student Development in College*, p. 46). Simpson (2012) asserts that student support is service delivery to students and emphasizes the importance of context. Similarly, Tait's (2004) business model describes student support as customer service. In this study, student support in the university is services delivered to students to assist them in addressing their challenges and achieving success.

Efficient Public Transit. The public transit system is essential for a city's sustainability, equity, and quality of life (Saif, Zefreh, & Torok, 2018; Diab, Badami, & El-Geneidy, 2015). De Gruyter et al. (2016) define an efficient public transit network as a system that can reduce riders'

costs, travel time, and operating system costs; meanwhile, it benefits local economic growth and is affordable for most individuals and groups. Furthermore, the expense of using it should not be a financial burden for most individuals and families.

Student Development. Student development refers to the process in which a student "grows, progresses, or increases his or her developmental capabilities as a result of enrollment in an institution of higher education" (Rodgers, 1990, p. 27).

Capital. In this study, capital refers to the resources an individual can employ to achieve an objective in a social setting. Each form of capital's value can change in different contexts (Calhoun et al., 1993). In some circumstances, the rewards achieved from one form of capital may be converted to other forms of capital.

The Researcher

I have planned to apply an interdisciplinary approach to studying newcomers' experiences with public transit in Canada since 2020. When considering the idea for the project, I was advised and encouraged to examine PSIS's experience with public transit in the GTA and the GVA, and I was delighted to do so. While examining PSIS's experience with public transit, I decided to focus on safety, cost, issues using public transit, and challenges during the pandemic. In this study, I also focus on student development when contemplating PSIS's achievement. It allows me to research what PSIS needs and what support a university can provide to assist PSIS's development during the COVID-19 pandemic.

The relationship between universities and cities is often perceived as "symbiotic" (Addie et al., 2015, p. 29). Universities are centers for producing "knowledge and creative talent" (p. 36) and supplying skilled workers to cities that boost the local economy. On the other hand, a city's economic success increases its global city ranking while benefiting its university ranking (Jöns &

Hoyler, 2013). Boston's robust higher education system in the metropolitan region has a vital influence on its economic success. Universities have changed to "global players" from local players and can influence the "social, spatial, and symbolic structures of the metropolis" (Addie et al., 2015, p.30) and have evolved into an "essential infrastructural prerequisite" (p. 43) for a city to compete domestically and globally.

As a group of university students, PSIS is significant for Canada's international education. They are also a source of skilled labor when they can effectively and successfully integrate into the local labor market after graduation (The Government of Canada, 2014). Despite government policymakers' assumptions that Canadian education and training would make PSIS easily adjust to Canada's society and with fewer difficulties in integrating into the Canadian labor market (The Government of Canada, 2014), PSIS face various types of challenges in psychology, social communications, cross-cultural adaptation, and finance in Canada (Scott et al., 2015; Firang, 2020; Varughese & Schwartz, 2022). To overcome the challenges and successfully integrate into Canada's society, they must achieve holistic development by studying hard, participating in various activities on and outside the campus, and receiving adequate student support from the university.

Many PSIS use public transit to attend classes and participate in campus or social activities (Cross, 2018; Monteiro et al., 2021); however, the high price of public transit in some global cities, such as Toronto and Vancouver, may hinder PSIS daily travel. Some universities provide shuttle bus service, but its limited routes and schedule still cannot meet students' daily travel needs, which may negatively affect their course selection, class attendance, and extra curriculum activities participation. Therefore, the university's proper support to assist students in

meeting their needs for using public transit is beneficial for PSIS in traveling and development during their academic journey.

The interdisciplinary approach aims to "bridge disciplinary viewpoints and potentially enable the examination of existing accumulated knowledge from the perspective of a neighboring discipline" (Stock & Burton, 2011, p.1096). I accept and coordinate different theories to develop the conceptual framework in this interdisciplinary study. A mix-method, including quantitative and qualitative techniques, is employed in this study to understand PSIS's experience with public transit from both the etic and emic perspectives. An etic perspective refers to the "accounts, descriptions, and analyses expressed in terms of the conceptual schemes and categories regarded as meaningful and appropriate by the community of scientific observers" (LETT, 1990, p.130). It includes an external view "on a culture, language, meaning associations and real-world events" (Olive, 2014, p. 4). In contrast to its counterpart, an emic perspective attempts to "capture participants' indigenous meanings of real-world events" (Yin, 2015, p.16). It "looks at things through the eyes of members of the culture being studied" (Willis, 2007, p.100). I was an "outsider" (Oliver, 2014, p. 4) while analyzing the SMTO survey data from an etic perspective. Meanwhile, as a frequent public transit user with a PSIS background in Canada, I have "shared perceptions"(Lett, 1990, p.130) with participants. My daily travel experience, considerably similar to the participants', would allow me to understand their difficulties and needs in their daily commute as an "insider" (Oliver, 2014, p. 2). Therefore, from an emic perspective (Denzin & Lincoln, 2005; Olive, 2014), I analyzed eight PSIS-relevant interviews from SMTO and the extra 21 interview data and provided solutions and recommendations to universities to assist students in meeting travel needs and support their holistic development.

Organization of the Thesis

In Chapter One, I presented this study's background, purpose, and significance. Furthermore, the assumptions, delimitations, and limitations of this study were described. I defined the essential terms significant to this thesis's discussion. In Chapter Two, I provided a literature review about PSIS's typical challenges in Canada, PSIS challenges in the COVID-19 pandemic, the situation of public transit in the GTA and the GVA during the pandemic, public transit safety, PSIS challenges in using public transit, student development, university student support for PSIS during the pandemic, and social capital. In Chapter Three, I explained the methodology of this study. The research design, data selection, data collection, data analysis, and ethical considerations were described. In Chapter Four, results, including quantitative and qualitative phrases, were presented. In Chapter Five, I discussed the result and presented the implications.

Chapter Two Literature Review

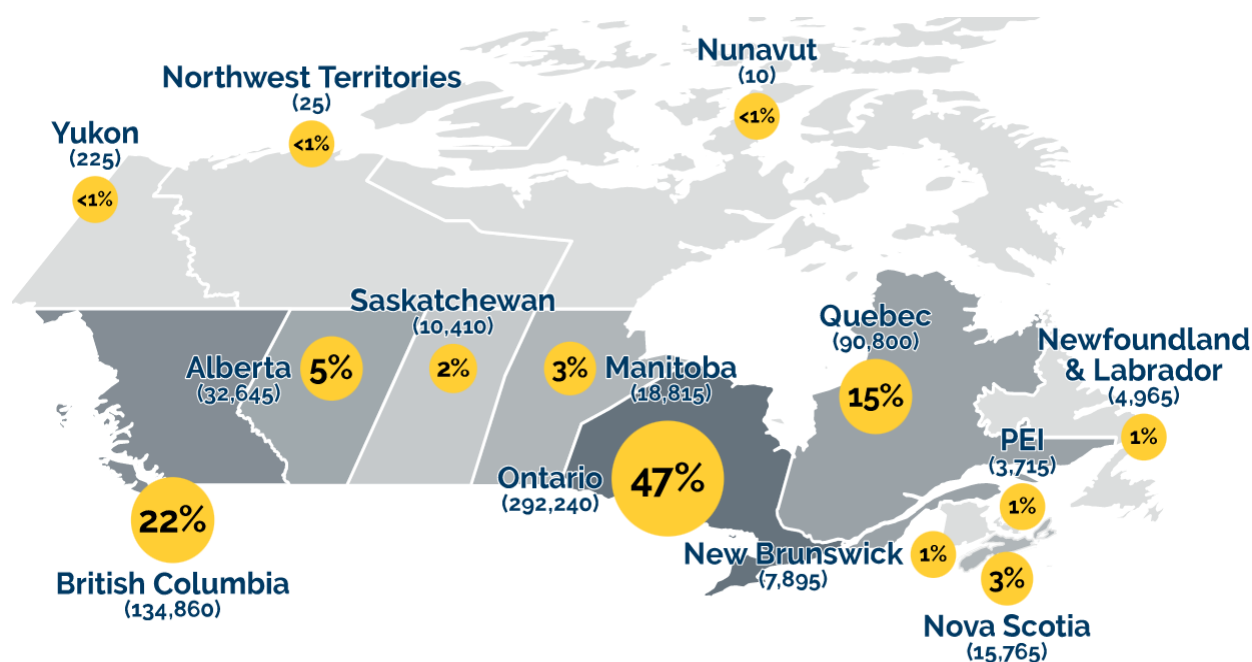
In this chapter, I provide a review of the literature about the PSIS situation in Canada, PSIS challenges in the COVID-19 pandemic, the public transit in the GTA and the GVA, PSIS challenges in using public transit in both areas, public transit equity and safety, social capital, student development, and university student support for PSIS during the pandemic.

Post-secondary International Students (PSIS) in Canada

PSIS have been essential for Canada and Canada's higher education since the publication of *The Canada we want: Speech from the Throne to open the Second Session of the Thirty-Seventh Parliament of Canada: September 30, 2002*. It delineated the necessity for Canada to become an appealing country for talent and investments. It further detailed Canada "as a destination of choice for talented foreign students and skilled workers by more aggressively selecting and recruiting through universities and in key embassies abroad" (Government of Canada, 2002, p. 9). Canada is now one of the four most favored study countries for international students worldwide (Canadian Bureau for International Education [CBIE], 2018). Meanwhile, they contributed approximately \$21.6 billion to Canada's economy in 2018 and supported nearly 170,000 jobs for Canadians in 2016 (The Government of Canada, 2020). Furthermore, PSIS are considered "ideal immigrants" (York University, n.d., para 1) and Canada's "domestic immigration pool" (Hagan & Bolongaro, 2020, para. 12). Mendicino highlights PSIS as "a very attractive pool... to look very closely at" (Hagan & Bolongaro, 2020, para. 12, as cited in Brunner, 2022, p. 79). He passed a message to PSIS: "we don't just want you to study here, we want you to stay here" (IRCC, 2021, para. 6).

PSIS population increased fast, and the enrollment grew by more than 300% from the 2008/2009 to 2018/2019 academic period, from 101,304 to 318,153. PSIS represented 16.2% of Canada's higher education system. (Statistics Canada, 2020 a). CBIE International Student Survey 2021 reported that 351,195 international students are at the post-secondary level. Ontario and British Columbia are the top provinces with the largest IS populations among all Canadian provinces hosting IS. The following map indicates the number and percentage of IS in each province.

Figure 2.1 Where do International Students Go



Source: CBIE (2022)

PSIS's Challenges in Canada

All students encounter challenges in post-secondary education. Students with different backgrounds experience different challenges and have various needs to meet. If issues from academics, family, peers, or work are too challenging, students will have unfavorable outcomes

during their college journey (Patton et al., 2016). PSIS encounter academic and non-academic challenges during their journey in Canada. Regarding the academic part, language difficulties in the Anglophone classes and Western-style academic adaptation are two main challenges for most PSIS in their educational pursuit (Andrade, 2006; Huang, 2017; Zhang & Beck, 2014). In particular, the PSIS who are newcomers and experiencing a new pedagogy in Canada need to acculturate and adapt to the new study environments quickly to succeed in their studies. PSIS who are unsuccessful in the adaption may not be able to achieve a sound learning process and outcome (Sibley et al., 2015). Considering the non-academic side, social barriers, financial problems, seeking jobs, accommodation, cultural adaptation, feeling marginalized, and discrimination are common issues that PSIS commonly encounter (Webster, 2022; Siddiq et al., 2012; Wu et al., 2015). Considering PSIS's experience with public transit, which is related to their non-academic daily life, is one of the research purposes of this thesis, I focus on reviewing the literature about PSIS's non-academic issues during the pandemic.

PSIS's Challenges in Canada during the COVID-19 Pandemic

The COVID-19 pandemic had an enormous impact on PSIS. According to the Government of Canada (2022 a), there were 533,370 IS in Canada on December 31, 2020. It was a 17% decrease from 2019 and a 24% from the 2020 predicted number of 708,387. During the pandemic, all students encounter different challenges to various degrees. Junior students worry that campus closure will negatively impact their academic performance, and senior students are concerned that the pandemic will reduce their employment opportunities (Appleby et al., 2022). Many PSIS who stayed in their host countries encountered financial issues, those who lived on campus were required to leave their residences, and many students lost their jobs or encountered reduced working hours. While Canadian students could return home, many PSIS could not return

to their home countries because of the border closure/restrictions or the surprisingly high travel cost (Coulton, 2020; Hari et al., 2020; Varughese & Schwartz, 2022).

During the writing of this thesis, on September 23, 2022, Canadian health authorities reported 4,721,640 cases and 53,644 deaths from COVID-19 (Government of Canada, 2023). Public health experts indicated that elders, low-income groups, indigenous people, and people with underlying medical conditions or compromised immune systems are considered more vulnerable to this pandemic. PSIS were not included in the list and were severely impacted by the pandemic socially and financially due to their temporary residency status in Canada (Firang, 2020). Furthermore, city lockdowns and the closure of campuses resulted in reduced access to specialized facilities. The institutional changes disrupted and caused difficulties for students' access to various student services, such as healthcare appointments, medication, and in-person counseling on campus (Appleby et al. 2022).

Socially. In the second week of March 2020, following both the federal and provincial public health guidelines, many post-secondary institutions in Ontario and British Columbia closed their campuses and started transitioning to an online modality in response to the COVID-19 pandemic (Statistics Canada, 2020; Gallagher-Mackay et al., 2021; Steacy, 2020). In a public university in Ontario, many students reported stress, loneliness, and restlessness because of the loss of in-person contact with peers, friends, and family members. Furthermore, these students complained that such social separation increased their anxiety and negatively impacted their mental health (Appleby et al., 2022). As the first COVID-19 case was identified in China, Asian PSIS experienced "social exclusion, xenophobic attitudes, discrimination, microaggressions, and verbal assaults" (Hari et al., 2020, p.4).

Meanwhile, university residences were closed due to the campus closure, thus causing many PSIS needed to move out and look for housing off campus, which made them feel more isolated and vulnerable (Gomez et al., 2020). The closures might curb the virus transmission but also put PSIS in a condition of anxiety that causes depression, poor self-confidence, interpersonal connections loss, and impaired educational performance (Firang, 2020). Under such a challenging situation, PSIS faced a dilemma of whether they should return to their home countries to stay with their families during this tough period or stay in Canada to avoid re-entry issues (Zhao, 2020).

Financially. While experiencing social issues, many PSIS also encounter financial challenges. Appleby et al. (2022) identified that students' financial stress increased due to the reduced income and expenses on housing and university fees. Many PSIS's financial anxiety was caused by Canada's local business crisis and their immigration status. Many PSIS came to Canada with a tight financial budget, especially those from semi-periphery or periphery counties. They worry about the affordability of staying in Canada, the high tuition fees, and the lack of financial aid (Appleby et al., 2022). They must work part-time on or off campus to mitigate their financial burden. However, the university closure caused many PSIS who worked on-campus to lose their jobs.

Furthermore, after the COVID-19 outbreak in 2020, Canada's cities, such as Toronto and Vancouver, imposed lockdowns to constrain COVID-19 viral transmission (CBC, 2020; Keil et al., 2022). The city lockdowns caused the closure of local businesses, such as restaurants, where many PSIS work part-time to earn paychecks to support their daily life and pay tuition fees. In Toronto, restaurants closed for more than 360 days between the start of the pandemic in 2020 and May 2021 (Levinson-King, 2021), thus causing many PSIS to lose their jobs. The loss of

income or wages from employment created the most severe financial difficulties for PSIS (Varughese & Schwartzthe, 2022). The PSIS who could keep their jobs might have lower wage rates than their Canadian counterparts. According to Chen and Skuterud (2018), compared to local students, PSIS in Canada had lower hourly payments, employment rates, and education-occupation match. PSIS were previously allowed to work off-campus for 20 hours. On October 7, 2022, the Government of Canada announced that the 20-hour restriction would be temporarily lifted from November 15, 2022, until December 31, 2023 (Government of Canada, 2022c).

The government of Canada provided a series of financial aid to mitigate those Canadians who were in economic difficulties. The aid includes the Canada Emergency Response Benefit (CERB), the Canada Recovery Benefit (CRB), the Canada Recovery Sickness Benefit (CRSB), and the Canada Recovery Caregiving Benefit (CRCB) (Government of Canada, 2022b; CPA Canada, 2021). Unfortunately, PSIS were not eligible for most of the above financial relief programs due to their non-permanent residency status in Canada (Hari et al., 2020).

Public Transit in the GTA and the GVA During the COVID-19 Pandemic

The GTA's public transit system is the third largest in North America, including the GO rail and bus systems that take suburban residents to downtown Toronto, operated and maintained by the TTC (City of Toronto, n.d.). The GVA public transit network includes bus, SeaBus, SkyTrain, and West Coast Express services. The COVID-19 pandemic unprecedentedly impacted public transit ridership in both areas. After the World Health Organization (WHO) declared the pandemic on March 11, 2020, the transit agencies in the GTA and the GVA advised locals to take public transit only for essential trips during the COVID-19 outbreak (Palm et al., 2021). However, many visible minorities, low-income households, and essential workers who rely on

public transit daily or could not work from home continued using the service (L. Liu et al., 2020; Transit, 2020). Furthermore, to follow the federal and provincial governments' health guidance on physical distancing, the agencies significantly reduced transit vehicle capacity on carrier modes, thus causing the ridership to drop considerably (Metrolinx, 2020; TransLink, 2021). In the GTA, from April to September 2020, GO Transit carried only 3.1 million riders. It was just 7.6% of that in the same period of 2019. Toronto Transit Commission (TTC), the public transit agency providing bus, subway, streetcar, and paratransit services in Toronto, recorded the lowest ridership since the 1940s. Its ridership plunged right after the pandemic declaration, falling 24.8% in March and reaching 85.7% in April compared to February. Eventually, a 57.2% decrease in 2020 compared to 2019 (Doucet, 2021; Metrolinx, 2020). To reduce the operation cost, TTC implemented a service reduction starting in March 2020. Meanwhile, customers were still required to pay the same fare when boarding buses or entering the subway station (TTC, 2020). Furthermore, to curb the viral transmission in vehicles and the subway, starting on July 2, TTC mandated that everyone wear masks while using their service (Doucet, 2021). Despite paying the same fare during the service reduction and mask mandate, many PSIS, still relied on public transit for their daily commute.

In the GVA, there was a dramatic reduction in ridership across the public transit system. In April 2020, system-wide transit trips saw an 83% decline from the same period in 2019. The weekday ridership was only 12% at the pre-pandemic level. TransLink in Metro Vancouver saw a 52% decrease in 2020. Despite the notable decline in ridership, Translink suspended the bus fare between March 20 and June 1, 2020, to ensure appropriate social distancing on the vehicles amid the COVID-19 spread (TransLink, 2021; Wadhwani, 2020). The ridership started slowly returning in December 2020 and reached 50% of the pre-pandemic level in July 2021. For post-

secondary student users, whose ridership increased 40% between December 2020 and May 2021 (Kapatsila et al., 2022).

PSIS and Public Transit

A well-developed public transit system is significant for PSIS relying on public transit to travel within the city, as many cannot access a private vehicle (Cross, 2018; Monteiro et al., 2021). Furthermore, the decrease in commute time and cost encourages students to choose public transit rather than other travel tools (Danaf et al., 2014). Jennings (2017) also articulates that convenient public transit can significantly affect a university's retention. Universities "in areas not well served by public transit may wish to provide weekend shopping buses from campus to stores or malls to serve nondriving students" (p. 67). The Urban Institute Student Transportation Working Group (2017) expresses that "Student transportation may also affect a student's health and wellbeing" (p. 6). However, PSIS encounter different issues while using public transit. Cross (2018) reports that compared to the continuous increase in PSIS numbers, the public transit system in some cities cannot meet students' needs. Issues include high monthly pass prices, buses being too packed to get on, and long waiting, especially on winter or snowy days.

Students who depend on public transit on average spend more than one hour on their daily commute and mostly travel to where it is closer to their residential areas (Butler & Sweet, 2020; Nash & Mitra, 2019). As a group of the population that has rare auto usage (StudentMoveTO, 2019), students are more price sensitive than other public transit users (Khattak et al., 2011; Akar et al., 2012) as many of them are in temporary poverty financial status (Butler & Sweet, 2020). Therefore, the high cost of public transit in the GTA seriously stresses them. The U-Pass program (approximately \$78 per month) is designed to make public

transit more affordable and would mitigate students' financial burden to some degree on using public transit; unfortunately, the proposed TTC U-Pass program proposed in March 2018 was canceled due to the change of provincial government (Butler & Sweet, 2020). Researchers advised GTA's policymakers to initiate a low-cost and sustainable program similar to the "Semesterticket" in Germany to benefit all students in the area. However, whether the U-Pass program should be implemented in the GTA is still under discussion (Butler & Sweet, 2020).

In the GVA, ten post-secondary institutions employ the U-Pass program to encourage students to use public transit to travel to and from school (TransLink, 2022). Norgaard (2020) reports that most university students use public transit as their primary travel method and take buses, SkyTrain, or the West Coast Express train for daily commutes. Before the pandemic, many students traveled six to eight trips by public transit a week. The travel time spans from 30 minutes to two hours on weekdays. Norgaard (2020) further declares several issues that hinder students from using public transit. Bus service, unpredictable time, long travel duration, and overcrowded services are common problems. Issues also exist in the SkyTrain and West Coast Express services, including "overcrowded services, dirty train environments, (the) concern of anti-social behavior, fear of victimization walking to the station, waiting at the train platform(s), and fear of sexual harassment". Furthermore, there are more issues of "threat of victimization and harassment" in train environments than that are in bus stops and exchanges (p. 234).

A limited study investigates PSIS's usage with public transit (Hanbazaza et al., 2021). However, research has identified that post-secondary students consider their commute hinders them from going to campus and as a barrier to academic success (Taylor & Mitra, 2021). Long commutes dissuade students' on-campus participation, which links to their academic achievement (Allen & Farber, 2018; Coutts et al., 2018) and sometimes negatively affects their

academic performance (Kobus et al., 2015). Similarly, Turley and Wodtke (2010) identify that commute students in the United States had lower GPAs than their non-commute counterparts, but this finding only applies to Black students and students who attended liberal arts colleges.

PSIS Financial Status During Study in Canada

As mentioned earlier, many PSIS came to Canada with a tight financial budget, especially those from semi-periphery or periphery counties. They need to work part-time to mitigate their financial burden. The following table is PSIS's income information based on their educational level.

Table 2.1 PSIS Income during Study in Canada

	Bachelor's degree	Master's degree	Doctoral degree
Below \$20,000	45%	55.6%	63.2%
\$20,000 to \$49,999	12.3%	10.5%	24.7%

Source: Choi et al. (2021). Early earnings trajectories of international students after graduation from postsecondary programs.

Due to the lack of official information about PSISs' income, I provide information about new immigrants in Canada, who have a large population in the low-income category, for reference.

Table 2.2 Immigrants' Median Income Information in Canada

2018 (Immigrants Admitted in 2017)	\$30,600
2019 (Immigrants Admitted in 2018)	\$31,900

Source: Statistics Canada (2021). Longitudinal Immigration Database: Immigrants' income trajectories during the initial years since admission.

Social Capital

In this study, capital refers to the resources individuals can use to reach their goals in a social setting. The value of capital changes in different social contexts, and the benefits achieved from one form of capital can be converted to another form or field in some situations. Pierre Bourdieu's concept of Social Capital represents a significant contribution to the field of sociology, offering a nuanced perspective on how social relationships, networks, and resources shape individual outcomes within society. Bourdieu (1986) defines social capital as the sum of the resources available to an individual or a group through their social connections and networks. Social capital encompasses individuals' relationships and social ties, including friendships, family connections, professional networks, and community affiliations. It is a resource that can be harnessed for various purposes, such as accessing information, obtaining support, or advancing one's career. Owning more valuable capital benefits individuals to reach or remain in higher status in a social context (Bourdieu & Wacquant, 1992; Calhoun et al., 1993). This concept highlights the social dimension of an individual's life and underscores the importance of social networks in shaping opportunities and outcomes. A city's public transit operation significantly affects individuals' mobility, closely related to PSIS's networking development and social capital accumulation. Therefore, this study applies Bourdieu's concept of social capital and provides a relevant literature review in the following.

Bourdieu (1986) defines social capital as:

the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition—or in other words, to membership in a group which provides each of its

members with the backing of the collectivity-owned capital, a 'credential' which entitles them to credit, in the various senses of the word (pp. 248–249).

Then Bourdieu and Wacquant (1992) further refine social capital as "the sum of resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (p. 119). These descriptions imply social resources established from group membership, community connections, and networking. Field (2008) believes that social capital exclusively benefits group members and may help them to compensate for the shortage of other social resources..

Knowledge of the group and skills required by the group are prerequisites to obtaining membership and establishing connections with other members. Through communication with other group members, an individual can develop social capital, which allows them to obtain a specific position, status, or more social resources within the group than outsiders. We can infer that the quantity of social capital an individual can use depends on the size and type of their social network and the abundance of other forms of capital owned by those to whom this individual is connected. An individual cannot accumulate their social capital in isolation but instead is tied up with other forms of capital owned by others in their networks; the reciprocal relationship benefits group members to access information, resources, and support within the group. The more social capital an individual owns, the more social resources they can use to exchange with other members, eventually in a better situation to acquire other forms of capital and achieve their social goals (Bourdieu, 1986).

Social capital can help individuals achieve their pursuits; it also enables inequality. Field (2008) further articulates that while everyone uses their social capital to pursue their interests,

some individuals' connections are more valuable than others, thus causing those with limited or less valuable capital to face barriers to social mobility and may struggle to access the resources and opportunities necessary for advancement, eventually situate in a disadvantaged social status.

Edwards and Foley (1997) also point out that

Access to social capital depends on the social location of the specific individuals or groups attempting to appropriate it in much the same way that other forms of capital are differentially available. Finally, the social location of the social capital itself affects its “use value,” regardless of who appropriates it (p. 677).

That said, the groups owning more valuable connections can access more favorable resources that facilitate them to a privileged social status (Bourdieu, 1986). As a result, the dominant groups marginalize those disadvantaged groups, and eventually, further inequality is generated (Field, 2008).

Student Development

Student development is one of the core purposes of post-secondary education (Walker, 2008), as each student "grows, progresses, or increases his or her developmental capabilities as a result of enrollment in an institution of higher education" (Rodgers, 1990, p. 27). During their higher educational journey, students need to develop their skills, knowledge, and mindset to address challenges; meanwhile, various support from institutions is vital for students to address the challenges they meet and succeed (Sanford, 1967). Student development is a holistic process of wellness in which intellectual, social, and occupational components are essential (Hettler, 1980). The intellectual component refers to students' academic achievement and effort to learn new knowledge and skills. Students can experience intellectual growth by participating in

educational and cultural activities in and beyond the classroom, combining learning resources available within the university and larger communities. As a result, they will evolve their ability to identify potential issues, solve problems, be more creative, learn, and select appropriate actions based on the available information. The social element refers to a student's healthy friendships and social connections. In this development, students learn how to live more healthily and interact with those surrounding them better. Eventually, students will enhance their relationships with their living area, be aware of maintaining necessary friendships, contribute to their communities, and realize to live in harmony with others and our environment. Considering the occupational feature, it is about students' career or vocational development. Students learn to select a career consistent with their values, interests, and beliefs through this development process. Furthermore, they improve their transferable skills through structured involvement opportunities in the growth path. Ultimately, they will discover they can obtain personal happiness and life enrichment from work (National Wellness Institute, n.d.).

Post-secondary (PS) Student Support

PS student support aims to assist students in succeeding in their higher education journey (Rapper et al., 2022; Simpson, 2002). The study of PS student support is broad (Brindley et al., 2004; Lloyd-Jones, 2021; Rapper et al., 2022; Simpson, 2002; Tait, 2000, 2014). Brindley et al. (2004) categorize student support in higher education into tutoring and teaching, counseling and advising, and administrative support. In Tait (2000, 2014), student support is described as assisting students' cognitive, affective, and systemic development. Lloyd-Jones (2021) articulates that emotional and informational support is vital for students transitioning to virtual platforms during the COVID-19 pandemic. Rapper et al. (2022) investigate students' academic and wellbeing experiences and how the university can support these aspects during the COVID-19

pandemic. Simpson (2002) believes that an institutional support system is vital and divides student support into academic and non-academic areas within an online and distance learning context. The two types of support are interrelated tightly to each other and aim at assisting students to succeed in their post-secondary journey. Academic support includes "defining the course territory", "explaining concepts", "exploring the course", "feedback - both informal and formal assessment", "developing learning skills, such as numeracy and literacy", "chasing progress, following up students' progress through the course", and "enrichment: extending the boundaries of the course and sharing the excitement of learning" (p. 7). Non-academic support comprises "advising: giving information, exploring problems and suggesting directions", "assessment: giving feedback to the individual on non-academic aptitudes and skills", "action: practical help to promote study", "advocacy: making out a case for funding, writing a reference", "agitation: promoting changes within the institution to benefit students", and "administration: organizing student support" (p. 8).

Universities in Canada shifted student support services to an online model during the pandemic. This circumstance is similar to Simpson's student support in an online learning context; furthermore, this research focuses on PSIS's non-academic experience. For these reasons, I stick with Simpson's (2002) about students' non-academic support ideas. Students, especially first-year students and IS, face many issues. Assisting students in addressing problems they are encountering is essential. Simpson (2002) describes problem-solving support as helping students to overcome obstacles and troubles in their learning process, such as campus-related problems, time management issues, and personal problems. Campus-related problems refer to failing to follow the rules and regulations. Time management issues consider students to get behind or be disorganized in their time management. Personal problems refer to students'

families or other issues that negatively affect their studies. Furthermore, the external environment, which refers to students' families and jobs, can affect students' success during online learning. Meanwhile, universities need to carry out different activities for non-academic support, such as "advising", "assessment", "advocacy", "agitation", and "administration" (p.23), to assist various students with different backgrounds. Advising refers to providing information, exploring problems, and redirecting. Assessment is an action that provides feedback to students on non-academic aptitudes and skills. Advocacy is to provide funding and references to students. Agitation is to benefit students through changes within the institution. The administration is the organization of student support.

The following section summarizes student support services during COVID-19 from four universities. Two are in the GTA, and the other two are in the GVA, drawing on the sample data collected for this thesis.

Table 2.3 Student Support in Universities #1 and #2

Student Support Types	University#1 in the GTA	University#2 in the GVA
Information	Essential COVID-19 information resources for IS	COVID-19 FAQ for IS.
Resources	A list of reliable resources about COVID-19	Provide supports and resources to help with mental health and well-being, personal safety, and self-isolation.
	Wellbeing resources and a schedule for online fitness classes	A list of reliable resources to access appropriate support, including but not limited to financial aid, IS advising, registrar and information services, and residence and housing
	Reliable resources and instruction to mitigate financial stress during the pandemic.	
	Resources about career and finance.	
	A list of apps to guide students in practicing digital well-being	
Guide	A guide for students to practice self-care under social distancing protocols or quarantine.	
Instruction/Support	An instruction to reduce feelings of anxiety, isolation, loneliness, and uncertainty during the pandemic. Instruction for students who live apart from their family and friends on maintaining emotional intimacy through remote means.	Mental health and well-being: virtual and in-person supports are available.
	Instruction for students who live with their family to prevent “cabin fever”	An office (the Office of Student Support, Rights & Responsibilities) provides COVID-19 support and assistance for those with complex needs or in challenging situations.
		An office (the Sexual Violence Support & Prevention Office) provides support in various locations to those who experience or are impacted by sexual violence

Sources: University#1 in the GTA (2022) & University#2 in the GVA (2022)

Table 2.4 Student Support in Universities #3 and #4

Student Support Types	University#3 in the GTA	University#4 in the GVA
Information	COVID-19 information resources for IS	Immigration and health insurance FAQ about COVID-19 for IS
Resources	<p>A list of reliable resources about COVID-19, including vaccines, entry to Canada and pre-arrival, leaving Canada, health insurance, and post-graduate work permit</p> <p>Health resources about COVID-19 symptoms, online absence declaration, self-isolation accommodation arrangements for students who live off-campus, academic support, the contact information of the university health services, academic accommodations for students with a diagnosed disability, 24-hour student support in over 35 languages, virtual agent for student mental health support, and contact information of other health services in Ontario</p> <p>Resources and instruction for IS living in residence</p>	<p>A list of resources about immigration, health insurance, working while studying, advice for planning during study, taxes, information for IS's family, Resources about academics, health and wellbeing, wellness resources, sexual assault support, and 24/7 crisis support</p>
Guide	A guide for students' in-person & remote placements	
Instruction/Support	An instruction to reduce feelings of distress related to mental health, personal safety, and sexual violence & sexual harassment	

Sources: University#3 in the GTA (2022) & University#4 in the GVA (2022)

In addition to the above student support summarized from two universities, "staff development" and "institutional structures" (p. 239) significantly affect the quality of support that delivers to students. Staff development is how an institution continually trains its staff to support students. Training topics include "support values and attitudes, communication skills (face-to-face, phone, online), boundary-setting skills—referring on, interpersonal skills" (p. 242). Training activities include but are not limited to mentoring and supervising.

Institutional structures refer to an institution's system for student support and how it carries out student support. Generally, student support is delivered centrally or locally. Simpson (2012) lists three types of remote learning modes, including (a) "campus-based"; (b) "distance teaching"; (c) "hybrid" (p. 247). In campus-based universities, student support is primarily conducted on campuses, even if some students study remotely. Full-time staff who support students face-to-face are assigned to the remote section. In distance teaching universities, support services are carried out on local campuses or study centers by part-time staff but under the university's direction. In the hybrid mode, depending on the institutional size and staff's availability, student support can be delivered by departments or the institution.

Conclusion

In this chapter, I reviewed the literature about PSIS's challenges in Canada, focusing on their social and financial issues during the COVID-19 pandemic. Furthermore, I introduced public transit systems in the GTA and the GVA, reviewed the importance of public transit to PSIS, and studied literature about public transit safety. I also reviewed literature about student development and support in post-secondary institutions. Student support services during the pandemic in two public universities were also summarized. The theory social capital was also studied.

Chapter Three Methodology

This chapter describes the research design, data selection, data collection, analysis, and ethical considerations.

Research Design

This study applied a Convergent MM approach to collect and analyze PSIS-related data from the SMTO project. Furthermore, an extended qualitative method was applied to conduct 21 semi-structured interviews with PSIS from the GTA and the GVA. .

Philosophy

This study follows an epistemology of Problem-oriented Interdisciplinarity and Pragmatism. Interdisciplinarity analyses and aims at addressing social issues by involving the clustering of problem-solving disciplines (Gibbons et al., 1994). The problem-oriented interdisciplinarity focuses on "problems and how to handle and solve problems pragmatically" (Schmidt, 2010, p. 40).

Pragmatism investigates individuals' real-life and similar experiences in the world, focuses on occurring issues, and aims to search for solutions and applications. Researchers who follow pragmatism consider their studies based on their values and conduct the research in a way that may yield exciting findings within their values and has meaningful social significance. Furthermore, the interactions between the researcher and the participants vary based on the need to answer questions (Teddlie & Tashakkori, 2009). In the research process, based on the purpose and stage, pragmatism alters and uses different or hybrid methods to develop significant applications and evaluate the knowledge for specific populations. For this reason, researchers

often link pragmatism with MM in a single research project (Creswell & Plano Clark, 2018; Goldkuhl, 2012; Tashakkori & Teddlie, 2003).

Mixed methods (MM)

A MM study is a type of "research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry" (Tashakkori & Creswell, 2007, p. 4).

Morse and Niehaus (2009) also define MM research as a "systematic way of using two or more research methods to answer a single research question. It includes using two (or more)

qualitative or quantitative methods, or it uses both qualitative and quantitative methods" (p. 9).

Furthermore, Teddlie and Tashakkori (2009) describe MM as "a type of research design in which qualitative and quantitative approaches are used in type of questions, research methods, data

collection and analysis procedures, and/or in inferences" (p. 7). Creswell and Creswell (2018)

further explain this approach as a combination of "both qualitative and quantitative forms" (p.

331), which includes "philosophical assumptions, the use of qualitative and quantitative

approaches" (p. 331). The philosophical assumption of using MM is that "the integration of

qualitative and quantitative data yields additional insight beyond the information provided" (p.

41) by either form of data alone. Such insight benefits me to holistically understand PSIS's

experience with public transit in the GTA and the GVA, to consider what support universities

can provide and what types of work university leaders can initiate in meeting their commute

needs and assist their development. As a result, PSIS can achieve success during college life.

MM not only collects and analyzes both types of data but also involves "the mixing or integrating of both approaches in a study" (p. 331). Regarding data analysis and interpretation,

Bryman (2007) opines that MM allow researchers to "analyze, interpret, and write up their

research in such a way that the quantitative and qualitative components are mutually illuminating" (p. 8).

The quantitative data provides a solid data foundation for this study and confirms and elaborates on areas of investigation for the qualitative phase. Meanwhile, the qualitative procedure validates the quantitative measures and extends this study's scope (Russek & Weinberg, 1993). Therefore, compared to a single Quantitative (QUAN) or a Qualitative (QUAL) method, a MM approach can yield more holistic data for this study.

Convergent MM Approach Design

This study used a Convergent MM approach design (Creswell & Creswell, 2018; Crewell & Clark, 2018). Two types of data were collected and analyzed separately and simultaneously. The convergent design can yield complementary and holistic data to answer the research questions (Creswell & Creswell, 2018; Morse, 1991). The quantitative data was collected from the 2019 online survey from the SMTO project, while qualitative data were obtained from (a) interview data of the SMTO project; (b) the individual interviews from two public universities, one in the GVA and the other one in the GTA.

Data Selection

In this study, data is selected from the following two sources:

1. The SMTO project.
2. 21 Individual interviews with PSIS.

Data from the above two sources was used to understand PSIS's opinions and experience with the public transit in the GTA and the GVA during the pandemic period and answer the research questions.

The SMTO Project

The SMTO project aims to improve post-secondary students' commute experiences in the GTA by investigating their perceptions and opinions. It includes quantitative and qualitative data. Both are selected to assist the researcher in comprehensively understanding university PSIS's travel experience in the GTA.

The Quantitative Data Selection. The quantitative data is from SMTO Survey 2019, which was conducted and completed before the COVID-19 pandemic. More than 19,000 participants from ten post-secondary institutions in the GTA area participated in the survey and responded to 26 questions. Among all the participants, the total number of PSIS is 2,684; 896 used public transit as their primary travel tool. Information on students' daily travel tools, opinions and behavior towards critical transit issues and policies in the area, satisfaction level about their trips, academic participation, and subjective well-being are covered in the data set (Mitra et al., 2020). Considering that the researcher's study focuses on PSIS' experience, this thesis focuses on PSIS's responses. Their answers allow me to understand (a) PSIS's perceptions about their campus life affected by daily traveling with public transit; (b) the relationship between their satisfaction level with public transit and academic experience. Such understanding benefits me to discover the PSIS's different experience with public transit between the pre-pandemic and pandemic periods, comprehend their issues while using public transit, and consider what support a university can provide to assist PSIS in using public transit for daily

travel. Therefore, the following commute-related statements from the survey were selected to understand PSISs' perceptions of using public transit in the GTA:

1. Commute discourages coming to campus.
2. Commute discourages participating in university activities.
3. Commute barrier to co-curricular experience.
4. Pick courses based on commute.
5. Commute barrier to academic success.
6. Satisfaction with academic performance.

The first five statements are from the survey data about participants' "attitudes", directly or indirectly related to PSIS's campus life affected by their commute. The sixth statement indicates the surveyed participants' satisfaction level about their overall educational experience. Surveyed PSIS using public transit for traveling responded to questions 1-5 with "Yes" or "No" answers and responded to Question 6 on the Likert scale (five-point scale, Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree). Although Question 6 is not directly associated with commuting, it may be used to examine if there is any correlation between academic satisfaction and commute experience with public transit for PSIS. Only data from those PSIS who used public transit and responded to the survey were selected.

The Qualitative Data Selection. The qualitative data is from the interview data in the project. A total of 40 individual interviews (including domestic and international students) were conducted from 2020 to the present. The interview questions were designed to understand university students' experience with public transit in the GTA. Eight of the 40 interviews are

relevant to PSISs' experience with public transit, including five PSISs and three Canadian students who can speak about the public transit experience of PSISs. All the interviewed students are in the GTA. The data selection focuses on the following themes:

1. The general feeling about using public transit.
2. Feeling about the cost of public transit.
3. One-way travel duration by public transit.
4. Experience of safety while using public transit.

The data selected will be segmented into two groups after the selection. The first group is traveling for academics as traveling for education is always students' primary need. The second group is traveling for non-education purposes, including trips to work, shopping, leisure, social, and other activities.

Benefits. The benefits of selecting data from the SMTO project include:

- The scale and scope of the data are comprehensive that are valuable for the researcher's study project.
- As a large-scale survey, the validity and quality of the data are reliable, which provides a solid data foundation for the researcher's study.
- The survey data are free of charge for public access online, saving time and money for the researcher's study.

It is also recognized that the survey 2019 was conducted before the COVID-19 pandemic.

Furthermore, the limited number of interviews with PSISs and limited conversation about their

public transit usage during the COVID-19 pandemic cause insufficient data for the researcher's research, so more interviews with PSISs need to be conducted.

Extra 21 Individual Interviews With PSIS In Addition to the SMT0

In addition to the above eight PSIS-relevant interviews from the SMT0, I conducted 21 individual interviews with PSIS from the GTA and the GVA. 10 were in the GTA and other 11 were in the GVA. PSIS, who had studied in Canada for at least six months, were selected for the interviews. All questions are public transit-related, the purposes of using public transit, the duration of each trip, opinions about the cost and the waiting time, and consideration of other travel tools. The interview recordings were scrutinized in the data selection to remove the repetitions and digressions. In the data selection, the interviewees' personal information was covered. The data were selected according to different public transit-related themes such as travel experience, travel purposes, cost, and safety.

Data Collection

As mentioned in the "Research Design" section, this research project employs a Convergent MM approach (Creswell & Creswell, 2018; Crewell & Clark, 2018), including quantitative and qualitative methods. Quantitative and qualitative data from the SMT0 project were obtained for a preliminary analysis. Furthermore, more qualitative data were collected from 21 individual interviews in the GTA and the GVA. The following explains data collection for the quantitative and qualitative phases.

Quantitative Phase

Quantitative data was collected from the SMTO Project. As presented above, for this study, only 2,684 responses from PSIS in the survey and eight PSIS-related interviews were included in the SMTO project for data analysis. Among all the 26 questions in the survey, only responses to five commute-related questions and one question about their academic performance satisfaction were collected. The collected survey data allow the researcher to have a preliminary evaluation of PSIS's perception toward public transit and their studies.

Qualitative Phase

Qualitative data were collected from (a) the SMTO Project; (b) individual interviews in the GTA and the GVA.

The SMTO Project. Data were collected from eight PSIS-related interviews, focusing on five themes, including general feeling, travel purposes, duration, cost, and safety.

Individual Interviews With PSIS. Interviews allow the researcher to understand interviewees' experiences and opinions by exploring the world from their perspectives and interacting with them. In the interviews, the researcher can respond to their viewpoints immediately. (Brinkmann & Kvale, 2015; Merriam, 1998; Rubin & Rubin, 2012). This technique is often used in PSIS-related studies for qualitative data collection (Glass et al., 2015; O'Reilly et al., 2010; Sawir, 2011; Trice, 2003). The following presents sample size and participant recruitment, interview questions, and interview durations.

Sample Size and Participant Recruitment. A total of 21 participants were recruited for individual interviews. I selected one public university in the GTA and another in the GVA to

recruit participants for data collection. Participant recruitment was conducted through (a) online advertisements; (b) referrals; (c) snowball.

Online advertisements. In the university in the GTA, I contacted the residence office and asked if they could post the recruitment advertisement on their residential online platform. After obtaining their permission, I sent the digital copy of the advertisement to the office for posting. The office posted it once a month for two months on their platform. Furthermore, I also posted the advertisement on a graduate student association's online monthly news platform for two months. In the university in the GVA, I contacted an international student-related office and asked if they could post the advertisement on their official webpage. One office staff then redirected and helped me contact the university residence office and obtain permission to post the advertisement for the recruitment on the residential online platform.

Referrals. This approach was only used at the university in the GTA. I contacted staff in an international student-related office at the university. A staff provided this study information to potential participants.

Snowball. This technique was applied in both the GTA and the GVA's universities. The enrolled participants were asked to assist the researcher in identifying other potential participants.

Interview Questions. The following 14 questions were designed to probe PSIS's experience with public transit during the pandemic:

1. Could you please tell me about yourself?
2. In which part of the city do you live? How long does it take you to access public transit?

3. Can you describe how you used public transit during the pandemic? How often? What types of transit? Where do you usually go?/ Do you go to other places apart from university in a day, like work, recreation, or any other purposes?
4. Could you give me some examples of how you use public transit on a "typical day"? Like, go to school, work, go shopping, or for other purposes? What other ways/reasons do you use it?
5. Have you had any issues while taking public transit? Do you feel safe on that trip, both in transit and walking? What do you think of the mask mandate on public transit? And now?
6. Has there been any change in how long your commute has taken since COVID-19?
7. Do you use any public transit tracker? Why? Is it / Are they reliable?
8. What do you think about the cost of public transit?
9. What do you think of the waiting time for the bus?
10. Compared to the pre-pandemic, what are the differences?
11. Do you use other types of travel means instead of public transit? Why?
12. Do you use the shuttle bus service at the University? What do you think of the service?
What do you think of the university's support for international students' commute during the pandemic?
13. In addition to the current support, what other support do you want from the university to meet your commute and other daily needs during the pandemic? Why?

14. Did you compare Canada with other countries for your study? Like public transit costs and other costs?

Online Interviews. Due to social distancing considerations and travel constraints, semi-structured individual interviews were conducted online via a video communication platform. Other advantages of online interviews include (a) cost saving; (b) overcoming the constraints imposed by locations, geography, and travel; (c) flexibility; (d) venue; (e) engagement; (f) fast speed (James & Busher, 2016). The interviews allowed the research participants to retrospectively describe their experiences and issues they met while using public transit and freely express their expectations for commute-related support from the university. It is the most direct and efficient way for the researcher to understand participants' unique needs when using public transit from their perspectives, through which the researcher could collect more specific data for a deep and comprehensive analysis of this study.

Two pilot interviews were conducted with two PSIS in February 2022 to improve the questions and prompts for participants and practice the researcher's interview skills. These two PSIS were not involved in the formal interviews. After these two pilot interviews, one question was revised to ensure the interviewees' experiences could be better explored.

To provide a relaxed and pleasant communication environment and to encourage interviewees to freely express themselves so that the data could be collected thoroughly, each participant was reminded before the interview that they could keep their camera on or turn it off at any time of the interview. Furthermore, the "Live transcript" setting was turned on during the interview to ensure a thorough and accurate understanding between the interviewee and the interviewer. Additionally, I asked for their permission for the interview recording and manually took notes for the interviews of those who denied the recording for data analysis.

Interview Durations. Each interview was 45 - 60 minutes.

Summary

Data collection for this research project was conducted through the existing database from the SMTO project, and individual interviews with PSIS in the GTA and the GVA. The researcher believes that the quantitative and qualitative data collected from these two sources complement each other and provide a holistic dataset to answer the research questions and, as a result, deepen the researcher's understanding of the pandemic's impact on PSIS' public transit usage in the GTA and the GVA.

Data Analysis

In a Convergent MM approach study, quantitative and qualitative data were analyzed separately and simultaneously (Creswell & Creswell, 2018; Crewell & Clark, 2018). The analyses include two parts:

1. The Quantitative analysis. Data analysis of the 2019 survey results from selected questions in the SMTO project (StudentMoveTo Survey, 2019).
2. The Qualitative analysis. It is conducted based on (a) the interview data in the SMTO project; (b) 21 individual interviews with PSIS in the GTA and the GVA.

The Quantitative Analysis

As presented in the Data Selection part, six commute-related questions from the survey were selected and analyzed as they are the closest questions available to analyze PSIS's experience with public transit:

1. Commute discourages coming to campus.
2. Commute discourages participating in university activities.
3. Commute barrier to co-curricular experience.
4. Pick courses based on commute.
5. Commute barrier to academic success.
6. Satisfaction with academic performance.

The above six questions are from the survey data about participants' "attitudes" coded as ps01, ps02, ps03, ps04, ps06, and ps25. They are directly or indirectly related to international students' campus life, referred to below as Questions 1, 2, 3, 4, 5, and 6 (Q1-Q6), respectively. Questions 1-5 are international students' experiences more directly related to commuting. Question 6 concerns international students' general feelings toward academic performance that may not directly relate to commuting. Surveyed PSIS using public transit for traveling responded to questions 1-5 with "Yes" or "No" answers and provided responses to Question 6 on the Likert scale (five-point scale, Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree) are summarized in tables 4.1 and 4.2 in Chapter Four, respectively.

The Qualitative Analysis of the SMTTO Project

In 40 interviews from the SMTTO project, eight related to international students' experience with public transit were selected and analyzed. Among the eight interviews, five are PSIS, including four current PSIS and one former PSIS (international students who later obtained Canadian permanent residency); the other three are Canadians who discussed PSIS's experience with GTA's public transit. The analysis focuses on the following five themes:

1. The general feeling about using public transit.
2. Feeling about the cost of public transit.
3. One-way travel duration by public transit.
4. Commute by public transit during the COVID-19 pandemic.
5. Experience of safety in using public transit.

The Qualitative Analysis of interviews in the GTA and the GVA

In 21 interviews with PSIS, ten are from the GTA, and the other 11 are from the GVA. All of them have stayed in Canada for more than six months. To compare PSIS's experience with the GTA's public transit between the beginning of the pandemic and the mid-pandemic periods; furthermore, to compare PSIS's experience between the GTA and the GVA, the researcher focuses on the following six themes:

1. The general feeling about using public transit.
2. Feeling about the cost of public transit.
3. One-way travel duration by public transit.
4. Commute by public transit during the COVID-19 pandemic
5. Experience of safety in using public transit.
6. Expectations about university support on their daily commute.

Ethical Considerations

In this section, I describe how to keep trustworthiness and confidentiality in the process of this study.

Ensuring Quality and Trustworthiness

For the quantitative phase, ensuring validity and reliability are essential (Creswell & Plano Clark, 2018). The 2019 SMTO survey is the "largest-ever survey" (StudentMoveTO 2019 Report, p. 3), which included 2,684 PSIS's travel patterns and experiences. The scale and scope of the data are comprehensive and valuable for this thesis project. Furthermore, as a large-scale survey, the validity and quality of the data are reliable, which provides a solid data foundation for my study. Only commute-related questions from the survey were selected to understand PSIS's travel perceptions in the GTA to ensure the data was meaningful.

For the qualitative phase, validity is the focus (Creswell & Plano Clark, 2018). In the online interviews, the live transcript function on the interview platform was turned on to avoid misunderstandings resulting from the interviewee or the interviewer's accent and language during the discussion. I used member-check, where the participants were contacted to clarify specific points in transcribing, to confirm whether the interview information was credible and correct. For data analysis, I focused on the same themes in interview data from the SMTO project and the other 21 interviews with PSIS.

Confidentiality and Ethics

Researchers must concern themselves with the ethical considerations to protect participants in each research stage (Creswell, 2018). This interdisciplinary study received ethical

approvals from York University's Office of Research Ethics and all participating post-secondary institutions' ethics boards of research in the GTA and the GVA. Throughout the study, I strictly followed the ethics procedures for human participants outlined by the York University Research Ethics Human Participants Review Committee. These guidelines included using the SMTO project data, participant consent forms, confidentiality procedures, and the release of transcribed data forms. All participants were thoroughly informed of the study's parameters in the participant consent form and at the beginning of the interview. All participants were informed that their participation was voluntary and their right to withdraw from the study without penalty. Furthermore, they could review their own interview transcripts and request modifications if necessary. Additionally, the final report covered all participants' real identities, replaced them with numbers, and used "they" instead of "she" or "he" to cover participants' gender. This study included minimal risk to participants.

Summary

This chapter describes the research design and the rationale for using a MM methodology. Furthermore, data selection, collection, and analysis are outlined. Additionally, ethical considerations are presented.

Chapter Four Findings

Findings

In this chapter, findings from quantitative and qualitative data analysis are presented.

The Quantitative Result

As presented in the Data Analysis part, six commute-related questions from the survey were selected and analyzed as they are the closest questions available to analyze PSIS's experience with public transit:

1. Commute discourages coming to campus.
2. Commute discourages participating in university activities.
3. Commute barrier to co-curricular experience.
4. Pick courses based on commute.
5. Commute barrier to academic success.
6. Satisfaction with academic performance.

Data selection and collection were illustrated in Chapter Three. The following are findings from the SMTO project and the 21 individual interviews.

Responses to Individual Commute Related Questions

Table 4.1 Responses from International Students to Individual Questions

Question *	1		2		3		4		5	
Counts	#	%	#	%	#	%	#	%	#	%
Answered No	543	63%	394	46%	470	55%	510	60%	618	74%
Answered Yes	323	37%	469	54%	384	45%	342	40%	220	26%
Grand Total	866	100%	863	100%	854	100%	852	100%	838	100%

* Question 1. Commute Discourages Coming to Campus

Question 2. Commute Discourages Participating In University Activities

Question 3. Commute Barrier to Co-curricular Experience

Question 4. Pick Courses Based On Commute

Question 5. Commute Barrier to Academic Success

From Table 4.1, For the PSIS who provided answers to Question 1 to Question 5, the respective percentages of participants who answered "No" are 63%, 46%, 55%, 60%, and 74%. The respective percentages of participants who answered "Yes" are 37%, 54%, 45%, 40%, and 26%. The data show that the numbers of participants who answered "No" are more than those who said "Yes" to four of five commute-related questions, which are questions 1, 3, 4, and 5. Question 2 asked about university activities, including academic and non-academic types; it implies that many PSIS are less willing to commute for those activities. It may also indicate that more than half of the surveyed PSIS tend to prioritize academic curriculum over other university activities within their brief time studying in Canada.

Responses to Question about Satisfaction with Academic Performance

Table 4.2 Responses to Satisfaction about Academic Performance

Responses	Number	%
Strongly agree	122	14%
Agree	351	39%
Neutral	211	23%
Disagree	108	12%
Strongly disagree	26	3%
No answer	78	9%
Grand Total	896	100%

From Table 2 for Question 6, a Likert scale (five-point scale) was used to enable PSIS to express how much they agree or disagree with the statement that they are satisfied with their academic performance. Of the participants who provided answers, 14% indicated strongly agree, 39% selected agree, 23% maintained a neutral attitude, 12% chose to disagree, and 3% selected strongly disagree. It shows that the rate of PSIS's satisfaction with their academic performance is much higher than that of those dissatisfied. 53% of international students were satisfied or very satisfied with their academic performance, and 15% were dissatisfied or very dissatisfied with their academic performance. .

Relationship of Commute Related Experience with General Satisfaction with Academic Performance. Question 6 is not directly related to commuting but somehow reflects the general feeling of the surveyed participants about their overall academic experience. In order to see if there is any relationship between any of the individual commute-related questions with this more generic question, the responses to Question 6 are further broken down into two

subgroups, each including those who answered “No” or “Yes” to each of the first questions. The results are shown in Table 4.3 below.

Table 4.3 Academic Satisfaction among Different Responders to Commute Related Questions

Question # *		1		2		3		4		5	
Counts		#	%	#	%	#	%	#	%	#	%
Answer	Total	508	100%	369	100%	447	100%	484	100%	583	100%
	Strongly Agree	84	17%	61	17%	75	17%	75	15%	100	17%
	Agree	237	47%	171	46%	208	47%	222	46%	266	46%
No	Neutral	125	25%	88	24%	107	24%	112	23%	139	24%
	Disagree	53	10%	38	10%	48	11%	61	13%	67	11%
	Strongly Disagree	9	2%	11	3%	9	2%	14	3%	11	2%
Total		308	100%	447	100%	363	100%	325	100%	212	100%
Yes	Strongly Agree	37	12%	60	13%	44	12%	44	14%	19	9%
	Agree	114	37%	179	40%	139	38%	125	38%	74	35%
	Neutral	86	28%	123	28%	104	29%	97	30%	64	30%
	Disagree	54	18%	70	16%	59	16%	47	14%	40	19%
	Strongly Disagree	17	6%	15	3%	17	5%	12	4%	15	7%
Grand											
Total		816		816		810		809		795	
* Question 1. Commute Discourages Coming to Campus											
Question 2. Commute Discourages Participating In University Activities											
Question 3. Commute Barrier to Co-curricular Experience											
Question 4. Pick Courses Based On Commute											
Question 5. Commute Barrier to Academic Success											

Table 4.3 shows some relationship of responses to each of the commute-related questions (Q1-Q5) with those of Question 6. Among those who answered "No" to Questions 1-5, the percentages of those who agreed and strongly agreed that they were satisfied with their academic performance are 64%, 63%, 64%, 61%, and 63%, respectively. The differences in the rates of satisfaction among participants who answered "No" and those who answered "Yes" to

Questions 1-5 are 15%, 10%, 14%, 9%, and 19%, respectively, and the differences in dissatisfaction rate of the same group of participants to the Question 1-5 are 12%, 6%, 8%, 2%, and 13%, respectively.

According to the above calculations listed in Tables 1-3, the total numbers and percentages of PSIS who answered "No" to any of the five questions assessing the effect of commuting to the selected activities by public transit are significantly larger than those who said "Yes", indicating a majority of the surveyed PSIS do not have a negative perception toward commute by public transit. At the same time, those participants who answered "No" to the commute-related questions have satisfaction rates 9% - 19% higher than those who answered "Yes". Likewise, the dissatisfaction rates from participants who answered "No" to the commute-related questions are 2%-13% lower than those who answered "Yes". Although the significance of these differences is yet to be determined ideally by further statistical analysis, the data show a general trend that the participants who did not have negative perceptions towards commuting by public transit are generally more satisfied than those who had negative perceptions.

The Qualitative Result of the SMTTO Project

The analysis focuses on the following themes:

1. The general feeling about using public transit.
2. Feeling about the cost of public transit.
3. One-way travel duration by public transit.
4. Commute by public transit during the COVID-19 pandemic.
5. Experience of safety in using public transit.

The General Feeling about Using Public Transit. In this interview, asking about general feelings about using public transit, participants shared both positive and negative feelings toward public transit. Participants #2, #5, #6, and #8 shared favorable opinions. They indicated that Toronto's public transit system is convenient, accessible, and efficient. Participants #1, #3, #4, and #7 had negative perceptions complaining that Toronto's public transit is unsafe, unreliable, inconvenient, and expensive.

Table 4.4 Positive Feelings about the GTA's Public Transit

Participant	Interviewer's Answer / Comment
#2	Public transit is the first choice for commuting as it is "convenient" and "accessible" although "expensive".
#5	"(Public) transit in Toronto is exceptionally well done". "It operates late at night. It is way more frequent, way more reliable. The one thing is that subways are just way more useful for me as a commuter and more reliable than buses and streetcars."
#6	It is convenient to take public transit to commute between home and campus, although the cost is high.
#8	"Enjoy taking transit" and "it is convenient."

Table 4.5 Negative Feelings about the GTA's Public Transit

Participant	Interviewer's Answer / Comment
#1	Public transit is not practical due to the high cost and unpredictable time. Furthermore, the public transit system is unreliable because of the irregular subway schedule. To avoid changing and waiting for the next subway because of the "timing" and other frequency-related "issues", this participant prefers to stay on the same subway line even it causes a longer distance and travel time. Additionally, it is unsafe and has "concerns and fears" "because of the virus" during the pandemic. "Decided to minimize using the public transit" even in the post-pandemic era.
#3	It takes too much time and is slow.
#4	Does not like taking public transit because of the inconvenience. "Bus is obviously very infrequent. So that is a problem. And also takes a lot like way longer because it has to stop at all these places in the neck, on the road." "Train is very inconvenient because the nearest train station for us is like really far, you are gonna have to take like, one or sometimes two buses."
#7	Taking public transit is slow. It takes the same amount of time to use public transit as riding a bike to commute between home and campus.

Feeling about the Cost of Public Transit. In eight interviews, when asked if the public transit in Toronto was considered expensive or not, six participants considered it expensive, while the other two believed the price was reasonable or acceptable.

Table 4.6 Feeling about the Cost

Participant	Expensive	Interviewer's Answer / Comment
#1	Yes	The student discount does not help to mitigate students' financial burden. It is "expensive" and "pricy". "I have to do like a second job or so to stretch it out in expenses".
#2	Yes	The price is much higher than Waterloo's. "When I came to Toronto was definitely a shock. Definitely much more expensive".
#3	Yes	It is "quite expensive" to "buy a monthly TTC pass".
#4	No	"I think that is totally fair. I would not mind paying money." "Cost would not be a factor for me."
#5	No	The cost is "extremely reasonable" and is "happy with the cost."
#6	Yes	It is an issue take to afford the monthly passes for international students.
#7	Yes	The price is high.
#8	No	The fare is acceptable

One-way travel duration by public transit. In eight PSIS-related interviews, two participants (#4 and #5) did not share travel duration information; six participants shared their one-way travel time, which ranged from 30 minutes to two hours.

Table 4.7 One-way Travel Duration by Public Transit

Participant	Interviewer's Answer / Comment
#1	(I usually need) "an hour within the subway" or longer in winter because of the unexpected delay
#2	In summer, it takes "a half-hour" in the subway and "10-15 minute walking time" to arrive on campus. In winter, it takes "an hour and a half," and it "always happens".
#3	(I) spend two hours on travel between home and work location daily.
#6	Going to school takes "an hour and a half" by bus or "about 45 minutes" by train. For work, it takes one hour to travel.
#7	It takes around "40 minutes" by train from home to campus.
#8	Many international students spend more than one hour to get to campus.

Commute by public transit during the COVID-19 pandemic. When asked how they commuted during the COVID-19 pandemic, except for one participant (#4) who did not share public transit usage information, seven participants said they avoided or stopped using it during the pandemic. This finding clearly shows that the COVID-19 pandemic changed the commute patterns of international students with a reduced or almost abandoned use of public transit and an increase in other means such as driving or adopting work from home mode.

Table 4.8 Commute by Public Transit during the COVID-19 Pandemic

Participant	Opinions / Commute Mode
#1	Afraid of "using any of the public transit". It is risky to take the subway to visit families one time and "stopped using public transit" after the visit and is trying to "avoid taking" the bus and subway.
#2	Drives a car for commuting instead of using public transit because of the discomfort of wearing a mask on transit.
#3	Has not taken public transit because of the remote learning mode at home. "For a long-distance or something, for whatever reason, I would just go with my dad in the car." "I would rather take the car... and feel much safer in the car." "I feel much safer there and be healthier rather than taking the public transport."
#5	"I am trying not to be on anywhere more public during the pandemic," and "at this moment. No, I would not use it (public transit) during rush hour at all, under any circumstances. And I just do not use it as much because there are fewer places for me to go. So, I do not think it will affect my behavior in the future, but certainly, at the moment, it does."
#6	Stopped using public transit and has used a personal vehicle for the commute instead.
#7	Stays at home with family members as long as possible and does not use public transit. "We all stay home" and "I should be commuting. But I am not going to."
#8	Has not used public transit since March 2020 and walks to grocery stores if necessary.

Safety of Using Public Transit. Although participants' experiences about safety during commute using public transit varied, most felt safe using public transit. Furthermore, participant #4 shared a mixed feeling about safety, and others shared that the safety also depended on the travel time and the route's location.

Table 4.9 Safety of Using Public Transit

Participant	Experiences & Opinions	
	Feeling Safe	Answer/Comment
#1	No	Some bus stops and subway stations are unsafe and "scary at night". This student was scared by an issue on the subway, which caused an injury, and needed to call a family member and seek help. "I called my sister was in some ways because there is an injury". After the incident, this student started worrying about safety in public transit.
#2	Yes	Did not worry about the safety on transit" in terms of safety, I have never really had any issues even going at night. Like I have never been concerned at all".
#3	Yes	"Really always felt safe" and "unsafe feeling" never exists in mind.
#4	Yes/No, mixed	Overall, it is safe. "If I take the bus to (Hamilton) downtown... there is a bit of a homeless problem there. And I have heard that those places are sketchy." "Unsafe neighborhoods."
#5	Yes	"eminently safe"
#6	Yes	"I lived in North York, and this an apartment, and I felt very secure in living there. And just in terms of the stations, I found, like I did not have any negative experiences getting home or getting to school." Would use Uber or Lyft would be the primary option if going home late at night.
#8	Not really	"I feel the least safe is that Downsview Park" because "it is still quite dark. And there's not really any like workers around, so I am kind of ominous." Furthermore, the student states that worries about the security in Pioneer Village station as "it is kind of dark, too".

In summary, in all these eight participants, 50% had a positive feeling about Toronto's public transit and believed it is convenient, accessible, and efficient. The other 50% had a negative feeling indicating the transit system is insecure, unreliable, inconvenient, and expensive. Regarding the cost of public transit, 63% considered it expensive, and 37% indicated the price is reasonable or acceptable. For the commute by public transit during the COVID-19 pandemic, all seven responders indicated they stopped using public transit and changed to driving or walking. Their changed commute patterns align with most public transit riders' travel modes, which caused the sharp decline in ridership at the beginning of the pandemic in the GTA. For safety, 71% of responders considered public transit to be secured, and 29% expressed their concerns focusing on onboard security, neighborhood safety near public transit, and anxiety due to the insufficient light in public transit stations.

The trends in two sets of analyses suggest that the high cost and safety concerns for Toronto's public transit may also discourage some PSIS from coming to campus and commuting to participate in university activities. These issues may also impact their academic success and satisfaction levels of academic performance, as indicated in the quantitative analysis. The fact that most PSIS select their residential locations near public transit may explain why most PSIS did not express negative perceptions toward commuting to campus in general, as shown by the quantitative analysis of the 2019 survey.

Summary. The above two analyses show that the number of PSIS in the GTA satisfied with their academic performance is higher than those dissatisfied. Furthermore, it shows a general trend that the participants who did not have negative perceptions towards commute had higher satisfaction rates than those who had negative perceptions. Additionally, the high price

and safety issues may also negatively affect participants' commute to campus to participate in various university activities, ultimately affecting their academic success and satisfaction.

The Qualitative Result from Interviews in the GTA and the GVA

The analysis focuses on the following six themes:

1. The general feeling about using public transit.
2. Feeling about the cost of public transit.
3. One-way travel duration by public transit.
4. Commute by public transit during the COVID-19 pandemic
5. Experience of safety in using public transit.
6. Expectations about university support on their daily commute.

The General Feeling About Using Public Transit. In this interview, asking about general feelings about using public transit in the GTA, all participants shared negative feelings. They complained that Toronto's public transit system is inconvenient, too crowded, expensive, unsafe, stuck, confusing, complicated, and unreliable. Furthermore, the service reduction is frustrating.

Table 4.10 Negative Feelings about the GTA's Public Transit

Participant	Interviewer's Answer / Comment
#9	Waiting for the bus is "stressful", especially it takes longer on "rainy days or snowing days". It is difficult to breathe with a mask while wearing a religious outfit.
#10	<p>Worry about the insufficient social distancing on public transit. "It is annoying" that "they (public transit provider) took away the block seats on the subway and on the bus."</p> <p>Regarding the price, "I think it could be better because a lot of university students are working minimum wage jobs, so I feel they (TTC) could be a little bit more generous."</p>
#11	"I feel stressed" when I take the subway as sometimes it stops working without notice. Getting stuck underground "was a bad experience, and I don't want to recall it."
#12	"It's pretty scary" when "I ride to work", especially at the beginning of the pandemic.
#13	Public transit in the GTA is expensive. "It's not that fun to have to spend lots of money for public transit". Also, "the quality of the public transit should be improved."
#14	The public transit system is confusing and hard to understand.
#15	Taking public transit is unsafe because (a) strange people on the bus cause anxiety; (b) followed by strangers after getting off the bus; (c) homeless people ask for money in the subway station.
#16	"I'm feeling very unsafe almost any transit or any bus" "I wish I could get away with not using it (public transit), but I can't."
#17	The service is not reliable, and unexpected delays always happen. Also, it takes "too long" to wait, "so try to avoid taking the bus".
#18	"I was frustrated and furious" about the service reduction.

Participants in the GVA shared positive and negative feelings toward public transit when they were asked about general feelings about using it. Participants #21, #25, #27, and #29 shared favorable opinions. They indicated that Vancouver's public transit system is convenient, affordable, efficient, and reliable. Participants #19, #20, #22, #23, #24, #26, and #28 negatively complained that Vancouver's public transit is inconvenient, unsafe, dirty, slow, and lacks social distancing. #26 further reported that they have a hearing impairment, and the mandatory mask policy causes difficulties in their lip readings and understanding others on public transit.

Table 4.11 Positive Feelings about the GVA's Public Transit

Participant	Interviewer's Answer / Comment
#21	I am satisfied with the GVA's public transit as "it (the bus) comes quite often and the trains are quite efficient"
#25	Public transit is affordable "with the U-Pass program" for university students.
#27	The service is stable compared to the pre-pandemic period.
#29	Generally, I feel okay; however, when I see someone who did not pay their fare on board, I think it is unfair to passengers who paid the fare.

Table 4.12 Negative Feelings about the GVA's Public Transit

Participant	Interviewer's Answer / Comment
#19	I am "not satisfied" and "I think it could be better" as waiting for the bus is "not a good experience".
#20	Public transit is not practical and "not that convenient to be honest", so "I try to avoid that as much as possible."
#22	It is not safe to take public transit during COVID due to anti-Asian attacks.
#23	The bus passes by some dangerous areas as there were "a lot of homeless people" who are "smoking and doing illicit drugs" there. Those people "don't look clean"
	When the mask mandate requirement was lifted, I think that "is (a) big problem" so "personally, I will wait" and keep wearing my mask on public transit.
#24	Everyone on public transit tries to maintain social distancing. I believe that "social distance is not only about physically (but also) like emotionally". Meanwhile, "I care about how others behave", "I feel a lot of people they don't care about others" on the bus or SkyTrain.
#26	Public transit is "inconvenient" as "it's very complicated and it's kind of a hassle to get from one place to another" This participant also stated that the mandatory mask policy is essential for public health; however, they rely on lip reading to understand others. The mandate causes them difficulty in understanding others whose lips are covered by masks. "I am deaf and hard of hearing" "the mask mandate basically like I am cut off on my form of communication" "I don't really like the mask mandate um but yeah it was definitely necessary for public health"
#28	Public transit is dirty. "The bars for holding on the bus or train are filthy." "I felt they were filthy so I always use my hand sanitizer when I grab it. I'll use sanitizer or go straight to the washroom and wash my hands" after getting off. It is inconvenient and it takes too much time to access public transit. "I have to walk more, spend more time" "I try not to take public transit if it's not a necessary trip" "I don't like going with public transit" due to "time saving, being secure", and it is difficult to carry many stuff after grocery shopping.

Feeling About the Cost of Public Transit. In ten interviews, when asked if the public transit in the GTA is considered expensive or not, 90% of the participants complained about the high price and yearly price raise and felt stressed about the cost; only 10% considered the cost acceptable.

Table 4.13 Feeling about the Public Transit Cost in the GTA

Participant	Expensive	Interviewer's Answer / Comment
#9	Yes	"It's expensive." Every time, this student tried to complete the travel within 2 hours to avoid being charged another fare.
#10	Yes	It is expensive, and "it had definitely gotten more and more expensive" compared to "when I (newly) moved to Toronto in 2016." " I think it (the price) could be better because a lot of university students are working minimum wage jobs, so I feel they (TTC) could be a little bit more generous."
#11	Yes	"The public transport (price) is a bit high, especially for students."
#12	Yes	"It is too expensive." "Every year I've lived in Toronto they have raised the price of TTC, and I don't really think they've increased service commensurate with the price, though." "The price of TTC has increased by like 75 cents since I first moved here"
#13	Yes	It is expensive. "(The) public transportation is expensive" "in most of the countries the students have a discount."
#14	Yes	It is expensive, and "When I was paying, it was a little bit stressful for me."
#15	Yes	The commute is expensive — \$3.25 for one trip and \$6.50 for a round trip between campus and home.
#16	Yes	"It is a bit too expensive for me." And "there is not (a) reduced fair for students."
#17	No	"Acceptable and reasonable" compared to the public transit fare in another North American metropolitan city.
#18	Yes	I felt "very expensive" when this student was a newcomer in Toronto.

In 11 interviews, when asked if the public transit in the GVA is considered expensive or not, three participants considered it expensive, while the other eight believed the price is affordable or reasonable with the U-Pass program provided by the university.

Table 4.14 Feeling about the Public Transit Cost in the GVA

Participant	Expensive	Interviewer's Answer / Comment
#19	Yes	The price is high, and "it is expensive" compared to my home country, even with the U-Pass program.
#20	No	"The price is great" with the U-Pass program.
#21	No	The U-Pass "is quite a good deal." "I do get unlimited rides, (and) I can use the card as many times as I want for that semester."
#22	No	"I really like it (the U-Pass) because I can use the public transit without limitation" "Now I have the U-pass, so I do not care about it."
#23	No	The U-Pass "price is good" and affordable, allowing me to use public transit as often as I need.
#24	No	"As a student, I think it's manageable because my tuition includes the U-Pass fee."
#25	No	"It is cheap with the U-Pass."
#26	Yes	It is a little bit expensive for me.
#27	No	"I have a U-Pass Program" "I think this (the price) is very good." "compared to the (adult) monthly (pass) fee, it (the U-Pass) is really cheap."
#28	No	The U-Pass is affordable and efficient. But if I need to pay for the bus or sky train out of my pocket, I think the cost is "a bit pricey."
#29	Yes	"Very expensive" for the adult monthly pass.

One-way Travel Duration by Public Transit. When discussing one-way travel duration by public transit in the GTA, in 10 interviews, three participants (#12, #14, and #17) shared their travel duration to campus, which ranged from 30 minutes to over one hour. For purposes besides

schooling, nine participants reported their travel duration, which ranged from 20 minutes to more than one hour, depending on the transit tool.

Table 4.15 One-way Travel Duration by Public Transit in the GTA

Participant	Interviewer's Answer / Comment
#9	It takes 30 to 40 minutes by subway to the grocery store, about two hours to visit friends, and one hour for entertainment. It takes 10-15 minutes to walk to subway station and 5 minutes to walk to the bus stop.
#10	It takes about 40 minutes to go downtown for dance classes by subway and 15 minutes for grocery shopping by bus. 10- 15 minutes walk to subway station and 5 minutes to bus stop.
#11	About 30 minutes to the shopping center by bus and 35-40 minutes to downtown by subway. 10- 15 minutes walk to access to public transit.
#12	It takes 35-40 minutes to school by subway and five minutes to walk to a subway station.
#13	To visit friends, 45-50 minutes on the bus. A 5-minute walk to the bus stop. To shop for groceries, it takes around 20 minutes on the bus. It takes about 40 minutes by bus for a medical or dental appointment.
#14	"Subway ride was about 20 to 30 minutes" to campus, then walked to the class. For recreation, it took about 30 minutes to get to the destination by subway.
#16	About one hour and 20 minutes to go to the office downtown, a similar time to go to the sports site, and 75 minutes to go shopping.
#17	To class, it takes around 45 minutes by bus and over an hour by subway; however, there is longer and unexpected waiting time for the bus, so the subway for school is preferred. For shopping, it takes about 20 minutes by subway.
#18	It takes about 40 minutes for grocery shopping by bus and one hour by subway to downtown for other purposes.

When discussing one-way travel duration by public transit in the GVA, in 11 interviews, four participants (#24, #26, #27, and #28) shared their travel duration to campus, which ranged from 40 to 90 minutes. For purposes besides schooling, nine participants reported their travel duration, which ranged from 30 to 70 minutes, depending on the transit tool.

Table 4.16 One-way Travel Duration by Public Transit in the GVA

Participant	Interviewer's Answer / Comment
#20	It takes "45 to 50 minutes" for grocery shopping, and "go to Vancouver downtown ... more than one hour" by bus.
#22	Around one hour and 10 minutes to go for shopping by bus.
#23	About half to one hour to get around and "walk the rest of the way".
#24	Around 50-55 minutes by SkyTrain to campus from home.
#25	It takes 30 to 45 minutes to grocery stores.
#26	It takes one hour by bus from the residence to another campus for classes and over one hour to visit friends.
#27	(Bus + SkyTrain) Around 90 minutes to go to the main campus and more than one hour to another campus.
#28	About 40 minutes by bus to school and around 35 minutes to a mall that is for entertainment.
#29	It takes about 40 minutes by bus for work and 30 minutes for grocery shopping.

Commute by Public Transit During the COVID-19 Pandemic. When asked how they commute in the GTA during the COVID-19 pandemic, two participants (#13 and #14) have minimized their usage and only taken public transit on weekends; the other eight expressed that they have used public transit as they needed since 2021. It shows that compared to the beginning of the pandemic in 2020, most PSIS have increased and resumed their public transit usage to meet their daily needs.

Table 4.17 Commute By Public Transit during the COVID-19 Pandemic in the GTA

Participant	Opinions / Commute Mode
#9	Use public transit "several times a week" and prefer to take the subway to go downtown for entertainment, grocery store, and friend's house.
#10	Use public transit "two or three times a week." Usually, "I take the bus to go grocery shopping" and take "the subway to go to my boyfriend's place or go to my friends' places downtown for entertainment."
#11	Take public transit "almost every two days" to the "downtown area to hang out with my friends (and) have some entertainment there" as well as "shopping centers" to buy food.
#12	"Usually take the subway" "three to four times a week," "either to school" or to work or a friend's place.
#13	Only use public transit on "weekends" as all classes are online. The bus is preferred as it is close to walking to the bus stop. Occasionally use the subway.
#14	Only take public transit to "my friends' (places) or to do my shopping" on "weekends" as all classes are online. The bus is preferred as it is close to walking to the bus stop. Occasionally use the subway.
#15	Use buses and subway at least six days a week to go to campus, shop for groceries, and go downtown. Usually, take the bus first and then the subway to destinations.
#16	Use public transit, including bus, subway, and streetcar, "three or four times a week" to go to work downtown and shop for groceries.
#17	Use public transit four or five times per week to attend classes, attend medical and dental appointments, and meet friends.
#18	Use public transit "almost every day" to shop for groceries and other stuff, visit friends, and go for entertainment.

When asked how they commute in the GVA during the COVID-19 pandemic, except for one participant (#22) who has minimized public transit usage, the other ten participants expressed that they have used public transit as needed since 2021. It shows that, similar to the GTA, compared to 2020, most PSIS have increased and resumed their public transit usage to meet their daily needs.

Table 4.18 Commute by Public Transit during the COVID-19 Pandemic in the GVA

Participant	Opinions / Commute Mode
#19	Use public transit as needed. "three to four days" per week. Tries to avoid taking it but have to as it is the only travel tool.
#20	Moved to campus residence to save commute time between home and campus. But has to take public transit to "buy some food" as the food store on campus is very expensive. Occasionally, take public transit to "go to downtown Vancouver" and "see the seaside" for relaxing.
#21	Use public transit "almost every day" to go to other campuses and downtown Vancouver.
#22	Tries to minimize using public transit "in the pandemic, just like once or twice in a week" "to go out for eating or grocery shopping", to "the shopping mall", and to meet friends out of campus. Usage "declined in the pandemic" compared to before the pandemic that was "like three or four times in a week."
#23	Use public transit every day to "go downtown", "friend's house", "grocery shopping", and go somewhere apart from the university for entertainment.
#24	Only use SkyTrain. "(When) I was doing my coursework, I needed to use public transit quite often because I do not live on campus." "Early this semester did use quite often" "to go to the office for working." "After my contract ended, now once a week or twice a week, that would be the most." Now, "I use public transit very rarely" because not "comfortable being in the crowd in public transit."
#25	Use public transit "multiple times a week" to grocery stores or downtown. "On campus, we do not really have a proper grocery store," so I need "to get my groceries, and I have to take a bus." Also, I "use the SkyTrain to go to downtown somewhere or maybe just go out with friends or have to get supplies which are not available around campus."
#26	Need to take public transit "almost every day" to "go to classes" on other campuses, visit friends, and do grocery or other types of shopping.
#27	Use public transit three times during weekdays to go to classes on various campuses. On weekends, take public transit to church and meet friends downtown Vancouver.
#28	Use public transit "five days a week" to "go to school."
#29	Use public transit every day to go to school, to work, and grocery shopping.

Experience of Safety in Using Public Transit. Regarding safety using public transit in the GTA during the pandemic, participants' experiences varied. Two of them felt safe without security concerns. Half participants had mixed feelings about safety depending on the travel time and the route's location. Furthermore, three participants (#10, #15, and #16) shared their insecure feelings while using public transit. They talked about their experiences of being bothered by strangers' behaviors on public transit or being followed by strangers after getting off public transit.

Table 4.19 Safety of Using Public Transit in the GTA

Participant	Feeling Safe	Experiences & Opinions
#9	Yes/No, mixed	This student generally feels safe but feels uncomfortable seeing a person wearing a mask on public transit.
#10	No	This student feels insecure on public transit and says that "you encounter all sorts of people at the subway and you cannot control (what will happen)". Some "homeless people sit on the train" "I feel terrible about it, but I do not know what I can do right, maybe like not sit next to them." "If it is at night, I will not feel safe, especially if, like there are men around me, (I) usually walk with my keys between my knuckles."
#11	Yes/No, mixed	Feel secure on the subway and walk to the subway station. Mixed feelings about taking buses as strange or homeless people on buses sometimes. Those situations are annoying and scary.
#12	Yes	Feels secure on public transit because "Toronto is a very safe city".
#13	Yes	This student feels safe on all types of public transit.
#14	Yes/No, mixed	This student feels safe on the subway but has "discomfort or safety concern for safety on specifically the buses" and feels safe "during the daytime" but not secure at nighttime. This student reports that <ol style="list-style-type: none"> 1. "a couple of times there has just been people who have like asked me for money or who interacted with me"; 2. "more common or being talked to by strangers on the street" "at night, I felt a little less safe, maybe a lot"; 3. at night on the subway, "there is one person was just like walking back and forth on the cars, and every single time he passed me he had one less article of clothing on" "he was taking his clothes off like one by one" "it is just that kind of like unpredictable."

#15	No	<p>The COVID "causes my cautions," so "I always sit at the front but not at the back". This student feels better sitting closer to the driver. Furthermore, "some strange people made me uncomfortable". This student does not feel safe walking home from bus stops late at night and reports, "I came home from the gym at 9 pm, one guy followed me, talked to me, and tried to reach me. Since the issue, I do not walk at night time". Additionally, "homeless people at subway stations asked for money made me uncomfortable, scared, and insecure".</p> <p>For the mask requirement on public transit, the student said, "I prefer people to wear a mask in transit".</p>
#16	No	<p>This student feels that public transit is dangerous and reports that in the subway station a couple of days ago, before this interview, "somebody was pushed onto the track by somebody else".</p> <p>Furthermore, this student reports the following issues using public transit:</p> <ul style="list-style-type: none"> • "Some random person attacks us" when "me and my friends were walking into a subway station". • "in the subway and a random person coming up", "walking around", and " talking to me". "I was not interested, but they still trying (tried) to bother you(me) and talk to you (me)". • "People entering the subway with a cigarette in their hand they are smoking inside the subway, which is not allowed, which is not legal, and it's very dangerous inside the subway." <p>Additionally, this student says, "if it is an unknown area and it is really late, sometimes I do not feel that safe."</p>
#17	Yes/No, mixed	<p>General feel safe during the daytime. Not feel safe at night because there are many strange people, too dark to walk to subway stations, and too dark and quiet at bus stops.</p>
#18	Yes/No, mixed	<p>For the security, this student feels ok as "I grew up in a city with poor security in my home country"; however, this student feels unsafe seeing some people not wearing a mask on the subway.</p>

Regarding safety using public transit in the GVA during the pandemic, participants' experiences varied. Two of them felt safe without security concerns. Six participants had mixed feelings about safety that depended on the travel time and the route's location. Furthermore, three participants (#22, #26, and #19) shared their "scared" or "unsafe" feelings while using public transit, and participants #22 and #19 talked about their experiences of being assaulted on public transit during the pandemic.

Table 4.20 Safety of Using Public Transit in the GVA

Participant	Feeling Safe	Experiences & Opinions
#19	Yes/No, mixed	Most of the time, it is safe to take public transit except for some areas near downtown. At some bus stops, "there are homeless people. It might feel a bit unsafe." This student reports that some homeless people asked him strange questions and money, which makes him not feel safe.
#20	Yes	It is safe and "worry-free" access and on public transit.
#21	Yes/No, mixed	Generally, "it is quite safe," but sometimes, "walking to the bus station and on the bus or the train, there are some terrifying people" who were "doing drugs on the bus" "It might be a bit scary if they approach you" When I need to take public transit and pass by the area with many drug takers and homeless people, "it can be scary but other than that everything else is fine." "I tried to avoid those areas generally, but I have had some experience, and those experiences I do tend to be more cautious, and I go with big groups."
#22	No	This student is scared to use public transit during the pandemic as she experienced "a bunch of students like three or four they were coming from the different side of the street, and they pointed at me ... (and) scream like go to your country and go back" "Until the end of the street they kept yelling at me."
#23	Yes/No, mixed	This student feels safe overall but does "not feel safe during the night on the street" while waiting for the bus or walking to the bus stop in some areas.
#24	Yes/No, mixed	It "depends on which neighborhood." This student saw attacks on Asians on SkyTrain, and she was scared and "stayed out of it" because she is an Asian. Additionally, "on public transit, if I see anyone not wearing masks," actually, "a lot of people do not wear masks, and I'm not feeling safe."
#25	Yes/No, mixed	"Mostly for 99% of the times, I feel safe," but for the bus that goes across an area with "lots of homeless people after 7 pm or 8 pm, I am afraid of traveling along that route" and "I have to be cautious".
#26	No	This student feels "unsafe" when the bus goes by some streets. Some people "sit on the floor" with the "smell of alcohol" on the bus.
#27	Yes	"Overall, I think it's very safe."
#28	No	"I felt unsafe when some people were not wearing masks or coughing on the train or the bus." "As an Asian, I felt very insecure" as "there was a stabbing incident." "But I have to, (and)I have no choice (because) I have to go to school." One time on the way to a bus stop, "there was a guy following me." While "I was waiting for the bus and the guy started talking to me," "he sat next to me," "asked me some personal questions," "I feel insecure all the time (and) was so scared." In another experience, a strange person sat next to this student and kept talking to them. They had to call their friend to pick them up at the bus stop where they got off. "I felt very insecure."
#29	Yes/No, mixed	Mostly, this student feels safe; however, this student feels unsafe when seeing people smoking at the bus stop or drinking alcohol on the bus.

Expectations about University Support on Their Daily Commute. When asked about their expectations to receive university support in meeting travel needs in the GTA, reducing fare prices is what most participants (#9, #11, #12, #13, #15, #16, and #17) wanted. They expected the university could work with TTC to lower the fare price, provide a discount program, or provide financial support. While one participant (#14) hoped the university could provide a more detailed guide about the GTA's public transit system for newcomers, two interviewees (#17 and #18) proposed that the university expand the shuttle bus service. One participant (#10) did not have any comment.

Table 4.21 Expectations about University Support on Their Daily Commute in the GTA

Participant	Expectation
#9	It would be great if the university could work with TTC to offer further "discounts for using the public transit".
#11	This student hoped the university could work with TTC to reduce the Post-Secondary Monthly Pass fare price.
#12	This student expressed, "if there is like one thing they (the university) could do it some kind of discount program that would be most helpful to be" or work with TTC to offer a "reduced fair".
#13	"It is always nice to have some subsidies or some support from the university to overcome the financial situation that we have (in daily commute)."
#14	This student proposed that some staff at the university could offer assistance for new students to understand and use public transit in the city. "I think it would be nice if the transportation office had some information for students, not just international students, you know, like students new to the university in the area on like how to what forms of our like of transportation are best for navigating themselves around the city" or "maybe even like somebody to work with like, do you need a transit pass, or does it make more sense for you to just use on like the pay as you go kind of thing like somebody who is more familiar with it as like offering their knowledge to help you kind of navigate it".
#15	This student hoped the university could offer a discount on a monthly pass and provide a place to activate the monthly pass on campus.
#16	This student expected the university could offer a discount for students to use public transit, provide more information about the shuttle bus service, and expand the shuttle bus route to meet students' travel needs.
#17	This student advised the university to offer financial support for the commute, like other universities that provide student passes, free shuttle to downtown, or reduced-price student tickets.
#18	It would be helpful if the university could provide a shuttle bus for grocery shopping.

While discussing what kind of support they expect from the university to assist in meeting their commute needs in the GVA, most interviewees were satisfied with the cost of the U-Pass BC program. The U-Pass program allows students to access public transit in the GVA, and the cost is significantly lower than the regular adult monthly pass. The program is offered to students under a partnership between TransLink, participating post-secondary institutions, their student societies, and the BC government. Students pay for this pass through the student fees. Two interviewees (#23 and #26) mentioned the fee reduction. Three (#20, #21, and #25) hoped the university could provide shuttle buses or work with TransLink to increase bus frequency on campus. Interviewee #26 also expected free masks provided by the university.

Table 4.22 Expectations about University Support on Their Daily Commute in the GVA

Participant	Expectation
#20	It would be helpful if the university could "provide the kind of (shuttle)bus for the transportation between (different) campuses." so that this student can take courses on different campuses. Furthermore, this student mentioned that a "3% - 5% (student) fee raise is acceptable if the university can provide shuttle buses".
#21	This student hoped the university could work with TransLink to increase bus frequency on campus. "I'd like to see more buses come more often, I think, is that way that would really help not pack the buses like sardines every morning, which is very unsafe."
#23	I hope the university could provide "financial support to make up for the cost of commute" and mitigate the financial burden of daily travel.
#25	A shuttle bus service connecting campuses and public transit would be helpful.
#26	I hope the university could offer "a discount of (on) the U-Pass...10% (cheaper)". Furthermore, it would be helpful if the university could provide free masks as they are expensive. Additionally, this student said, "for me, it should also provide transparent mask so I can you know, so no other deaf and hard of hearing people can (use), actually that no communicate and through liberating."

Chapter Five Discussions

This chapter summarizes the findings, examines the connections between the findings and literature, discusses the relationships among the findings, three research questions, and provides the implications and conclusions. The primary purpose of this study is to identify the support needed from universities to assist and support PSIS during a public health crisis, like the COVID-19 pandemic, by investigating their experience with public transit in the GTA and the GVA. This objective was reached by examining PSIS's experience using public transit in both areas. The secondary purpose is to investigate how universities can assist PSIS in achieving holistic student development in Canada from the perspective of supporting them in meeting needs for using public transit in the GTA and the GVA. This purpose was addressed by assessing the findings and examining the connections between the literature review and the findings.

Summary of the Findings

The SMTO data provides valuable insights into the transit experiences of PSIS in the GTHA, enabling me to compare with the GVA. This comparison highlights PSIS's similar and different experiences with public transit systems between these two regions. SMTO includes data on the frequency of daily commuting, reasons for travel, and specific transit preferences of PSIS and assesses the impact of COVID-19 on the PSIS's experiences by examining changes in commuting patterns during the pandemic. Information such as the number of daily trips and preferred public transit modes (e.g., bus and subway) will help us advise public transit providers on how to tailor their services to meet students' needs more effectively. It also benefits us to consider how universities can better assist PSIS in using public transit to meet their travel needs within the city. The SMTO survey 2019 result shows that in the GTA, a general trend is that the number of PSIS who did not have negative perceptions toward commuting to school is more than

those who had negative perceptions. Furthermore, the PSIS-related interview results in SMT0 reveal that half of the interviewees were satisfied with their daily commute by public transit because of its convenience and efficiency; the other half were not and complained about its unsafety, unreliability, inconvenience, and high price. All these issues negatively affect participants' commute to campus to participate in various university activities, thus impacting their academic success and satisfaction. The SMT0 data also indicates an affordable public transit program is significant for students' commutes and daily life. However, the government's decision to cancel the Toronto U-Pass program negatively impacts students who frequently use public transit. The cancellation aggravated some students' financial burden in daily commutes, especially for students living in the GTA neighborhoods with a tight budget or low-income status. The U-Pass program provides equity of opportunity for all students to access public transit. Its cancellation implies the deprivation of such equity for students that is improper for governance. As Toronto's vital public actors, public transit providers and universities must actively initiate a negotiation with governments to make an affordable program that can assist those who rely on public transit in meeting their needs while using the service rather than a "one size fits all" practice of either implementing or canceling the U-Pass program to all students in the city.

In my interviews with PSIS in the GTA, all participants had negative feelings about Toronto's public transit and complained about the system's confusion and complexity and the frustrating service reduction in 2020. Furthermore, the PSIS with hearing impairment reported the inconvenience caused by the mandatory mask policy, which resulted in difficulties in lip reading and understanding others in public transit. In the GVA, the number of PSIS generally satisfied with public transit is less than those not. The satisfied PSIS were happy with its

efficiency, affordability, and stable service even during the pandemic. Those with negative perceptions complained about the long waiting time and unreliability of buses, inconvenience, insecurity due to the racist attack, unsafe surroundings of bus stops, costly regular tickets, and filthy environment on public transit.

In the following section, three research questions are discussed:

1. What is PSIS's different experience with public transit in the GTA and the GVA?
2. What are PSIS's needs while using public transit?
3. What is the significance of university support for assisting PSIS in using public transit during the COVID-19 pandemic for their development?

What Is PSIS's Different Experience With Public Transit In The GTA And The GVA?

I discuss PSIS's experience in the GTA and the GVA from the following perspectives:

1. General feelings about using public transit.
2. Feeling about the cost of public transit.
3. Experience of one-way travel duration by public transit.
4. Commute by public transit during the COVID-19 pandemic.
5. Experience of safety in using public transit.

General Feelings About Using Public Transit

When the survey was conducted in 2019, before the COVID-19 pandemic, GTA's public transit ran regularly, and all PSIS who relied on it could use it daily without many interruptions.

Therefore, most PSIS did not have negative feelings. However, at the beginning of the pandemic outbreak in 2020, public transit agents, like TTC, implemented a service reduction in March and continued adjusting their service according to the number of passengers. The service reduction caused irregular frequency, less route selection, longer wait time, and extra travel duration. Most PSIS could attend their classes remotely during the pandemic in 2020 and 2021; meanwhile, they still needed to take public transit for grocery shopping, medical or dental appointments, or other purposes. The issues caused by service reduction seriously interrupted their daily commute. One participant shared that the cancellation of a bus route caused their absence from weekly workout events. Another participant had to walk 30mins to the exercise location because of the bus route change. These inconveniences impacted PSIS's travel experience with public transit. In addition to the frustration and inconvenience caused by the service reduction, PSIS also grumbled that the transit system is overcrowded during peak-hours, pricey, unsafe, confusing, too complicated to understand, unreliable, and the unexpected subway stuck in a mid-way. Those willing to purchase the TTC Post-Secondary Monthly Pass complained about the complicated and inconvenient procedure that caused them not to buy the pass.

The mask mandate on public transit was implemented during the pandemic and was crucial to reducing virus transmission; however, it also created inconvenience and difficulties for individuals with hearing impairments. #26 reported, "I am deaf" and "the mask mandate basically like I am cut off on my form of communication." The mandatory mask policy effectively curbs the virus transmission; however, it also causes deaf people to struggle to communicate with others during the pandemic. Gutierrez-Sigut et al. (2022) found that more than 90% of deaf people struggle to commute during the pandemic and identified that the mandatory mask policy generated deaf people's difficulty communicating with people wearing

masks and caused them to lose information and feel isolated from the public. Public transit equity emphasizes consistency in all riders' rights and experiences. Policymakers should consider what aid they can provide to deaf riders to improve communication while keeping them safe by using masks during their commutes.

Although social distancing was advised on public transit, buses were still packed in rush hours, which caused the distancing not to be possible. Further, some interviewees reported they were scared when seeing some riders without masks on the subway or bus. The lack of social distancing and riders without wearing masks made PSIS feel unsafe and uncomfortable on public transit. The City of Toronto claims that they value public transit users' experience and aims to encourage more people to use the transit. In the City of Toronto Transit Design Guide 2022, safety, intuition, convenience, comfort, and delight are six core values of riders' experience. In a public health crisis like the COVID-19 pandemic, policymakers should insist on implementing the mask mandate in transit, which was proven effective in reducing the infection risk. The implementation will make more riders, including PSIS, feel safer when using the transit. Furthermore, equity was not included as one of the core values in the Guide 2022; however, the transit price was a particular concern for most interviewees. Their thoughts about the cost of public transit will be discussed separately. Policymakers should consider seriously providing an affordable price for post-secondary students to use public transit.

In the GVA, public transit was also severely impacted by the pandemic, which caused a dramatic drop in ridership in 2020. However, the bus fare suspension between March 20 and June 1, 2020, significantly mitigated PSIS's financial burden on daily travel. Furthermore, stable service during the pandemic also met participants' travel needs. An interviewee felt bus and Skytrain services remained the same quality compared to the pre-pandemic period. The City of

Vancouver Transportation 2040 Plan aims to enhance public transit capacity and provide "fast, frequent, reliable, fully accessible, and comfortable" (p. 33) transit service to people. Improving bus frequency is significant as it directly affects PSIS's experience with public transit. For example, one participant had a negative feeling about public transit and told me that waiting for the bus was "not a good experience". For example, on a heavy-used bus route on the campus where I collected data, the service often got canceled without any notification during weekdays and caused students to wait more than 30mins to wait or have to take another bus. Improving the reliability and frequency, especially on heavy-used bus routes, can significantly enhance PSIS's satisfaction level with public transit. To save riders' bus wait time, public transit providers in British Columbia have expanded real-time bus tracking apps, such as *NextRide*, to all routes, they operate across the province in 2022; however, not all PSIS can afford the monthly cell phone data fee and access the app. Therefore, expanding coverage of the "Automatic Vehicle Location" (AVL) technology system to each bus stop is necessary. In this way, the riders who do not have access to the app can see a bus's status in real-time to better estimate its arrival time at specific stops and better plan their trips. Furthermore, providing a more frequent bus service is essential. It means a maximum of 15 minutes wait for the next bus, rather than 20 or 30 minutes, on frequent-used bus routes, during weekdays.

PSIS in the GTA and the GVA have similar concerns about long wait times for buses and public health safety and reliability on public transit. However, while GTA's PSIS complained about the high cost of public transit, most of their GVA counterparts were satisfied with the stable local public transit service and travel expenses during the COVID-19 pandemic.

Feeling About The Cost Of Public Transit

As mentioned in the literature review section, many PSIS in Canada came from semi-periphery or periphery countries. They came to Canada with a limited budget to look for better education and more employment opportunities after graduation to ameliorate their economic condition and improve their quality of life. They live frugally and rely on public transit instead of owning a personal vehicle during their academic pursuit. The cost of public transit significantly affects their daily travel means.

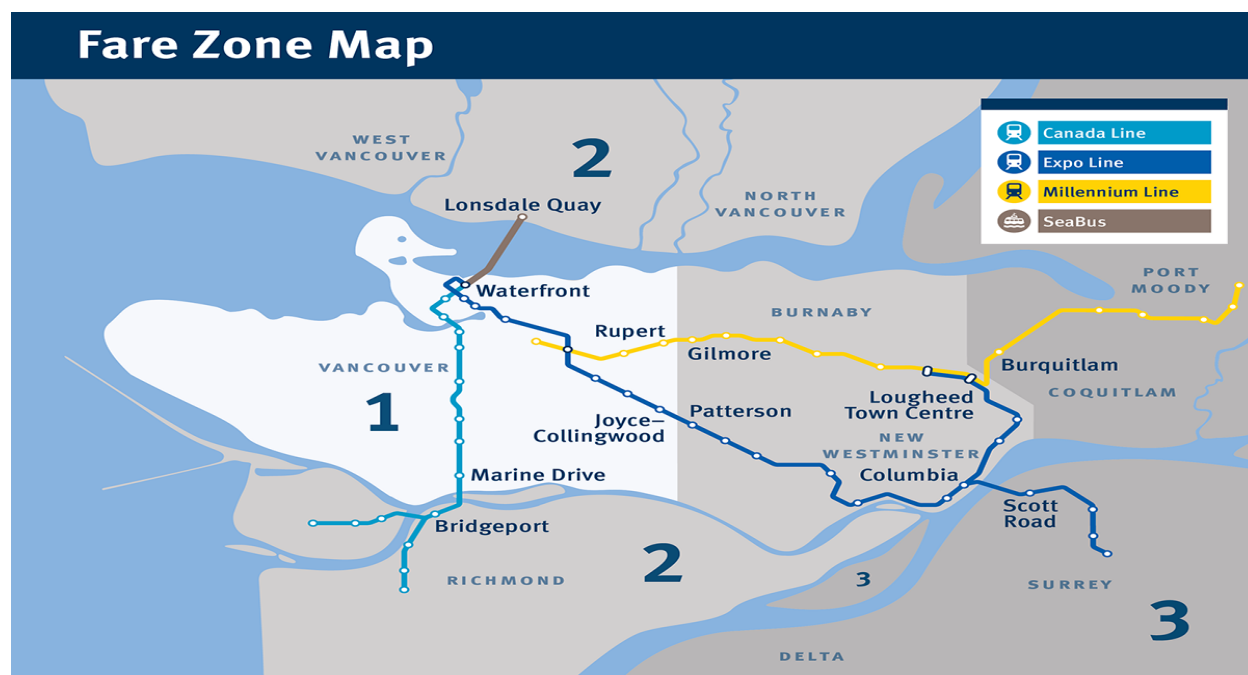
Findings in this study reveal that 74% of PSIS in the GTA complained about the high cost of public transit. They even felt stressed about the travel and living expenses because of (a) the high price; (b) their financial status in Canada during the pandemic. Regarding the transit price, a one-ride TTC ticket costs \$3.20 paid by PRESTO card stored value or \$3.25 paid by cash, and a Post-Secondary Monthly Pass costs \$128.15. For a full-time employee, this expense may be affordable; however, for most PSIS from semi-periphery or periphery countries, the price can be a burden. Considering PSIS financial status, before the pandemic, they had opportunities to earn some income by working on or off campus, even though the income might be limited. In Ontario, the student minimum wage rate is 14.10 per hour (the Government of Ontario, 2022); in British Columbia, the rate is 15.65 per hour (the Government of British Columbia, 2022).

Choi et al. (2021) demonstrate that more than half of PSIS's gross annual income was below \$20,000 before the COVID-19 pandemic (Statistics Canada, 2019), about \$1,670 monthly. This number is 34% lower than the median entry wage for new immigrants and 46.5% lower than the Canadian median wage. New immigrants are those who have been in Canada for less than five years (Statistics Canada, 2021). The PSIS's pre-pandemic income data shows that in the

GTA, they had to spend more than 8% of their monthly net income if they purchased a \$128.15 TTC Post-Secondary Monthly Pass. It was a significant portion of their income. The high price of the program causes many PSIS to consider it unpractical. Even participants from core countries also complained about the program. #12 did not believe the monthly pass is "a very effective program" and said, "if I just pay with the fare, I am still spending less money (than buying the pass)." #14 also said, "it would be great if it were more affordable," and "I had to take it more than two times a day, either five days a week or seven days a week (to make it worth it)".

In the GVA, PSIS using the U-Pass had a completely different opinion about the public transit cost. Most interviewees were satisfied with their expenses on public transit by using the U-Pass. Compared to TTC pricing, in the GVA, Translink's fare is also expensive. There are three fare zones across Metro Vancouver, and the fare is determined based on the zone riders need to travel.

Figure 5.1 Pricing and Fare Zone



Source: Translink (2022). Pricing and Fare Zones.

For example, a 3-zone adult ticket costs \$4.70, and a 3-zone monthly adult pass costs \$185.20. The adult monthly pass may not be expensive for a full-time employee; however, for an PSIS with limited-hour work and income, the expense of the pass can be a financial burden. Fortunately, the U-Pass significantly lowers PSIS transit fees. During the data collection from April to July 2022, the U-Pass fee was \$173.40 per academic term. The fee increased to \$176.80 in the academic year of the 2022 Summer to the 2023 Spring. Average to monthly, PSIS only needs to spend \$44.2 for unlimited public transit usage within three zones. The expense is less than 24% as a Translink 3-zone adult monthly pass. Compared to a \$128.15 TTC's Post-Secondary Monthly Pass in the GTA, the monthly cost is 65% lower, thus much more affordable for PSIS.

Speaking of PSIS's financial status, the pandemic significantly impacted their income. In the 2020 and 2021 academic years, many PSIS lost their on-campus jobs due to campus closure. Worse, many businesses were closed due to the ongoing COVID-19 outbreak, thus causing them to lose their off-campus working opportunities. Despite facing financial hardship, PSIS in the GTA still needed to pay the same fare for using public transit; however, the fare suspension in the GVA allowed PSIS to take public transit free of charge. Although PSIS in both the GTA and the GVA reported that their university did not support their daily commute, the U-Pass program in the GVA mitigated PSIS's financial burden to some degree, especially for those who lost their jobs and relied on their family's financial support.

Considering the GTA's high cost of public transit causes PSIS's stress and thus limits their daily commute as a result, particularly when their income shrunk during the pandemic. It is necessary to consider equity, which has a "more instrumental meaning" (Hertel et al., 2016, p. 9) in a city's public transit operation, as the seventh value in the City of Toronto Transit Design

Guide in the future. Public transit equity includes affordable prices and fair service allocations that benefit all individuals and social groups with different abilities and needs, regardless of their financial and social status, personal characteristics, and ability (Yeganeh et al., 2018; Litman, 2020). Transit equity prioritizes the needs of individuals in disadvantaged situations of finance, social status, and physical or mental ability (Yeganeh et al., 2018). Policymakers should charge users reasonably and provide extra support, such as discounts, to low-income groups and communities (Litman, 2020), and planners should provide a public transit system that "better responds to the needs of disadvantaged people and communities" (p. 42).

For PSIS, affordable public transit is significant for their daily traveling. The SMTTO survey 2019 indicates that many PSIS are less willing to commute for university activities. The high cost of public transit may be one of the reasons. On the contrary, in the GVA, the affordable U-Pass program allows PSIS to travel by public transit with much less concern about the cost. It is evident that PSIS in the GTA needs an affordable public transit service; therefore, implementing programs similar to U-Pass or semester transit passes with a discount rate in all post-secondary institutions in the GTA is essential to lower PSIS's expenses on public transit and reduce their financial burden during the pandemic.

In addition to affordability, policymakers in the GTA should consider another essential component of equity, fair service allocation, while deciding the pricing for different groups of riders. Fainstein (2010) argues that the essence of fairness in equity essentially improves disadvantaged groups' situation in public resource distribution; otherwise, these groups "would suffer from relative deprivation" without government support (p. 37). As mentioned earlier, more than 50% of PSIS's monthly income was less than \$1,700 (Choi et al., 2021). Their income seriously reduces because of the lousy economy during the pandemic. In the GTA and GVA, the

two most expensive areas in Canada, equitable public transit systems would significantly reduce their financial burden in daily commutes and provide them with a sustainable way to access education, jobs, healthcare services, social events, and recreational activities.

Experience of one-way travel duration by public transit

Extended travel time is one of the critical challenges for PSIS in both the GTA and the GVA. This issue results from the lack of a rapid transit system, low-frequency service, and required several-time connections, especially in the suburbs. In the GTA, participant# 16, who lives in the suburb, takes public transit for daily classes. First, this student must take a bus to TTC subway line 3, later transfer to line 2, and then transfer to line 1 to the university. Including wait times, they take 80-90 minutes to travel from home to campus for a one-way trip. Only for education, this student must spend more than three hours traveling between home and campus every day. Participant# 17 shared that they can take either buses or the subway to campus. Buses usually take 45 minutes, and the subway consumes more than one hour. However, they prefer the subway because it is more reliable than unpredictable buses. The long commute duration may also explain why many PSIS in the GTA, especially those who live in the suburb, are hesitant to participate in campus activities, as the SMTTO survey 2019 data implies.

Many PSIS try to take as many courses as possible each term to finish their studies as early as possible. In the GVA, most participants take public transit to classes for more than three days per week. They take at least 45 minutes for a one-way trip to campus. Longer time on buses is needed for some participants. Participant#27 must attend two different campuses for classes on three days in an academic term. This PSIS must take three buses in the mornings, which usually takes about 90 minutes, to get to one campus for daytime classes. Then this student took another

bus to another campus in the afternoons for a nighttime class. It took this student more than two hours and a half on buses, for a one-way trip, to classes. After this term, this PSIS only takes classes on one campus to avoid extra travel time. During the interview, this student reported that some practical courses are only available on another campus each term, but they cannot take them due to the extra travel time.

In addition to attending classes, PSIS take public transit for other purposes, such as going to work, grocery shopping, friend visiting, medical or dental appointments, and social activities. In the GTA, it takes participants an average of more than 40 minutes by public transit from home or campus to other locations. Participant# 16 also takes public transit to work and shop groceries. This student works in a hybrid (on-site and remote) mode and takes public transit three to four days per week during the pandemic. It takes them "one hour and twenty minutes to go to the office" and 75 minutes to shop for groceries from home for a one-way trip. This student must spend more than two hours commuting if they need to. They shared that long commutes reduce their willingness to participate in campus and other social activities. Those who live on or near campus also experienced long travel durations on public transit to other locations, such as grocery shopping, medical or dental appointments, or meeting friends somewhere in the city. In the GTA, participants# 11 and #18 shared that it takes them about 40-45 minutes by bus from the residential area to the grocery store. Participant# 16 is the only PSIS with a job, enabling them to develop their occupational and social capital during studying. Although one form of capital can transfer to another type, only developing educational capital is insufficient for PSIS. Those who want a job or employment opportunities to mitigate financial burdens must participate in various campus and social events to expand their networking. In this way, they can also develop their

different types of capital during their academic journey, thus helping them to settle in Canada after graduation.

To support students' development, universities can provide shuttle buses to different campuses, university neighborhood areas, or the main road directly connected to the university with public transit stations/stops. In a city on the Eastern coast of North America, one university provides four free-of-charge shuttle bus lines to its community members. The shuttle buses run every 10 to 20 minutes, depending on the line. All its members only need to show their university ID to the bus operator while boarding. Meanwhile, all members can track the shuttle buses, city buses, and subways by using the university's transit app, thus saving time on waiting and commuting. PSIS must be full-time students to keep their legal immigration status in Canada; developing the required intellectual, social, and occupational capital as much as possible within their temporary staying is their priority. Providing shuttle buses and related services allows PSIS to save commute time and have more time and energy to develop the required capital during their post-secondary journey.

Commute by Public Transit during the COVID-19 Pandemic

The SMTTO interview data indicates that PSIS expressed fear, discomfort, hesitation, and a strong preference for alternative means of commuting due to public health safety concerns at the beginning of the pandemic in 2020, leading them to abandon or avoid public transit altogether. It is evident that during a public health crisis like the pandemic, PSIS prioritizes their safety and well-being when choosing commute modes. Public transit agencies must acknowledge these concerns and take necessary actions to create a more secure and comfortable environment for commuters. Educational institutions should provide clear public transit usage guidelines,

sanitation kits, and more frequent shuttle service that commutes between campuses and nearby essential resource providers for students during a pandemic..

PSIS in the GTA and the GVA had diverse experiences using public transit during the COVID-19 pandemic, as evidenced by their opinions and commuting patterns reported in the interviews. In 10 interviews with PSIS in the GTA, all participants in the area reported their regular public transit usage, primarily buses and subways, for various purposes such as going to classes, work, shopping, and entertainment. They found public transit a convenient travel tool essential to their daily routine. Some participants (#9, #10, #12) used public transit several times a week for various activities, primarily the subway for commuting. Some (#11, #15, #16) frequently used buses and subways for work, grocery shopping, and leisure. Some (#17, #18) relied on public transit almost daily for classes, medical appointments, and social activities. Those (#13, #14) who took classes remotely used public transit only on weekends and preferred buses because of the convenient access.

The GVA's 11 interviews show that participants also had diverse experiences with public transit during the pandemic. Some participants (#21, #23, #25, #26, #27, #28, #29) frequently used public transit for their daily routines, such as going to school, shopping, visiting friends, and entertainment. Some participants (#19, #20, #22, #24) minimized their usage only for necessary tasks to reduce exposure. #20 moved to campus residence to reduce traveling and occasionally used public transit for grocery shopping and relaxation. Similarly, #24 reported that the usage was rare because of the discomfort in crowded spaces on public transit.

The COVID-19 pandemic has profoundly impacted PSIS, who use public transit for traveling. Fear, safety concerns, and discomfort have led many to change their commuting habits, reduce transit usage, or shift towards personal vehicles if possible. However, it is crucial

to recognize that public transit remains essential for many PSIS's daily lives, such as accessing essential services and maintaining their daily routines. Understanding PSIS's sentiments is important for transit providers to adapt and provide safer and more appealing transit options. The understanding is also significant for educational institutions to provide more practical support to assist PSIS using public transit post-pandemic.

Experience of Safety in Using Public Transit

Safety on public transit concerns some PSIS in the GTA and the GVA during the pandemic. Students have more safety concerns on public transit at night than daytime (Crime Concern, 1999). Participant# 14 reported that bus safety concerns them, especially at night, and shared how they were scared on the bus:

"There was a man who got on the bus after me, and he stood right behind me and was kind of looking at not necessarily at me but, like, I was in his line of vision, and he was just standing there just kind of staring off, and then after a few minutes of this he sat right behind me."

"I can assume that anything that he did was like going to target towards me" "And it might not be directed towards me, but it might be near me, and so just kind of being on alert of like how I need to respond or react."

"A couple of times there has (have) just been people who have like asked me for money or who interacted with me" "more common or being talked to by strangers on the street" "at night ... I felt a little less safe, maybe a lot." This student also experienced a safety issue in the subway at night: "...one person was just like walking back and forth on the cars and every single time he passed me he had one less article of clothing on" "he was taking his clothes off like one by one."

Public transit safety is essential for passengers and ensures everyone can travel freely and feel safe at stops/stations and during the trip (Ceccato & Loukaitou-Sideris, 2020). However, during the COVID-19 pandemic, hate crimes targeted at Asians increased hundreds of times over the pre-pandemic period (University of Victoria, 2022). Students are vulnerable on public transit (Hale, 1996). Those PSIS, who belong to a visible minority group, sometimes are targeted by hate crimes. In the GTA, participant#16 said, "Me(I) and my friends were walking into a subway station, and my friend was assaulted." "We were just walking to a station, and some random person attacked us." This student also reported witnessing "somebody was pushed onto the track by somebody else" a few days before the interview, thus making them feel the subway was unsafe. In the GVA, participant# 19 shared that they worried about racist issues toward Asians during the pandemic, so they stopped taking public transit in 2020 and 2021. #22 also reported two racist cases at public transit systems. The first case happened at the beginning of the pandemic, and a local person yelled at them. "A person was like screaming at me because I am an Asian," "I have no idea (why) they screamed at me, and after that, I got a little bit scared of taking public transit." The other case happened in 2022. This student shared that after getting off the bus, "a bunch of students like three or four, they were coming from the different side of the street, and they pointed at me" and "screamed like go to your country and go back" "until the end of the street they kept yelling at me". After these two issues, #22 tried to avoid taking public transit.

Other situations, such as some riders' behaviors and dark environments near the public transit system, can cause PSIS to be scared in the public transit system. In the GTA, participants#9 and #18 complained that riders without wearing masks on buses or the subway caused them to feel unsafe because of health reasons. #10 felt uncomfortable when "homeless

people sit on the train". Similarly, #16 reported that some "people (are) entering the subway with a cigarette in their hand (and) they are smoking inside the subway, which is not allowed, which is not legal, and it is very dangerous inside the subway". Rather than riders' behaviors, #17 did not feel safe at night because there were many strange people, too dark to walk to subway stations, and too dark and quiet at bus stops.

In the GVA, participant#21 reported that sometimes they were scared while "walking to the bus station and on the bus or the train, (as) there are some terrifying people." Some were "doing drugs in (on) the bus". #26 felt frightened when they saw people "sit(ing) on the floor" and "smell of alcohol". #28 said, "I felt unsafe when some people were not wearing masks or coughing on the train or the bus." This student further shared two issues they experienced. On the way to a bus stop, "there was a guy following me." While "I was waiting for the bus and the guy started talking to me," "he sat next to me," "asked me some personal questions," "I feel insecure all the time (and) was so scared." In another experience, a strange person sat next to this student and kept talking to them. They had to call their friend to pick them up at the bus stop where they got off. "I felt very insecure." Some participants reported concerns about an area around the public transit system. #19, #23, #24, #25, and #26 said they felt terrified and unsafe when walking to bus stops or the bus passed by a specific area where many homeless people and people take drugs.

Participants in the GTA and the GVA experienced similar safety issues in public transit, including being bothered or feeling threatened by other riders' behaviors, encountering or worried about hate crimes targeted at Asians during the pandemic, and concerns about public health risks on public transit. It is particularly worth noting that hate crimes against Asian increased during the pandemic making Asian PSIS especially vulnerable. According to history,

in Anglophone countries, Asians belong to one of the groups constantly being attacked during social crises (Takaki, 1998). As a group of the population relying on public transit, PSIS must deal with many issues in their daily commute, and safety is one of them. To reduce students' risks of commuting between campus and home, particularly at night, universities could provide shuttle buses that connect with neighboring public transit stations regularly.

In summary, long wait times for buses and public health safety and reliability on public transit concern PSIS in the GTA and the GVA. Compared to participants' complaints about the expensive public transit fare in the GTA, most GVA participants were satisfied with the affordable U-Pass program and the stable local public transit service during the COVID-19 pandemic. The difficulties caused by mask mandates for riders with physical impairment indicate that policymakers should holistically consider disadvantaged groups' needs. Moreover, the complicated and inconvenient process of getting a TTC Post-Secondary Monthly Pass caused some participants not to purchase it. On the contrary, in the GVA, participants can conveniently pay the U-Pass fee with other student fees together at the beginning of every semester, and the pass would be automatically loaded to their public transit card monthly.

Additionally, participants in both areas experienced long travel on public transit, thus significantly reducing their opportunities to take courses on other campuses and participate in campus or social activities and limiting their development. Such opportunity reduction confined their chances of accumulating capital. Fewer opportunities to take courses on various campuses impede PSIS from increasing academic qualifications, a form of cultural capital. In the labor market, an individual can use their academic qualification(s) to trade for a guaranteed value, such as a job or a salary, which can significantly improve PSIS's financial status. Meanwhile, less participation on campus or in social activities would restrict PSIS from establishing connections

and interacting with other group members and their communities, through which PSIS can develop the needed social capital for their job searching during study and employment seeking and settlement after graduation.

Last, the data reflects the profound impact of the COVID-19 pandemic on PSIS commuting habits with public transit. According to the main indicators, safety is the top priority for PSIS, leading to altered transit patterns. Given this change, public transit agencies must take necessary actions to enhance safety and comfort. Educational institutions can assist by providing clear transit guidelines, sanitation resources, and better shuttle services. It is important to recognize that public transit remains indispensable for many PSIS for accessing essential services and maintaining daily routines, emphasizing the importance of understanding their sentiments for the development of safer and more appealing transit options in the post-pandemic era.

What are PSIS's needs while using public transit?

Non-academic support for students during the COVID-19 pandemic from two universities where I collected data includes providing pandemic-related information, resources, guide, and virtual/in-person mental health instructions/support. However, nothing related to PSIS's daily commute. In interviews, all participants reported that they did not receive any commute-related support during the pandemic. The university's lack of knowledge about PSIS's daily travel needs is one of the reasons caused the shortage of this type of support. This study identifies the following PSIS's needs while using public transit.

Practical Shuttle Bus Services

Practical shuttle bus services benefit all university members. The university from which I collected data in the GTA provides shuttle buses for students; however, most participants reported that they either did not know about the service or thought it was not practical. #11 said, "I have not used it, and I do not have any information." Similarly, #17 reported, "I have not used the shuttle bus service as I am not aware of it." #16 and #18 knew about the service but never used it. They said that the service is only between different campuses, and they do not need to go to other campuses. #16 further reported that a lack of information, such as stops, is a big problem for the service. Moreover, at this university, in the event of an emergency, students lack access to a complimentary or price-friendly transportation service for getting back home, as this service is exclusively provided for university staff. Moreover, at this university, in the event of an emergency, students lack access to a complimentary or price-friendly transportation service for getting back home, as this service is exclusively provided for university staff (Kuznetsova, 2023).

To provide a practical shuttle bus service, a university can provide:

1. Shuttle buses to different campuses every 10, 20, or 30 minutes, depending on the time of the day. Meanwhile, each line must have a precise schedule and information about pick-up/drop-off locations on weekdays and weekends.
2. Shuttle buses connecting the university and public transit stops/stations on the major road.
3. A university app that can track shuttle buses and public transit.

4. A shuttle bus that can take students living on campus for groceries and daily necessities shopping on weekends or twice per month.
5. A campus community shuttle for the university with a large campus.

Affordable Public Transit Program for Students

Most participants in the GTA complained about the high price of public transit. As a group population with a limited budget and income, students, especially PSIS from the periphery or semi-periphery counties, are eager for their university can provide an affordable public transit program to assist them in meeting their daily travel needs. It needs efforts and cooperation among various stakeholders to make it real. Universities should thoroughly survey the percentage of students who need the program; then, they should regularly report how the high cost of public transit impacts students' daily commutes to local public transit agencies, related municipal units, and provincial offices. Furthermore, university leaders should actively negotiate with the offices mentioned above to seek possibilities and potential solutions for providing an affordable public transit program to its students. Additionally, a university could consider providing transport subsidies regularly to assist students, especially those encountering financial difficulties, in meeting their daily travel needs.

What is the significance of university support for assisting PSIS in using public transit during the COVID-19 pandemic for their development?

University's support to assist PSIS in meeting their daily travel needs is significant and beneficial for their holistic development. They would have more opportunities to take their favorite or practical courses on different campuses, participate in more campus activities and social events, expand their networking, and commute to their off-campus work locations with

more selections for transit tools. Furthermore, they would travel more around the city and visit their relatives or friends more frequently with less concern about expenses on travel.

Intellectual Development

Intellectual development refers to a student's academic achievement and effort to learn new knowledge and skills. Developing their academic ability that aligns with Canada's academic standard is PSIS's priority during their study. Coming from countries with different educational backgrounds, PSIS needs to increase Canadian institutionalized cultural capital, including learning and teaching style and regulation system. They need to spend more time in classes and the library to achieve this goal. From the beginning of the COVID-19 pandemic in March 2020 to mid-2022, many PSIS had to take courses remotely and could not attend classes in person. It significantly reduced PSIS's opportunities to interact with instructors and peers and develop their on-stage presentation skills.

In the fall of 2022, many universities in Canada reopened their campuses, thus allowing PSIS to have in-person classes and communicate with lecturers and classmates. Through immersion in classes, PSIS can efficiently adjust to Canada's learning and teaching styles, such as group discussion and presentation, and be more familiar with academic regulation systems. As a result, they can develop their academic ability by increasing the quantity of Canadian institutionalized cultural capital. This development is crucial for them. Most PSIS are serious learners and eager to study as much as possible; however, the learning and teaching style they obtained in their own countries usually hinders their studies in Canada. For example, an instructor-centered style is dominant in some countries' classrooms, where teachers spend most of their time lecturing, and students quietly listen and take notes. In Canada, on the contrary, a student-centered learning style is employed in most classes, especially at the graduate level. All

students are encouraged to present and share their ideas in class. A lack of sufficient quantity of this capital sometimes causes PSIS to be considered inactive contributors in group discussions by their local peers.

Furthermore, not being familiar with the Canadian academic regulation system, such as academic integrity, causes challenges for some PSIS. In some cases, they were misunderstood as insincere students by their instructors. Therefore, in-person immersion in class enables PSIS to increase the quantity of their Canadian institutionalized cultural capital that benefits academic development. In summary, university support for assisting PSIS, especially for those who live off-campus, in commuting to school would encourage them to take courses, learn new knowledge and skills on different campuses, and participate in various academic events outside their classrooms, thus achieving intellectual development as a result.

Social Development

Social development refers to a student's healthy friendships and social connections, which are beneficial for PSIS to learn how to live healthily and better interact with their surrounding during their college life in Canada. Many PSIS reported their loneliness and stress during the pandemic and expressed their eagerness to interact more with their friends and family members in Canada. Most social restrictions are lifted, and city life is gradually back to normal. University's travel support will allow PSIS to interact with their friends and relatives in different locations more frequently, participate in various social events in the city, and lessen their concern about expenses, which sometimes restrict their travel. As #14 reported in the interview, they usually spend around 30 minutes walking to their favorite weekly social activity to save travel expenses; however, without taking public transit, they must miss another event that is on the same day and can only be reached by public transit or driving.

More interactions with their local peers and participation in community activities benefit PSIS in establishing trust, an essential component of social capital, in relationships with different social groups. Meanwhile, increasing and obtaining a decent quantity of Canadian social capital help PSIS become more familiar with their communities and gradually become more independent. Eventually, they will understand how to better contribute to their communities, surrounding environments, and society, deal with conflicts and live in harmony with others.

Career Development

Career development refers to students' happiness obtained from work and the fulfillment in their lives through work (Hettler, 1976, 1980). Such satisfaction and recognition of fulfillment are essential for PSIS to consider their occupation after graduation and eventually benefit them in determining a career consistent with their educational backgrounds, skills, personal interests, values, and beliefs. Compared to their local counterparts, many PSIS are unaware of what student services are available on campus, such as shuttle bus service and resources related to career development, due to a lack of social capital. More frequent presents on campus allow them to explore and use various available career development resources. They can obtain support, advice, and information on career selection and growth using these resources and communicating with campus office staff, eventually benefiting them in achieving their career goals.

Post-graduation work experience and occupation type are essential for those PSIS who plan to settle permanently in Canada after graduation. Developing career management skills through involvement in different on and off-campus opportunities are significant for them. They will improve practical skills and develop transferrable skills through their part-time work in different organizations and active participation in various social events during their study. #16

used public transit "three or four times a week" during the pandemic to go to their part-time job downtown, different social activities, or weekly team sports. This participant felt lucky that they could still take subways to work and attend different social events, which allowed them to have some income and efficiently develop their social networking in the city. They were confident that all their hard work would benefit seeking an occupation after graduation. Worth noting is that this participant had not been laid off even during the most challenging financial impact on the city due to the COVID-19 pandemic, which might attribute to their communication skills and unique expertise and experience in the job. In summary, the career-relevant developments mentioned above benefit their occupation selection and job-seeking after their academic journey. Obtaining a career that rewards them with satisfaction will eventually enrich their lives in Canada.

Implications

The findings of this study have implications for practice and research. From the practical perspective, the findings reveal that the safety, reliability, convenience, and equity of a city's public transit significantly affect PSIS's daily commute, thus eventually impacting their academic success and affecting development during their educational journey in Canada. The SMTO data indicate that in Canada's cities, especially global cities like Toronto and Vancouver, which have well-developed public transit systems, an affordable program to assist registered students in post-secondary education, including domestic and international students, in meeting their needs while using public transit is necessary. The GVA's and the University of Toronto Mississauga (UTM) U-Pass programs provide PSIS unlimited access to the public transit systems in the city with no extra charge in addition to their student fees, thus meeting PSIS's daily travel

needs without adding additional financial burden on them and benefiting their holistic development.

In the GVA, the public transit agency offers a Post-Secondary Monthly Pass to students; however, the high price and complicated purchase process make the program impractical for PSIS, thus causing many of them not to purchase the pass. Therefore, for areas like the GTA, which does not have an affordable public transit program for post-secondary students, cooperation among public transit providers, universities, and municipal and provincial governments is vital to make the program happen. As the closest and one of the most vital supporters of their PSIS, universities should actively initiate a negotiation with public transit providers and governments to achieve cooperation.

Understandably, the GTA's complicated public transit systems and various providers may make it challenging to offer post-secondary students a cheap monthly pass. Based on this situation, a city's flexible charging public transit system is necessary. A feasible solution for GTA is to replace the current Post-Secondary Monthly Pass with an 18+ student program similar to London's Oyster Travelcard. The Travelcard would provide PSIS with opportunities to travel off-peak at a lower cost during the day. Furthermore, those PSIS who travel shorter distances would pay a lower fee. The differentiation would offer PSIS opportunities to buy less expensive tickets and increase the financial efficiency of GTA's public transit system.

Governments and public transit providers must thoughtfully consider and include equity while designing their transportation plans for a city. While public transit providers are expanding new technologies to supplement existing transit systems, they should ensure that upgrading services do not cost more than previous services and that transportation-disadvantaged populations, such as PSIS, are not left behind due to their financial status or difficulties in

accessing technology-based services. Meanwhile, policymakers who decide on public transit should ensure that riders with special needs can be met in a public health crisis. For example, to aid riders with hearing impairment not to lose communication due to the mask mandate.

For universities, the COVID-19 pandemic provides them with substantial experience in better supporting PSIS during a public health crisis in the future. The first mission for universities is to help PSIS to survive in a pandemic, such as by providing affordable food plans, healthcare plans, and housing. To help PSIS to address their depression or loneliness, universities can connect PSIS with local communities that provide outdoor recreational activities and socially distanced neighborhood events. To support students' success, in addition to existing online support services, universities can deliver various webinars to help PSIS to understand governments' policies and regulations, provide intercultural communication workshops to PSIS's families and dependents to increase their international understanding, and connect PSIS with local communities and partnership-enterprises for volunteer and co-op opportunities. In these ways, universities can help PSIS meet their basic needs and support them in developing their social capital and network, which will benefit them in settling down permanently in Canada after graduation.

This study also implies that post-secondary institutions must survey PSIS's daily travel needs and challenges, make relevant service information more accessible, and improve student commute support. At the beginning of the pandemic, the university in the GVA suspended the U-Pass program. The suspension increased the financial stress for those PSIS who stayed in the city and relied on public transit daily, as they needed to pay extra for their commute. #24 said they had to report their issues and repeatedly communicate with the university to reactivate the U-Pass; after a few weeks of communication, their U-Pass was resumed. PSIS may have different

travel needs and challenges compared to their local counterparts. University policymakers and administrators must holistically consider students' diverse needs before deciding or taking action.

Furthermore, making shuttle bus service information, such as schedule, routes, and stops, more accessible helps PSIS, especially newcomers, easier to use the service and, at the same time, improves the utilization efficiency of the service. Also, many institutions host pre-departure programs overseas to PSIS before their arrival on campus. These programs were conducted remotely during the pandemic. Universities can also include a session on introducing local public transit in the pre-departure programs. This session would benefit PSIS to obtain general information about local transportation and plan their daily commute before arriving in the city.

Additionally, PSIS are paying double or triple the tuition fee of their local counterparts; the university transit support can significantly save their travel time and mitigate their financial stress on daily commutes, thus assisting them in achieving academic success and holistic development. For those PSIS with physical impairments, such as hearing, the university should provide extra aid to assist them in meeting their travel needs. Last but not least, universities can provide an institution-based travel buddy app to all registered students. PSIS can use this app to look for commute companions. In this way, they will be securer while traveling, especially at night and passing by some rough areas in the city.

For research perspective, studying PSIS's needs in daily travel by public transit implies the value and significance of conducting interdisciplinary research on public transit and PSIS's support in Canada. In public transit equity, studies of the riders with temporary residence status, such as PSIS and work permit holders, would provide transportation planners with literature about making the transit systems more equitable. Meanwhile, such studies would advise transit

policymakers to be more concerned about the equity of the disadvantaged population among the riders, such as people with physical impairment and in a low-income/difficult financial status, during a public health crisis like the COVID-19 pandemic. Furthermore, this research implies that PSIS's travel experience with public transit significantly affects their willingness to participate in campus activities, course selections, and satisfaction level with academic performance, thus eventually affecting their academic completion and achievement.

Additionally, this research implies that Crossdisciplinarity is essential in studying PSIS in Canada. Examining their daily travel needs provides post-secondary education leaders and administrators with another perspective to consider student support and services while increasing and administering internationalization on campus.

Conclusion

As a group of students studying away from their home countries, many PSIS are always vulnerable during their educational journey but receive minimal social support. The COVID-19 pandemic pushes them into a more precarious situation. Although in a difficult position, PSIS must strive for their development and success. Using Bourdieu's concept of social capital to research PSIS's non-academic development, it can conclude that increasing the quantity of Canadian social capital benefits their social and career development, which is vital for their education journey and settlement after graduation in Canada. Bourdieu's theory is suitable for conducting qualitative research

- examining PSIS's social challenges in Canada, such as appropriately using student services like campus shuttle buses, building networks within and out of campus, and adequately seeking campus and social support during a public crisis;
- analyzing what types of support PSIS need from their universities to assist them in affordably using public services like public transit, increasing individual face-to-face

interactions with local students and members of some social groups, and developing their relationships with group members. As a result, they can obtain and utilize the benefits, such as trust, from these relationships, eventually achieving social development;

- exploring types of student service and available campus resources related to PSIS's career development that benefits their settlement after graduation in Canada.

This study advises and aligns with Grossman (2013)'s finding that Bourdieu's concept of social capital is suitable for illustrating differences in student development and achievement of individuals in a diverse racial region. In future research, more quantitative studies are needed to measure the volume of social capital PSIS needs to obtain for their adaptation, holistic development, and success.

During the pandemic, while numerous residents avoided public transit for commute, many PSIS in the GTA and the GVA had to rely on public transit as their daily travel tool. This study reveals a safe, affordable, reliable, and convenient public transit system is essential for their academic success, social capital increase, and holistic development. The U-Pass program in the GVA provides PSIS with affordable and unlimited access to the local public transit system that satisfies most of their commute needs. For metro areas in Canada, like the GTA, with a well-developed public transit system but does not have an affordable program for post-secondary students, cooperation among the provincial and municipal governments, public transit providers, and post-secondary institutions is vital to make the program happen. As the closest supporter of students and one of the metropolis's influencers, universities must initiate the negotiation for cooperation. Alternatively, a city can provide a flexible charging program for all registered post-secondary students to use public transit, thus allowing PSIS to purchase less expensive tickets and increase the financial efficiency of GTA's public transit system.

Policymakers must thoughtfully consider and include equity while designing their transportation plans for a city. When integrating new technologies into the current public transit system, the providers should ensure the upgrading system does not cost more than the old system and transportation-disadvantaged users are not left behind because of their financial status or hardships in accessing technology-based services. Meanwhile, public transit providers should ensure that riders with special needs can be met, especially in a public health crisis.

Universities should provide appropriate and practical commute support and institution-based travel apps to assist all registered students in traveling conveniently and safely. Furthermore, universities obtain substantial experience in providing better support services to their students during the COVID-19 pandemic. It is impossible to predict when the next pandemic will come. Universities must always be ready to support in-town PSIS and their families to survive a public health crisis. Meanwhile, provide various opportunities to assist them in succeeding in their academic journey in Canada.

For future research, in addition to needing more quantitative studies on PSIS's adaptation, development, and success by using the concept of social capital, as mentioned above, it is significant to study public transit equity for riders holding temporary status in Canada. Furthermore, a study is needed to evaluate PSISs' satisfaction level with their academic performance while using public transit as their daily commute mode. Additionally, comparison research is needed to examine if subsidized transit pass programs for post-secondary students, such as U-Pass, benefit PSIS more than Canadian local students. Last but not least, researching PSIS experience and support by an interdisciplinary approach can provide various perspectives to scholars focusing on internationalization and administration on university campuses.

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