

## Travel Issues of Sri Lankan Females

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### ABSTRACT

This research looks into the mobility problems that female travelers undergo, with an emphasis on Sri Lankan women. Males and females have different social and economic roles and obligations in most civilizations, and as a result, there are major gender variations in travel and transportation demands. The aim of this research is to investigate the mobility issues of females while traveling. This research analyzes mobility problems of female travelers with special reference to the Western province of Sri Lanka. This research targets to identify the mobility barriers which affect the females' lifestyle, the problems, and threats females have faced, and the way they go through these problems. The socio-economic, perspective of people, and travel behavior data were collected from 450 females by using a paper-based questionnaire in August 2021. Ordinal logistic regression analysis and Chi-square test were used to analyze the data. According to the results, sexual harassment while traveling was a significant problem. Among the respondents, 17% of respondents stated that sexual harassment was the most concerning security risk when traveling and 46.8% of female respondents faced sexual harassment when traveling by buses. Based on the types of harassment 26% of females experienced physical harassment as the most frequent harassment type and 25% experienced verbal harassment in public places or public transportation. Majority 42% of the females were strongly stated that they faced sexual harassment problems after dark. Poor maintenance of open public spaces, overcrowded buses/trains, lack of effective/visible police or civil guards, and lack of regulation on transport safety such as men dealing with or taking alcohol/drugs were factors that contribute to sexual harassment by females in public places and transport. The results of this analysis provide valuable insights into the mobility problems of female travelers in day-to-day life due to various reasons.

**KEYWORDS:** *Females, Mobility, Ordinal logistic regression, Sexual harassment, Travel*

### 1 INTRODUCTION

It is commonly known that males and females have significantly specific variations of demand for transportation services and that transportation sector interventions typically do not adequately address female demands (Riverson, 2005). Progressively gender is being perceived to play a critical job in transport arranging, especially for tending to person versatility needs in rural and urban areas. It is becoming a huge problem when increasing the usage of vehicles. It is more challenging for females especially when considering the social believes, practices, behaviors, and habits. Females make transit decisions on a regular basis, and they want public transportation to be affordable, dependable, frequent, comfy, clean, and secure. Kapoor (2013) stated that both males and females rely on public transportation for their economic and social lives, and increased reliance on urban transportation systems puts a strain on both. Females rely on public transportation than males. Females do not even have a few other options for mobility. It is critical to have a safe, dependable, and comfortable form of public transportation. When traveling alone, women encounter higher obstacles and difficulties. Petty and violent crime, culture shock, inadequate sanitation, and sexual assault are just a few of the problems (Anon, 2013). Females can reduce risk and improve the chances of a secure and prosperous journey by planning ahead, using common sense, and respecting religious and social differences. Once in every three women (32%) in Canada-roughly 4.9 million females 15 years and older-experienced some sort of unwelcome sexual behavior while in a public location. Unwelcome sexual involvement, such as insults, signals, non-verbal, whistling, or shouts, are perhaps the most prevalent kind of undesirable behavior that women encountered in public places (Cotter et al., 2018). According to the United Nations Population Fund Sri

Lanka (2017) report, 90% of Sri Lankan female's faced sexual harassment on public buses and trains. Women's involvement within the economy in Sri Lanka falls behind some other intermediate nations, and despite sustained economic development, the number of females in the labor has fallen to 36% in 2016 from 41% in 2010. Female's mobility, engagement in public life, and general wellness are all hampered by harassment using public transportation in Sri Lanka, according to the World Bank representative (UNPF, 2017).

Female mobility issues are a prevalent topic across the world, and it has been studied by many individuals, particularly in developing nations. It is critical to comprehend the mobility concerns that women experience when traveling, as well as to consider their needs and the security measures that need to be implemented in the country to address such issues. As an Asian country, it is highlighted the challenges for females are comparatively higher than males. Challenges for females mainly higher because of the cultural believes, tradition and the historical back ground. Therefore, it is appropriate to make a review on the mobility issues for females while traveling in Sri Lanka.

## **2 LITRETURE REVIEW**

Kapoor (2013) studied women and their mobility in Bhopal, Gwalior & Jodhpur, India. The study's aim was to bring together a wide range of stakeholders in three Cities of India to improve female security in public locations. Safetipin software and standardized survey questionnaires were used to collect data from female participants in the cities of Bhopal, Gwalior, and Jodhpur. About 219 women were participated in this survey. Female's perceptions of security in public spaces and on public transit were the emphasis in the study. Focus Group Interviews with important urban transportation providers in every city were used to gather qualitative data. As phase of this research, women participants' personal experiences were recorded in order to better understand the effects of public transportation security risks on female's mobility. Several factors were cited by respondents as contributing to women's safety in public spaces and on public transportation. In Bhopal 96% of female respondents said major reason as they feel unsafe sales of drugs and alcohol in vicinity and being in a secluded or deserted location was cited by 97 percent of females in Gwalior and 78 percent of females in Jodhpur as one of the most common causes for feeling unsafe. Among 219 respondents 29% of them faced sexual harassment in the past year. In crowded places like bus stops and markets, a considerable percentage of women and girls encountered sexual harassment and abuse. The study found that the main reasons for not reporting crime were concerns about one's family reputation and a lack of trust in the police. The tolerance of harassment and abuse would be another reason for the poor reporting of such incidents. According to a UN Women-sponsored poll conducted in Delhi during 2012, 95% of females felt insecure in public places. According to research undertaken in cities, addressing the issue of female equality in public transportation will require a complete set of initiatives and policies.

The research by Malik et al. (2020) studied women's mobility via bus rapid transit in Pakistan. Pakistan is undergoing rapid urbanization and has a low global ranking for gender equality. Females in developing countries have more constraints when it comes to mass urban mobility. Furthermore, socio-cultural standards, a larger reliance on public transit, an absence of gender-responsive mass transit, and harassment experiences impede women's ability to explore potential career paths. The objectives of this research were to investigate the general mobility characteristics of females who utilize Pakistan's first Bus Rapid Transit (BRT) in Lahore, to learn about the obstacles they experience, and to suggest ways to improve the transportation system. To examine various quantitative, qualitative trip characteristics, data was gathered through face-to-face questioners-based survey along the BRT corridor. To generate accurate results, descriptive and cross-comparison statistical approaches were used. The responses to assault were recorded, analyzed, and presented graphically. Majority of participants in this study were low-income, comparatively younger or middle-aged, students, workers, and users with no or limited jobs. The main challenges were sexual harassment at railway stations and buses, poor amenities for the elders, Lack of facilities at the railway stations, limited dedicated space on buses, and ticket booths during rush hours. This article concentrates on common mobility trends among females and the challenges they face when taking the BRT in Lahore. Female education and employment achievements could be improved by addressing their concerns with mass urban mobility.

The study was done by Korn (2018) about sexual violence and women's mobility on public transportation. This study aims to discover how women's widespread fear of sexual assault when

traveling influences both their travel behaviors and their urban lives in general. This study looks at sexual violence on Santiago's mass public transportation systems and tries to figure out how the conditions of those process encourages the prevalence of sexual abuses in that area, limiting women's mobility in the region. For this research, the data was gathered by using survey of female colleges in Santiago, Chile. The universities selected for the survey were Universidad de Chile, Pontificia Universidad Catolica de Chile and Universidad Diego Portales. This survey was conducted to realize both of the sexual harassment in Santiago's local immigration network, as well as the unique association between the threats of abuses in this region and female transit. This survey included 407 women between the ages of 18 and 35. More than 3/4 of female use local transportation daily basis and 72% of respondents said they had been sexually harassed while using public transportation. Survivors of sexual assault were asked whether the events had affected how they used public transit. A most of the females indicated that they had been victim's minimum once mentioned changing their public transit habits as a result of the incident (52%). Data show that violent events have an impact on mobility, emphasizing the connection between a harassment or attack incident and how a woman moves around the area. To appreciate the restrictions on women mobility imposed by the threats of sexual assault, it's essential to recognize that mobility encompasses not only the freedom to switch from a place to another place, but also the capability to feel safety and secure when they are doing so. The danger and spread of sexual harassment on Santiago's local transportation, according to survey findings, restricts women's mobility and perpetuates structures of exclusion, with serious consequences for equality in the region. The statistics also showed that after a sexual harassment event, the average female is unlikely to fully change her travel habits; thus, the priority should be on keeping the space of this public transport system as safe and confidential too. This study suggested policy strategies aimed not only at improving women's behavior and perceptions but also at improving the travel experiences of all passengers.

Upali (2010) conducted research about the access and mobility of rural women. This study is based on a study on changing gender connections as a result of a transportation intervention in a Sri Lankan rural community. For this research, primary data were collected through a field study. The field study was conducted in Malberigama, Hambanthota District in Sri Lanka. To provide a greater understanding, a sample size of 36 females was chosen. Specific individuals of the chosen respondents were interviewed separately. Each female's data were taken using a guideline that included both structured and open-ended questionnaires. The data were analyzed using an explanatory method. Females in this community confront a number of challenges, including access and travel. Isolated, or being cut off from critical services, is a big issue for these individuals. Because they were cut off from the conventional cultural development phase, the society, particularly women, faced several challenges in terms of access to resources and other necessities. In this community, females spend an average of 3 hours each day on transportation-related works. Most women stated that they have had to devote more time to typical female works such as water collection, fuelwood collection, and so on. In addition to this, the majority of the women reported collecting water, collecting fuelwood, traveling to medical centers, transporting kids to school, and traveling to adjacent cities to sell/buy items. The majority of the ladies stated that they must go to the neighboring city twice or once per week. They used to have to travel around 2-3 kilometers to get to the bus stop and the same distance back. They are now using alternative vehicles like three-wheelers and hand tractors to access the bus route, due to the upgraded roadway. These vehicles are sometimes used to get them to their destination, and the ladies saved around two and a half to five hours each week as a result of these changes. The major challenge of inaccessibility and transportation in rural areas is the development of relevant methods to decrease the transportation costs of community production and selling, rather than the provision of public carriage of passengers by the private or government sectors.

Multiple research studies have demonstrated that females face a variety of challenges while traveling. There are many mobility restrictions face by females in the world. Furthermore, female behavior and attitudes are different from one region to another region.

### 3 METHODOLOGY

#### 3.1 Problem Statement

With the developments and urbanization of the countries in the world, the demand of the transportation has increased. Males and females have different social and economic roles and obligations in most civilizations. Female have different travel habits, needs, and behaviors than males. The gender-based specialization inside the family and society is at the root of major disparities in female's and male's fundamental mobility requirements. Female mobility issues are a prevalent topic across the world, and it has been studied by many individuals, particularly in developing nations. It is critical to comprehend the mobility concerns that women experience when traveling, as well as to consider their needs and the security measures that need to be implemented in the country to address such issues. So, it is appropriate to make a review on the mobility issues for females while traveling in Sri Lanka.

#### 3.2 Development of questionnaire and sample size

This research study investigates the mobility issues of females while traveling using the data collected through a questionnaire. Females mobility issues can be differed based on some factors such as age, home district, civil status, mode of travelling, purpose of travel etc. Therefore, those factors are included in the questionnaire to identify the variation of mobility issues of female travelers. Following are the mobility issues for female travelers which identified to include in the questioners in order to conduct the survey.

- Sexual assault or rape
- Sexual harassment
- Robbery or possessions stolen
- Murder or violent crime
- Traveling with children and babies
- Pregnant time: seating, density of travelers
- Distance of travel
- Pain while traveling

The questionnaire was consisting of three sections. Section 01- general information of the respondents, section 02- general information about mobility issues in transportation, and section 03- general information of harassment while traveling. The study's questionnaires employed five-point Likert scales. Cronbach's alpha test was used to determine the reliability of multiple-question Likert scale questionnaires. Reliability refers to the extent to which the data collection techniques or analysis procedure will yield consistent findings. The most frequently used technique to measure internal consistency is Cronbach's Alpha technique. It is computed in terms of the average intercorrelations among the items measuring the concept.

The sample size calculation was done using below Equation (1) (Gunathilake et al, 2019).

$$N = \frac{z^2 P[1-P]}{d^2} \quad (1)$$

Where; N – total sample size, Z – value corresponding to confidence limits, d – margin of error (total width of confined level), P – expected population proportion.

The minimal sample was computed assuming a 95 % confidence level ( $z=1.96$ ), a female population of 51.31 % in Western Province, and a 5% acceptance amount of absolute error. It gave the minimum sample size of 385. Accordingly, a total number of 450 questionnaire forms were distributed and collected from the females in Western Province.

Among the 450 female respondents, 186 from Gampaha, 159 from Colombo and 105 from Kalutara. The majority of the female respondents represented the 31 – 40 age categories. 197 females belong to that age group category and the percentage was 43.8%. The rest of the respondents lies within the age group of below 20, 21 – 30, 41 – 50, above 51 and there were 40, 96, 59, 58 respondents. The percentage of them were 8.9%, 21.3%, 13.1%, 12.9%.

### 3.3 Study area

The three districts of Colombo, Gampaha and Kalutara in the Western Province were selected for the study. This province is Sri Lanka's most populated and developed in terms of socio-economic status. Overall, the Western Province inherits even more resources Provinces in the country.

The western province has a population of 6,165,000 people, according to the Census and Statistics Department (DCS) (2020). Males account for 3,002,000 (48.69%) of the population, while females account for 3,163,000 (51.31%). The female population in the three districts of the Western Province is shown in Table 1.

Table 1: Female population of Western Province in Sri Lanka

District	Number of female populations	Percentage of females out of total population
Colombo	1,250,000	39.52%
Gampaha	1,249,000	39.49%
Kalutara	664,000	20.99%

The working-age population is defined as anyone over the given age restriction (15 years and upwards) of either gender. This population is divided into two categories: economically active and economically inactive. And according to DCS from the year 2020, the distribution of economically active female population in the western province is shown in Table 2.

Table 2: Economically active population in Western Province, Sri Lanka

District	Economically active female population (%)
Colombo	32.6
Gampaha	33.4
Kalutara	35.1

### 3.4 Ordinal logistic regression

Ordinal logistic regression is a statistical analysis approach for modeling the relationship between one or more explanatory variables and an ordinal response variable. An ordinal variable is a categorical variable in which the category levels are clearly ordered. The explanatory variables can be categorical or continuous (Parry, 2020).

In this research study, A researcher wanted to understand whether the mobility issues that a female faced can be predicted from a factor that contribute more towards females' security experience. Factors that contribute more towards females' security experience were considered as the independent variables, and mobility problems were considered as the dependent variable.

Equation 2 represent the ordinal regression (UCLA,2021);

$$\text{logit} (P(Y \leq j)) = \beta_j0 + \beta_j1x_1 + \dots + \beta_jpx_p \quad (2)$$

Where;

Y – ordinal outcomes with j categories

P(Y<=j) – cumulative probability

### 3.5 Chi – squared test

The Chi-Square Analysis test of independence analyzes whether categorical variables are associated, whether the variables are independent or related (Yeager, 2021). It is a test that is not parametric. The data is analyzed using a cross-tabulation in this test. A cross-tabulation is a table that divides data into two categories based on two categorical factors. The one variable's classifications

appear in rows when the other variable's classifications appear in columns. Each variable must have two or more categories. Each cell reflects the total count of cases for a specific pair of categories (Yeager, 2021).

A p-value less than or equivalent to the significance level for a Chi-square test shows that there is enough evidence to prove that the observed distribution is not the same as the expected distribution. A p-value greater than 0.05 ( $> 0.05$ ) suggests strong evidence for the null hypothesis. This suggests that the null hypothesis should be kept and the alternative hypothesis should be rejected.

## 4 RESULTS

### 4.1 Preliminary results

Women's mobility problems are varied from each other. The survey included the most common problems women face when traveling. This Figure 1 shows the females mobility issues that they faced while traveling. According to the identified mobility issues for female travelers' sexual harassment (17%) was the highest rated issue. When robbery or possession stolen (15%) was the second highest rated issue.

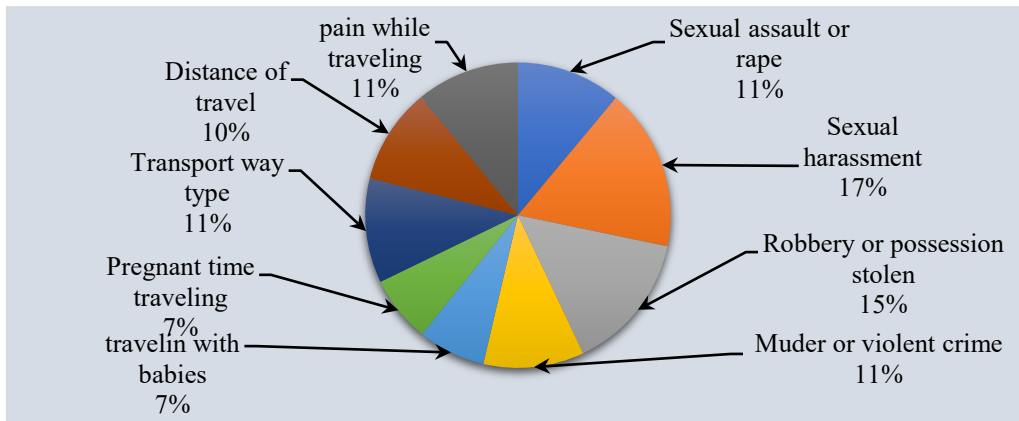


Figure 1: Types of mobility problems that women face while traveling

Public transport in Sri Lanka consists of buses and trains. Buses are the main mode of public transport. Among the 450 female responses, majority of female were sexually harassed when using Buses and trains respectively 211, 136. Based on the results 77% of the female faced sexual harassment while using public transport and they faced different types of harassment experience. Such as, verbal harassment, physical harassment, violent physical attack, visual harassment and flashing/blinking. Then below Figure 2 represent the types of sexual harassment they faced mostly in public transport or public places during the past year. Majority of the respondents were faced physical harassment such as, unnecessary touching, leaning, feeling up etc. There were 276 respondents and 26% percentage. Then the second highest respondents' verbal harassment (25%) such as, unwanted comments, whistling etc.

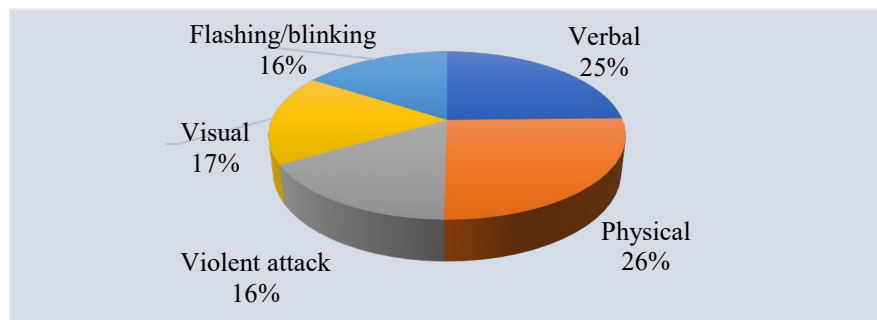


Figure 2: of sexual harassment faced by females while traveling

Females faced various kind of problems when using public transport. Sometimes they feel public transport services are not safer. Figure 3 represents that how they felt the safety of public transportation. According to the results, majority of female respondents said that SLTB buses (36%), Private buses (34.7%) and Trains (38.2%) were not safer than the hired three wheelers (8.9%) and hired taxis (13.1%).

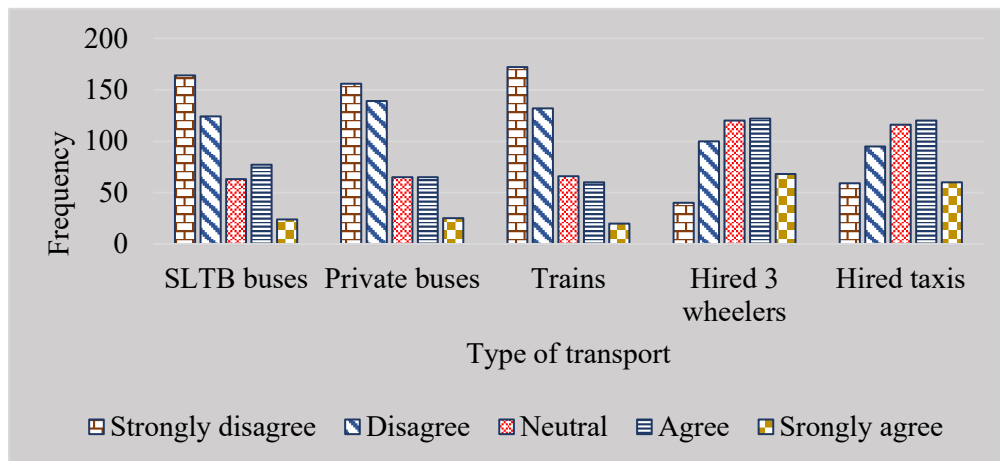


Figure 3: Women's perceptions about the safety of public transportation

As shown in Table 3, 40.9% the females do nothing when they were sexually harassed or assaulted while others were reported.

Table 3: Ways to seek help in case of sexual harassment

Methods	Frequency	Percent (%)
Nothing	184	40.9
Reported it to the police	31	6.9
Confronted the perpetrator	64	14.2
Reported to bus/train regulators	52	11.6
Asked bystanders for help	48	10.7
Asked for help from family/friends	71	15.8

Table 4 represents the safety measures taken to prevent problems when women travel. The most frequent safety measure was avoiding the going out after dark.

Table 4: Factors taken for female safety and secured environment when travelling

Factors	Frequency	Percent (%)
Avoid certain public spaces and public transport completely	153	10.6
Avoid going out along completely	159	11.1
Avoid going out alone after dark	303	21.1
Carry items to protect myself	219	15.2
Take alternative transport modes	236	16.4
The license plate number of a hired vehicle can be verified before entering a vehicle	196	13.6
Quite my job	85	5.9
Change my residing Location	87	6.1

#### 4.2 Reliability test results

Table 5 shows Cronbach’s alpha values of the independent variables and dependent variables of the questionnaire. Alpha score of 0.7 is generally acceptable. That means there are good consistency between questions which measures the independent and dependent variables.

Table 5: Reliability test results

Variable	No of item	Cronbach’s alpha value
Mobility issues	09	.803
Safety of public transportation	05	.712
Security experience on transport	13	.815
Harassment experience on transport	06	.951
Types of sexual harassment	05	.761

#### 4.3 Chi-squared test results

Table 8 represent the chi-squared test results of the sexual harassment. Most of the females in the Gampaha district were faced sexual harassment experiences than the other two districts.

Table 8: Chi -square results of the sexual harassment and districts

Independent variables			Sexual harassment				
			Strongly disagree	Disagree	Neutral	Agree	Strongly agree
District	Colombo	Count	25	12	34	35	53
		Expected Count	23.7	13.1	32.2	44.2	45.9
	Gampaha	Count	22	18	44	48	54
		Expected Count	27.7	15.3	37.6	51.7	53.7
	Kalutara	Count	20	7	13	42	23
		Expected Count	15.6	8.6	21.2	29.2	30.3

Many females between the ages of 31 to 40 experienced sexual harassment problems. Table 9 below shows the comparison between the reported and expected number of responses by age.

Table 9: Chi -square results of the sexual harassment and age

Independent variables			Sexual harassment				
			Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Age	Below 20	Count	5	3	9	15	8
		Expected Count	6.0	3.3	8.1	11.1	11.6
	21 - 30	Count	19	10	12	33	22
		Expected Count	14.3	7.9	19.4	26.7	27.7
	31 - 40	Count	26	11	53	38	69
		Expected Count	29.3	16.2	39.8	54.7	56.9
	41 - 50	Count	7	6	8	24	14
		Expected Count	8.8	4.9	11.9	16.4	17.0



	Above 51	Count	10	7	9	15	17
		Expected Count	8.6	4.8	11.7	16.1	16.8

Many females were sexually harassed while traveling on buses. According to Table 10, 58 out of 450 women strongly stated that they experienced sexual harassment while riding the bus. But the number of reported cases was less than the expected number.

Table 10: Chi -square results of the sexual harassment and mode of transport

Independent variables		Sexual harassment					
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Mode of transport	Bus	Count	31	23	45	54	58
		Expected Count	31.4	17.3	42.7	58.6	61.0
	Walking	Count	7	0	8	8	12
		Expected Count	5.2	2.9	7.1	9.7	10.1
	Train	Count	13	9	29	46	39
		Expected Count	20.2	11.2	27.5	37.8	39.3
	Hired 3 wheelers	Count	9	3	2	4	7
		Expected Count	3.7	2.1	5.1	6.9	7.2
	Hired taxi	Count	5	1	3	11	4
		Expected Count	3.6	2.0	4.9	6.7	6.9
	Other	Count	2	1	4	2	10
		Expected Count	2.8	1.6	3.8	5.3	5.5

Many females experience sexual harassment problems after dark. Table 11 According to the results of the Chi-Square test, 55 females responded to reports of sexual harassment after dark. But the expected number was lower than reported.

Table 11: Chi -square results of the sexual harassment and time of harassment happen

Independent variables		Sexual harassment					
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	
Time of harassment	Day time	Count	21	12	25	48	22
		Expected Count	19.1	10.5	25.9	35.6	37.0
	After dark	Count	23	18	33	37	55
		Expected Count	24.7	13.6	33.6	46.1	48.0
	Both	Count	23	7	33	40	53
		Expected Count	23.2	12.8	31.5	43.3	45.1

#### 4.4 Ordinal logistic regression analysis

The model was used to analyze the factors that contribute more towards females' security experience. Model fitting information of the sexual harassment mobility problem from ordinal regression analysis gives the significant value is 0.003 ( $p < 0.05$ ) showing that developed model was better than null model.

The below Table 6 describes the parameter estimates of Ordinal logistic regression for sexual harassment of females while traveling.

Table 6: Parameter estimates of Ordinal logistic regression model for sexual harassment of females

Factors	Estimate	df	Sig.
Poor lighting in bus stops/terminals and other public places in the area	.024	1	.907
Poor Discipline of Driver/Conductor	-.006	1	.977
Poor discipline of other passengers	.014	1	.946
Poor maintenance of open public spaces*	.458	1	<b>.043</b>
Overcrowded Buses/Trains*	.438	1	<b>.044</b>
Crowded bus stops/Bus stations/Railway Stations	.348	1	.154
Lack of respect for women from men	-.165	1	.504
Lack of effective/visible police or civilian security guards*	.488	1	<b>.026</b>
Lack of regulation on transport safety Men dealing with or taking alcohol/drugs*	.428	1	<b>.047</b>
Lack of monitoring of the services Lack of published information on transport services	.065	1	.796
Poor transport service	-.037	1	.866
Lack of infrastructure such as CCTV at bus stops/stations	-.128	1	.559
Lack of infrastructure such as CCTV inside public transport	.250	1	.223
<b>Significant Variables:</b> Poor maintenance of open public spaces, Overcrowded Buses/Trains, Lack of effective/visible police or civilian security guards, Lack of regulation on transport safety Men dealing with or taking alcohol/drugs			
<b>Dependent Variable:</b> Sexual harassment			

Poor maintenance of open public spaces, overcrowded buses/trains, lack of effective/visible police or civilian security guards, and lack of regulation on transport safety men dealing with or taking alcohol/drugs factors were significantly affect for the sexual harassment issue that female faced while traveling as shown in Table 6.

The value of the overcrowded buses/trains coefficient is positive (0.438), which suggests that as overcrowded buses/trains increase the effect of the sexual harassment problem. Coefficient values of poor maintenance of open public spaces is 0.458, that suggests that if this factor increases the sexual harassment problem also increases.

## 5 CONCLUSION

This research is an in-depth study on the mobility issues faced by the females with special reference to Western Province in Sri Lanka. From this study factors that contribute to the females' mobility problems are investigated and results provided the security measures in order to avoid these mobility problems. For this study data collected done through paper-based questionnaire with 5 points Likert scale questions. Cronbach's alpha test is used to determine the reliability of multiple-question Likert scale questionnaires. In every variable, Cronbach's Alpha coefficient is greater than 0.7. This indicates that the questions used to measure the independent and dependent variables are consistent.

According to the main findings, the majority 17% of females are face sexual harassment while traveling. Females are faced different types of harassment experiences in their day-to-day life such as physical harassment, verbal harassment, visual harassment, violent physical attack, and flashing /blinking. The most frequent harassment type is physical harassment (26%) such as, unnecessary touching, leaning, feeling up, etc. and results show 25% of females faced verbal harassment such as, unwanted comments, whistling, etc. The chi-square test results values show that most of the females in

Gampaha (40%) and Colombo (35%) district than the Kalutara (25%) district are faced sexual harassment experience. Majority 42% of the females are strongly stated that they faced sexual harassment or assault problems after dark. Based on the respondents' past experience, most women (40.9%) did not try to do anything after they were sexually harassed or abused. This is because some of them have been intimidated or threatened by the perpetrator while others ignored such incidents as normal. According to the results, 15.8% of them were seek help from their family or friends after being assaulted or abused, 14.2% of them were faced the perpetrator and 6.9% of women were reported the incident to the police. Overall, according to the parameter estimate values from the ordinal logistic regression, poor maintenance of open public areas, overcrowded buses/trains, lack of effective/visible police or civilian security guards, and lack of regulation on transport safety (men dealing with or taking alcohol/drugs) are the factors that significantly affect for the female's mobility problems. Overall, to avoid female mobility problems can used varies safety methods. Majority 21.1% of respondents agreed that they avoid going out after dark for as one of their safety methods, and 16.4% stated that they use alternative transport modes to avoid mobility problems. To protect their self and for their security 15.2% stated that they carry some sharp tool when traveling and 11.1% stated that they avoid going out along for their safety.

Past studies also highlighted that sexual harassment or assault was the major mobility problem that females faced in their day to day life while traveling. There is a possibility of sexual harassment anywhere in the world specially in developing countries. Females in Sri Lanka have experienced the same situation and must be cautious and aware of sexual harassment while traveling. According to the several studies, In Canada 32% of females experienced some sort of unwelcome sexual behavior while in a public location (Cotter et al., 2018), In India crowded places like bus stops and markets, a 95% of women and girls were encountered sexual harassment and abuse (Kapoor, 2013), According to the UNFS (2017) report, 90% of females in Sri Lanka face sexual harassment on public buses and trains, the majority of females have been harassed once or twice per year. Abuse is much more common in long-distance travel than in short-distance trips (Rajaguru et al., 2018).

A comprehensive, female-friendly transportation system and infrastructure should really be developed in Sri Lanka to increase female's mobility. Female's transportation requirements should also be recognized by society. Women's walking accessibility may be aided by programs like Programs on Prevention of Gender Based Violence which expand their access to schooling, occupational, and other opportunities. These activities may also help to alleviate the mobility issues that females have when traveling. The following factors should be developed in order to improve the security experience of females using public transportation and public places. Poor lighting in bus stops/terminals and other public places, poor discipline of driver/conductor, poor maintenance of open public spaces, overcrowded buses/trains, crowded bus stops/bus stations/railway Stations, lack of regulation on transport safety, poor transport service, lack of infrastructure such as CCTV at bus stops/stations and inside the public transport. This study identified how mobility barriers affect lifestyle, what are the challenges and threats faced by women and how they overcome these challenges. In conclusion, with the advancement of the transport sector, women's mobility issues change over time.

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