

# WOMEN MOBILITY IN LEBANON



## Research Study Report

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This study is conducted by RPS (Research and Professional Services)

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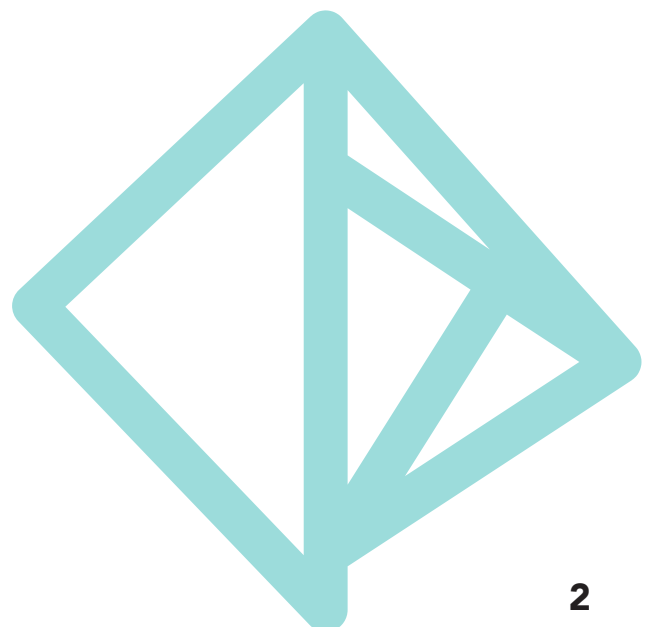
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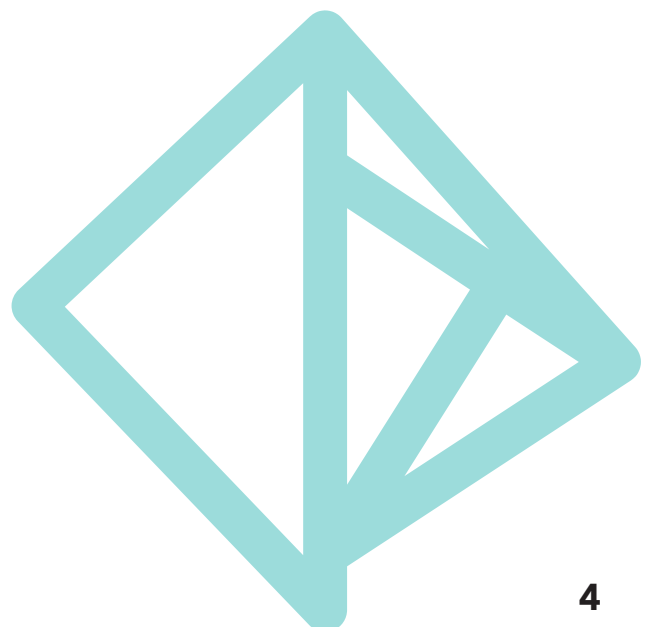
## Acronyms

RPS Research and Professional Services

ToR Terms of Reference

FGD Focus Group Discussion

PSEA Protection Against Sexual Exploitation and Abuse



## Executive Summary

This research paper aims to depict the consequences of poor public transportation in Lebanon. In specific, it focuses on women's mobility and how it affects their daily lives. Besides the fact that public transportation in Lebanon is barely available and has been reported as unsafe, public transportation has recently become more expensive due to the economic situation. All these aspects are believed to affect women's personal daily lives, be it in their careers, education, personal lives, children, safety, and more. Thus, this research aims to:

- a. Understand women's public transportation behaviors and practices.
- b. Identify the barriers of the mobility of women and girls living in Lebanon (Affordability, travel patterns, poverty, livelihood, and personal security).
- c. Study the impact of public transportation on women's life.
- d. Understand women's experiences using public transportation.

In our attempt to tackle the points above, we used quantitative and qualitative tools to gain in-depth insights into women's perception of public transportation in Lebanon and its impact on their lives. A survey was conducted on a sample of 1239 Lebanese women who use public transportation. The data collected from the study was complemented by in-depth information we depicted from 8 Focus Group Discussions (FGDs).

Our results corroborate both hypotheses that women's mobility in Lebanon is constrained by poor public transportation and that this constraint hinders the quality of their lives. The statistical results showed that the fear of kidnapping, robbery and harassment have the highest impact on women's daily life concerning their mobility and career decisions. The higher the fear factor, the higher the negative impact on women's lives. Furthermore, Lebanese women have serious concerns regarding their safety and security while using public transportation. For instance, several benefits arise if public transportation is safe and secure. Women would not need to look for alternative transportation means, accept to work in remote areas, and forgo using a private car. The same applied to university students; they could pursue their education in remote universities or colleges and choose the majors they prefer without having to consider transportation limitations in their decisions. This study shows that many female students do not enroll in the University of their choice and sometimes settle for a different major due to the inability to commute to educational institutions via safe and secure public transportation. The following impactful factors are the effectiveness and satisfaction levels with the services provided by public transit. This comprises of the availability, the punctuality, the speed or smoothness of catching a general means of transportation. The results show that the lack of smoothness and effectiveness when using public transport adds a burden to Lebanese women's lives and pushes them to make decisions that hinder their career and educational paths. As for affordability, this study shows that the financial crisis in Lebanon had its toll on public transportation fees as in any other sector. Accordingly, many Lebanese females are obliged to set a more extensive budget for public transportation.

## I. Context Review

In a crisis context, vulnerable groups<sup>1</sup> are the most impacted, since they are usually less immune and resilient to pressuring economic and health conditions. Studies show that women have been acutely hit by the pandemic in terms of increased household duties and crisis-induced layoffs. This has affected women's purchasing power and access to their basic needs. The crisis has also impacted women's mobility and thus affected their daily lives. Women's mobility could be a determining factor in their career, activity, education, safety and mental health.

### **Evidence on Women Mobility from Around the World**

Evidence from both developed and developing countries shows that men and women have different patterns in traveling and accessing public spaces. Women typically walk longer distances than men, and they make frequent, shorter trips with more stops to combine multiple tasks. This is likely due to household obligations such as childcare, assisting elderly family members, and making grocery stops. Men, by contrast, tend to follow more direct and linear patterns. Females engage in more non-work-related travel than males and are more likely to be accompanied by children or elderly relatives. They also rely more on public transport<sup>2</sup>.

However, transportation infrastructure in most countries rarely caters to the needs of the non-linear travel patterns of women, and is usually designed for the straight-travel commuters. Moreover, little attention is focused on the needs of women's mobility, leading to a persistent gender bias in public transportation<sup>3</sup>. In fact, public investment in transportation is commonly driven by cost efficient criteria and lack of evidence-based planning that adheres to the needs of women or for ensuring access and safety to all. A major challenge for decision-makers is the lack of data and the little evidence about women's needs in transportation, as well as the impact of the latter on their economic empowerment. The ieConnect for 'Impact Program' of the World Bank is an attempt to generate a significant body of evidence through the development of "data systems and experimental and quasi-experimental evaluations that can transform the way we think of mobility as an economic force and at a scale that will substantially improve the evidence-base for policy making"<sup>4</sup>. The program has a thematic emphasis on gender and female empowerment, among other themes. It was able to highlight the impact of women's safety in public spaces in relation to their mobility. A study conducted by Kondylis et al. in 2020 quantifies the economic cost of harassment in public transportation.

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<sup>1</sup> According to the World Bank, a vulnerable group is "a population that has some specific characteristics that makes it at higher risk of falling into poverty than others living in areas targeted by a project. Vulnerable groups include the elderly, the mentally and physically disabled, at-risk children and youth, ex-combatants, internally displaced people and returning refugees, HIV/AIDS- affected individuals and households, religious and ethnic minorities and, in some societies, women". Available at: <https://archive.unescwa.org/vulnerable-groups>

<sup>2/3</sup> <https://blogs.worldbank.org/transport/all-too-often-transport-women-are-afterthought>

<sup>4</sup> World Bank (2019). Informing Transport Investments Through Data Systems and Evidence. Available at: <https://thedocs.worldbank.org/en/doc/0050022019-156371554223752892/original/DIMEProgramBriefieConnect.pdf>

The study reveals that harassment imposes a meaningful tax on women who commute every day, equivalent to %1.7 of the gender wage gap and implying a %0.53-0.43 decrease in female labor supply. The results show that women value “safe spaces” reserved for women such as women-only trains, waiting areas only for women, and other safety procedures. However, the existence of those “safe spaces” can sometimes normalize harassment outside those spaces. Hence, the study puts forth the importance of policies that directly address the violence and its perpetrators<sup>5</sup>. Another study, also conducted by the World Bank, analyses gender-based violence in the public transportation sector in Tanzania. The data indicates that women frequently experience various forms of verbal and non-verbal gender-based violence in public transportation in the form of groping, catcalls, inappropriate comments, assault, and rape<sup>6</sup>. In a paper authored by Boker (2021), findings show that in Delhi women choose lower quality colleges to feel safer while traveling, relative to men with comparable choice sets who choose higher-quality colleges. Beyond women’s human capital attainment, these findings suggest implications on women’s participation in the labor force, as well as their economic empowerment<sup>7</sup>. To date, global data about women’s needs in public transportation is still deficient. However, a Thomson Reuters Foundation survey of 1,000 women in Cairo, London, Mexico City, New York and Tokyo found that 52 per cent of respondents overall cited safety as their main worry when using public transportation<sup>8</sup>.

## Women Mobility in the Lebanese Context

In the Lebanese multi-faceted crisis context, women are facing manifold challenges. The crisis has not only impacted women’s economic situation, but also has severely affected their mobility, thus worsening the impact on their everyday lives.

Lebanese women face various challenges that restricts their mobility, hampers their participation to the workforce and their ability to access education, higher-paying jobs, social networks, etc. First, Lebanon has no formalized public transportation system such as state-sanctioned trains, metros or ferries. However, there are public buses and vans that operate on particular routes across cities and areas<sup>9</sup>. All taxis and buses must be formally licensed by the Ministry of Public Works and Transport and can be recognized by their red

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<sup>5</sup> Kondylis, F. et al. (2021). Demand for “Safe Spaces”: Avoiding Harassment and Stigma. Policy Research Working Paper; No. 9269. World Bank, Washington. Available at: <https://openknowledge.worldbank.org/handle/33853/10986>

<sup>6</sup> World Bank, Understanding and Addressing Gender-Based Violence in Public Transport for Highly Vulnerable Groups in Dar es Salaam. Available at: <https://thedocs.worldbank.org/en/doc/0050022020-179331603898899363/original/15653WBDIMEPolicyBriefTRATanzaniaGBV.pdf>

<sup>7</sup> Boker, G. (2021). Safety First : Perceived Risk of Street Harassment and Educational Choices of Women. Policy Research Working Paper; No. 9731. World Bank. Available at: <https://openknowledge.worldbank.org/handle/36004/10986>

<sup>8</sup> Belinda Goldsmith (2018). Safety and time are women’s biggest concerns about transport – global poll, Thomson Reuters Foundation. Available at <https://www.reuters.com/article/us-transport-women-poll/exclusive-safety-and-time-are-womens-biggest-concernsabout-transport-global-poll-idUSKCN1NK04K>

<sup>9</sup> UNWOMEN (2021). Women’s Experiences of Harassment in Taxis: A Case Study of Tripoli, Lebanon. Available at: [https://lebanon.unwomen.org/sites/default/files/08-2022/Taxi20%Harassment20%Study\\_Eng\\_August2022Reupload.pdf](https://lebanon.unwomen.org/sites/default/files/08-2022/Taxi20%Harassment20%Study_Eng_August2022Reupload.pdf)

number plate. Nonetheless, some taxis remain unlicensed and have white number plates, as the price of a Ministry-licensed red one is considered expensive. Second, public transportation in rural areas is limited, making it more challenging for women living in these areas to access services outside their community unless they have a private car. Third, Lebanese women have safety concerns when using public transportation. Figures from the IMAGES Survey<sup>10</sup> show that an estimated 57 per cent of women in Lebanon have been sexually harassed in public spaces at least once<sup>11</sup>. However, very few are the publicly available studies to date that provide information on the extent to which harassment occurs in public transportation in Lebanon. According to a study conducted by Nasr (2017), in Beirut, harassment is a daily concern for women using minivans and most of the incidents go unreported due to the lack of judicial system to report such incidents<sup>12</sup>. In 2022, UN Women published a case study on women's harassment in taxis in Tripoli. According to the study, more than two thirds of the women interviewed had experienced or witnessed some form of sexual harassment while using taxis<sup>13</sup>. Fourth, due to the current economic crisis, the public transportation fares became more expensive, adding an additional challenge on women, whose access to financial resources is limited.

## II. Purpose of the Research

There are two main drivers for this research: the vital role of women's mobility for their daily lives (as highlighted in the literature) and the lack of data and studies on public transportation in the Lebanese context. To date, no other published studies, aside from those mentioned in the context review, have been conducted. The primary motive to conduct this national research is to: understand women's public transportation behaviors and practices, identify the specific barriers to their mobility, study the impact of public transportation on women's life and understand women's experiences in using public transportation in Lebanon.

## III. Methodology

For the purpose of answering our research questions, a mixed participatory approach was adopted combining a quantitative study through a survey on a sample of 1239 Lebanese females using public transportation spread over the 8 governorates. The survey was complemented using a qualitative tool by conducting 8 Focus Group Discussions (FGDs) on a national scale. This takes into account all women in Lebanon using public transportation, including Lebanese women, refugee women (Syrian and Palestinian) and domestic workers<sup>14</sup>.

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<sup>10</sup> UN Women and Promundo-US, *Understanding Masculinities: Results from the International Men and Gender Equality Survey (IMAGES) – Middle East and North Africa: Egypt, Lebanon, Morocco, and Palestine* (2017). Available at <https://imagesmena.org/en/>.

<sup>11</sup> UNWOMEN (2021). Op. cit.

<sup>12</sup> Nasr, N. (2017). *Fighting sexual harassment in Lebanon: where are we now and how far have we come?* KIP Project on Gender and Sexuality.

<sup>13</sup> Ibid

<sup>14</sup> See the detailed methodology in Appendix A.

The upcoming sections present the findings from the survey followed by the insights from the FGDs, paving the way for a set of recommendations.

## **IV. Findings from the Survey**

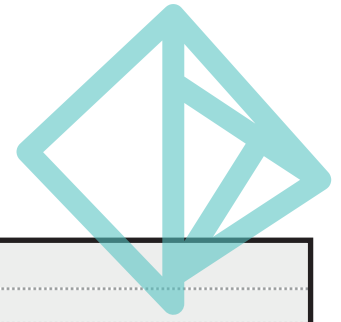
This section presents the findings generated from the national surveys<sup>15</sup>. The surveys were conducted with women from diverse backgrounds, ages, and socioeconomic statuses, who commute using public transportation in Lebanon. The survey findings are followed by insights from the eight focus group discussions held in all the Lebanese governorates with Lebanese and Non-Lebanese Females.

### **IV.1. Main Highlights from the Survey**

The main highlights from the survey are listed below and followed by detailed analysis and statistics, which are explained thoroughly in four subsections. The first subsection gives the socio-professional profile of women using public transportation from those who participated in this random stratified survey. The second subsection explores the behavior and patterns of transportation adopted by Lebanese women, such as mostly used means, single versus multiple rides, and reasons for using public transportation. The third subsection unveils the barriers and challenges facing women during their commutes, including the affordability of public transportation, effectiveness, safety and security (along with perceived fears), and satisfaction from using public transportation in Lebanon. The last subsection studies the impact of public transportation in Lebanon on the daily lives, careers, and education decisions of these women, in addition to harassment incidents.

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<sup>15</sup> Refer to Appendix D for the survey questions.



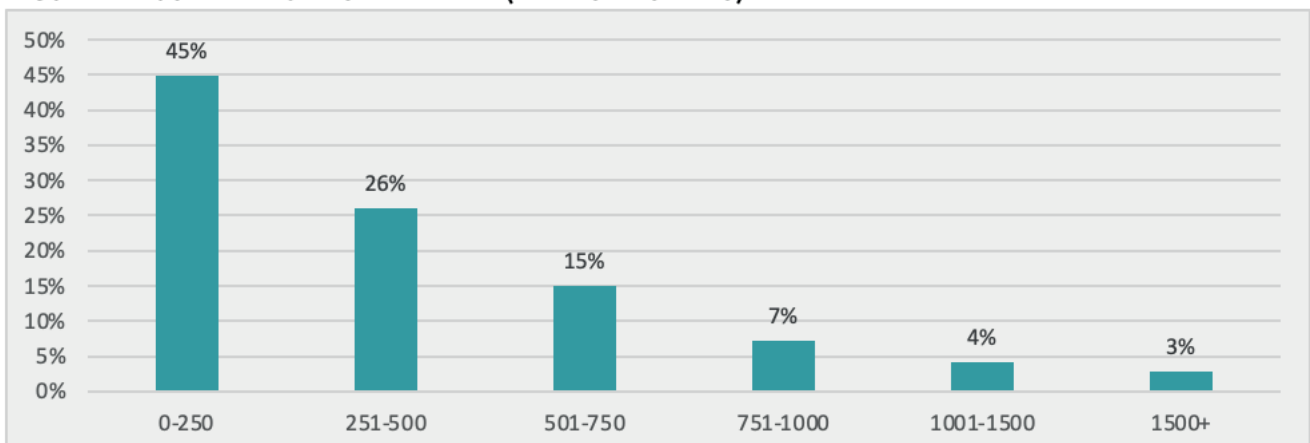
<b>Socio-professional profile of women using public transportation</b>	
<b>Age</b>	<ul style="list-style-type: none"> <li>Young females are the main female users of public transportation</li> </ul>
<b>Marital status</b>	<ul style="list-style-type: none"> <li>Half of the women using public transportation are single</li> </ul>
<b>Occupation</b>	<ul style="list-style-type: none"> <li>The majority of women are employees or university students</li> </ul>
<b>Income bracket</b>	<ul style="list-style-type: none"> <li>Half of them earn less than \$250 per month and 75% earn less than \$500</li> </ul>
<b>Behavior and patterns of women using public transportation</b>	
<b>Commonly used means of transportation</b>	<ul style="list-style-type: none"> <li>Only 20% use bus (national public transportation)</li> <li>80% use private taxi cabs, vans, public service and ride sharing apps</li> </ul>
<b>Reason for using public transit</b>	<ul style="list-style-type: none"> <li>The main reason for women using public transportation is to reach the workplace</li> </ul>
<b>Pattern</b>	<ul style="list-style-type: none"> <li>The majority use public transportation alone. It is challenging to use it with children, elderly or disabled individuals.</li> <li>The frequency of using public transportation increased after the crisis</li> <li>24% of women use public transportation to move to a different area and/or a different governorate</li> <li>56% of women who move from one governorate to another have to take multiple rides per day</li> <li>37% of women using public transportation need multiple rides per day</li> </ul>
<b>Barriers to using public transportation</b>	
<b>Affordability</b>	<ul style="list-style-type: none"> <li>63% find public transportation very expensive</li> <li>60% pay between 75,000 and 150,000 LBP per day on public transportation</li> </ul>
<b>Effectiveness</b>	<ul style="list-style-type: none"> <li>Around 90% walk between 5 and 20 min to reach the public transportation stop and wait another 5 to 20 min to find a transportation mean</li> <li>60% find public transportation ineffective in terms of speed, punctuality, availability and pick-up points</li> </ul>
<b>Safety and security</b>	<ul style="list-style-type: none"> <li>Around 60% find public transportation unsafe (driver not respecting the driving rules, fear of being kidnapped, raped, robbed or harassed)</li> </ul>
<b>Satisfaction</b>	<ul style="list-style-type: none"> <li>60% of women using public transportation are unsatisfied in terms of comfort, cleanliness, air conditioning, treatment, smoking, etc...</li> <li>Only 34% would recommend public transportation for a friend, colleague or relative</li> </ul>
<b>Impact of public transportation on women's life</b>	
<b>Habits</b>	<ul style="list-style-type: none"> <li>55% had to change their living habits (outings, visits, activities, food shopping, etc.) due to public transportation limitations</li> </ul>
<b>Career</b>	<ul style="list-style-type: none"> <li>Around 43% indicated that public transportation negatively affects their career</li> <li>59% pointed out that public transportation negatively affects their ability to reach their destination on time</li> <li>32% indicated that they lost a job opportunity (arriving late, or not going to an interview) because of public transportation limitations</li> </ul>
<b>Education</b>	<ul style="list-style-type: none"> <li>Around 63% of women students were affected in their education (mostly delaying their education or having to change their institutions or even stop)</li> </ul>
<b>Harassment</b>	<ul style="list-style-type: none"> <li>21% of women indicated that they were harassed while using public transportation</li> <li>Harassment commonly takes place in the van or bus</li> <li>Almost half of the harassments are mainly originated from a passenger or from the driver</li> <li>All types of harassment occur (verbal, physical and inappropriate behavior) but it is mostly verbal</li> <li>Only 5% of harassed women reported the incident and 8% sought support, the others either responded verbally or neglected the harasser or tried to avoid public transportation</li> </ul>
<b>Mental health</b>	<ul style="list-style-type: none"> <li>Almost half of the females have been experiencing anxiety and low self-esteem because of having to use public transportation</li> </ul>

## IV.2. Socio-Professional Status of Women Using Public

- ◆ Young females are the main female users of public transportation in Lebanon (81%) are between 18 and 38 years old
- ◆ Half of the women using public transportation in Lebanon are single
- ◆ The majority of women using public transportation in Lebanon are employees or university students
- ◆ Half of women using public transportation in Lebanon earn less than 250\$ per month and 75% earn less than 500\$ per month

- ◆ The majority of the respondents to the survey (%81) are between 18 and 38 years old.
- ◆ Half of the women using public transportation are single (%54) followed by %39 who are married. However, only %4 are divorced, %2 widowed and %1 separated.
- ◆ Most of the participants using public transportation have a university level education. %46 have undergraduate educational level, and %24 have postgraduate level. Moreover, %20 have secondary level, only %6 have elementary educational level and %4 are illiterate.
- ◆ %40 of the respondents are currently employees, followed by %21 students, %16 stay at home moms, %5 freelancers and %3 business owners. However, only %16 do not work.
- ◆ Half of the respondents study or work in the private sector, while only %24 work or study in the public sector.
- ◆ %45 have an income per family in fresh dollars between 0 and 250\$, followed by %26 between 251\$ and 500\$ and %15 between 501\$ and 750\$. However, only %4 have an income per family between 1001\$ and 1500\$ and the remaining %3 have 1500 and more.

FIGURE 1 INCOME BRACKETS PER FAMILY (IN FRESH DOLLARS)



### IV.3. Women's Public Transportation Behaviors and Practices in Lebanon



- ◆ Only 20% of women using public transportation use the bus (national public transportation) while %80 use private taxi cabs, vans, public service and ride sharing app
- ◆ The main reason women use public transportation is to reach the workplace. Another frequently mentioned reason is visiting family
- ◆ 80% of women using public transportation use it alone without any company
- ◆ Most of the women find it very challenging to use public transportation with children, elderly or disabled individuals
- ◆ 24% of women use public transportation to move to a different area and/or a different governorate
- ◆ 37% of women using public transportation need multiple rides per day
- ◆ 56% of women who move from one governorate to another have to take multiple rides per day

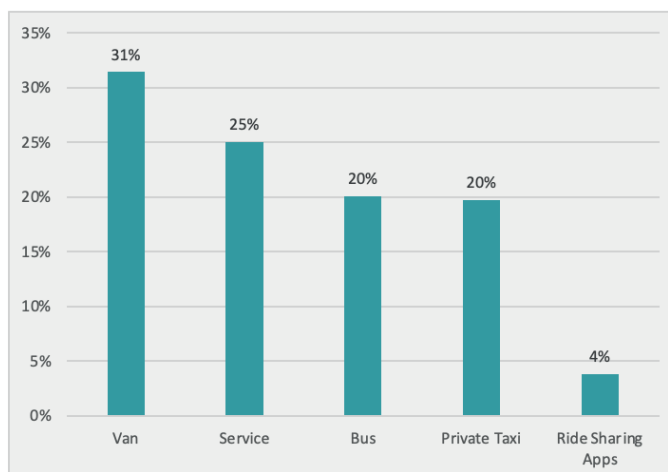
◆ For 26% of the women interviewed, their studies, work or regular commutes are located in Beirut irrespective of their residence area, followed by: 17% in the North, 14% in Mount Lebanon, 13% in the South, 12% in Beqaa, 6% in Akkar, 5% in Nabatieh and the remaining 3% are in Baalbek/ Hermel and another 3% in Keserwen/ Jbeil.

◆ 31% of the Lebanese females using public transportation mostly commute via vans, followed by 25% who mostly use public service. Moreover, 20% mostly use private taxi and another 20% use bus. However, only 4% use ride sharing apps (such as UBER and Careem). Almost 38% of them usually use the public transport during the day only, 1% use it at night only and the rest (61%) use it either way. More specifically, 33% only use it during the peak hours 9:00-7:00 AM/ 7:00-5:00 PM and 28% use it all day.

◆ The primary reason for using public transportation is commuting to work for 56% of the participants, followed by 51% for visiting family, %36 for reaching school and 20% for other errands (shopping or heading to a social activity).

◆ Most of the respondents indicated that it is very challenging to use public transportation with children, elderly or disabled individuals.

FIGURE 2- MOST USED PUBLIC TRANSPORTATION



- ◆ The majority of the respondents use public transportation alone the majority of the time. Less frequently, they would have a companion, including a family member, friends, colleagues and/or spouse/fiancé.
- ◆ About half of the respondents (47%) have their work and locations in different neighborhoods, but in the same governorate, followed by 29% who have them in the same neighborhood. However, the remaining 24% have their work and locations in a different governorate.
- ◆ The highest percentage of respondents (62%) use public transportation 1 to 2 times per day followed by 30% use it 2 to 4 times per day and 6% use it 4 to 6 times per day. About 1 % use public transportation 6 to 8 times per day, and less than 1% use it 9 or more times.

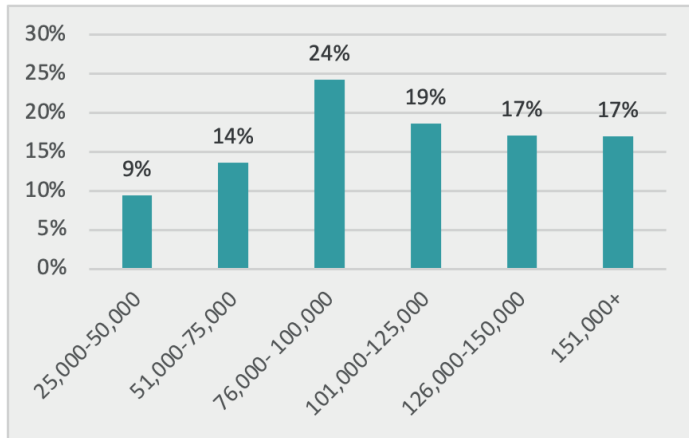
#### IV.4. Barriers to Using Public Transportation



- ◆ 63% of women using public transportation in Lebanon find it very expensive
- ◆ 60% pay between 75,000 and 150,000 LBP per day on public transportation
- ◆ Around 90% walk between 5 and 20 min to reach the public transportation stop and wait another 5 to 20 min to find a transportation mean
- ◆ 60% find public transportation ineffective in terms of speed, punctuality, availability and pick-up points
- ◆ Around 60% find public transportation unsafe (driver not respecting the driving rules, fear of being kidnapped, raped, robbed or harassed)
- ◆ 60% of women using public transportation are unsatisfied in terms of comfort, cleanliness, air conditioning, treatment, smoking, etc...
- ◆ Only 34% would recommend public transportation to a friend, colleague or relative

## Affordability

FIGURE 3- AVERAGE COST PAID PER DAY

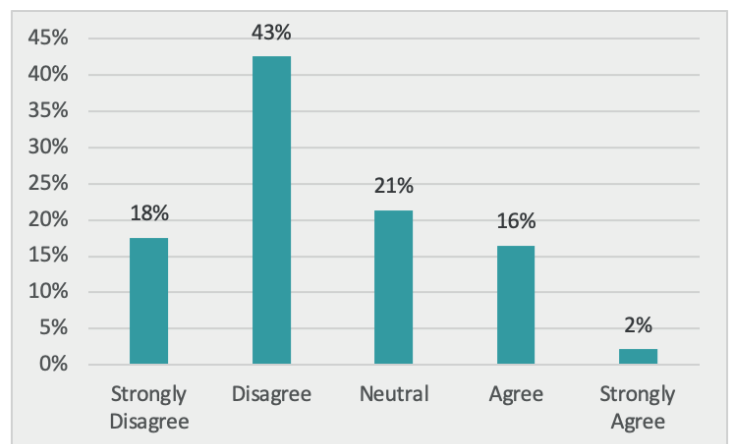


◆ In light of the perceived expensive public transportation cost, 63% of women using public transportation in Lebanon find it very expensive. Among the participants, 24% indicated that they pay between (76,000 and 100,000) LBP per day on transportation, followed by 19% who pay between (101,000 and 125,000) LBP, 17% between (126,000 and 150,000) LBP and another 17% pay more than 151,000 LBP. Only 14% pay between (51,000 and 75,000) LBP and 9% between (50,000-25,000) LBP.

## Safety and Security

◆ Females indicated serious concerns regarding security and safety while using public transportation. For instance, around 62% of the participants disagree that the driver is respecting the driving laws, 62% pointed out that their personal space is not respected in public transportation (62%). They are afraid of being kidnapped (59%), afraid of robbery and pickpockets (68%) and of being harassed (64%). Overall, the majority 61% of women mentioned that they feel unsafe in public transportation

FIGURE 4- SENSE OF SAFETY IN PUBLIC TRANSPORTATION



## Effectiveness

◆ Almost 45% of the interviewed females are unsatisfied from the availability of public transportation. Some villages and remote areas do not have any means of public transportation, and if available, it is very hectic and time consuming to catch any mean of public transportation.

◆ Among the participants, 61% are unsatisfied with the accessible information about using public transportation (availability of maps, information about pick-up location, routes, timings and frequency).

◆ Similarly, 58% disagree that pick-up and drop-off points are convenient.

◆ About 54% disagree that the speed of public transportation is acceptable. They indicated that sometimes it takes long hours to reach the destination, either due to the speed or to the too many stops.

- ◆ Half of the women using public transportation (52%) disagree that the punctuality of public transport is respected or satisfactory.
- ◆ Around 90% walk between 5 and 20 min to reach the public transportation stop and wait another 5 to 20 min to find a transportation mean.

## Satisfaction

- ◆ Women interviewed indicated that they are not satisfied with the service provided by the public transportation in Lebanon, due to several inconveniences. Among these inconveniences, the lack of comfort related to: air conditioning, cleanliness, crowded and/or noisy space within the transportation mean (65%), the treatment such as rude or talkative drivers (54%), and exposure to smoking by the driver or other passengers (62%).
- ◆ Only 34% would recommend public transportation to a friend, a colleague or a relative.
- ◆ Accordingly, at least 61% of the participants believe that the overall public transport experience should be enhanced.

## Service Enhancement

- ◆ The majority of the participants pointed out that the experience in public transportation in Lebanon can be enhanced on different fronts:

Enhancement measures	% Of participants
▪ Lowering the transportation fees	75%
▪ Providing mandatory driving trainings to the public transport driver	77%
▪ Adding CCTV in the public transport is beneficial	78%
▪ Law enforcement presence at public transport stops	78%
▪ Having the public transport schedules, timing and stops well defined	80%
▪ Restricting noise, smoking, and social distancing in the public transport	80%
▪ Adding labels on driver information and hotline in visible places in the public transport	82%
▪ Developing an application for tracking public transport and arrival times	82%

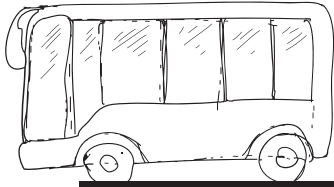


## IV.5. Impact of Public Transportation on Women's Life

- ◆ 55% of women had to change their living habits (outings, visits, activities, food shopping, etc.) due to public transportation limitations
- ◆ Around 43% indicated that public transportation negatively affects their career
- ◆ 59% pointed out that public transportation negatively affects their ability to reach their destination on time
- ◆ 32% indicated that they lost a job opportunity (arriving late, or not going to an interview) because of public transportation limitations
- ◆ Around 63% of women students were affected in their education (mostly delaying their education or having to change their institutions or even stop)
- ◆ 21% of women indicated that they were harassed while using public transportation
- ◆ Most of the harassment took place in the vans or the bus
- ◆ Almost half of the harassments are mainly originated from a passenger or from the driver
- ◆ All types of harassment occur (verbal, physical, inappropriate behavior) but it is mostly verbal
- ◆ Only 5% of harassed women reported the incident and 8% sought support, the others either responded verbally or neglected the harasser or tried to avoid public transportation
- ◆ Almost half of the females have been experiencing anxiety and low self-esteem because of having to use public transportation

### Mobility

- ◆ The female participants indicated that public transportation negatively affects their ability to reach their destination on time (59% of respondents).
- ◆ Similarly, 64% agreed that public transportation makes them leave home very early to get on time.
- ◆ Almost 42% mentioned that public transportation makes them wait in the office to secure transportation.
- ◆ Around 45% agreed that public transportation negatively affects their mobility with their elderly, their children or a disabled individual.



# 55%

## of the females are missing out on social life due to public transportation

- ◆ Approximately 55% agreed that they have to change their living habits by reducing their outings and visits (sports/activities, food shopping, visiting parents and friends) to cope with the availability of public transportation.
- ◆ Moreover, 65% agreed that they have to allocate more budget for transportation.
- ◆ Around 38% agreed that they might consider moving to a new area closer to family/ friends.

### Education

- ◆ Around 63% of women students had their education affected by delays, with 47% enrolling in less courses to match the minimum number of days, or having to change their education institutions to a closer location (15%) or even to stop their education (2%)

# 32%



**of the females lost job opportunities due to public transportation limitations!**

### Career

- ◆ Around 43% of women interviewed agreed that public transportation negatively affects their career.
- ◆ 32% of the participants indicated that they lost a job opportunity (arriving late, or not going to an interview) because of public transportation limitations they face.

### Mental Health

- ◆ Almost half of the participants have been experiencing anxiety because of having to use public transportation, faced by 13% who have developed low self-esteem because of having to use public transportation.

### Harassment

- ◆ Women using public transportation are exposed to all types of harassments. Around 21% of the respondents indicated that they were harassed while using public transportation.
- ◆ Among those who were harassed, 47%, have been harassed in the vans, followed by 33% harassed in the buses, 28% harassed in the private taxis, 23% harassed in the public service and the remaining %2 harassed in the car via taxi app.
- ◆ Almost half of the harassments originated mainly from the passenger, followed by 46% originated from the driver and 27% originated by walker at the bus/ van stop or taxi/ service. Only 11% originated from the driver assistant.

◆ Around 29% of women who indicated harassment were harassed 2 times, followed by 23% harassed 1 time and 15% harassed 3 times. Only 10% were harassed 5 times, 5% harassed 4 times and 4% harassed 6 times.

◆ About half of the participants experienced verbal harassment, followed by %17 who experienced physical harassment and another %17 experienced inappropriate behavior and the remaining %13 experienced all of the above.

### Coping with Harassment

◆ Only 5% of harassed women reported the incident and 8% sought support, the others either responded verbally, neglected the harasser or tried to avoid public transportation.



## IV.6. The Role of Public Transportation in Affecting Women's Life

In order to test the importance of each determinant of the use of public transportation in affecting women's life in Lebanon, we use the cross-sectional data collected from the survey to estimate the impact of each of the factors on the women's' life<sup>16</sup>.

The statistical results showed that the fear of kidnapping, robbery, and harassment has the highest impact on women's daily life with regard to their mobility and career decisions. The next impactful factors are effectiveness and satisfaction levels with the services provided by public transportation. This comprises of the punctuality, speed or smoothness of catching a public mean of transportation. The results show that the lack of smoothness and effectiveness when using the public transportation is adding a burden on the life of Lebanese women and is pushing them to make decisions that hinder their career and educational paths.

Regarding the safety and security concerns while taking public transportation, the regression shows that when the Lebanese women feel safe using public transportation, they will be more willing to use those transportation methods, and this would facilitate their mobility and work-life decisions. For instance, if public transportation is safe and secure, they would not need to look for alternative transportation means, accept to work in remote areas, and forgo using a private car. The same applied to university students; they would be able to pursue their education in remote universities or colleges, choosing the majors they want without having to add transportation limitations to their decisions. This study shows that many female students do not enroll in the university of their choice and sometimes settle for a different major due to the inability to commune to educational institutions via safe and secure public transportation.

<sup>16</sup> Refer to Appendices B and C for the regression models and their results

The fifth factor affecting women’s life regarding public transportation is the affordability of transportation fees. The survey results suggest that this factor is important yet statistically insignificant (p-value>0.05) and of a lesser impact than the other factors.

## V. Findings from the Focus Groups Discussions

Eight focus female group discussions<sup>17</sup> took place with Lebanese, Syrian Refugees, Palestinian Refugees, and Domestic Workers in all the Lebanese Governorates. Diversifying the locations between cities and villages minimizes any geographic biases in our sampling since females in the cities have different experiences with regards to public transportation than those in the villages.

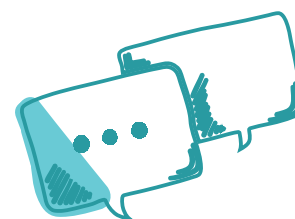
Similar to the approach used to present the findings from the survey, this upcoming section points out the main highlights from the focus group discussions . Subsequently, more details are discussed in four subsections; (1) the socio-professional status of the participants, (2) the behavior and patterns of women while using public transportation in Lebanon, (3) the barriers facing them, and (4) the impact on their lives.

### V.1. Main highlights from the Focus Group Discussions

<b>Behavior and patterns of women using public transportation</b>	
<b>Commonly used means of transportation</b>	<ul style="list-style-type: none"> <li>Beirut and North participants would rather use the bus and not public service because it is cheaper to go to work.</li> <li>Public transportation in remote villages especially in the South is quite absent.</li> </ul>
<b>Pattern</b>	<ul style="list-style-type: none"> <li>Women need multiple rides per day</li> <li>In light of the current economic crisis, women try to postpone the tasks and /or to purchase goods they need into a single ride to save additional transportation.</li> <li>North Participants started using the toktok because it is cheaper than traditional public transportation means.</li> <li>Palestinian women expressed their preference in using the toktok if they find it.</li> </ul>
<b>Barriers to using public transportation</b>	
<b>Affordability</b>	<ul style="list-style-type: none"> <li>Females from Mount Lebanon, Beirut, North, South, Palestinians, Syrians and domestic workers find public transportation very expensive, especially if they use it with a companion.</li> </ul>
<b>Effectiveness</b>	<ul style="list-style-type: none"> <li>Some South participants from the villages cannot find transportation at all.</li> <li>Women from the North, Bekaa, Mount Lebanon, Syrians, Palestinians and domestic workers mentioned that they need to walk a lot to find a bus or public service.</li> </ul>
<b>Safety and security</b>	<ul style="list-style-type: none"> <li>Women from Mount Lebanon, Bekaa, Beirut, North, South, Palestinians, Syrians and domestic workers indicated that public transportation is not safe at all.</li> <li>Women face robbery and harassment (commonly verbal).</li> <li>Women point out that drivers drive in an unsafe way, cross the speed limit, insult each other, do not respect the presence of women or kids, and they drive though unknown roads. This adds stress, fear and anxiety to the female riders.</li> </ul>

<sup>17</sup> Refer to Appendix D for the FGD Tool.

<b>Satisfaction</b>	<ul style="list-style-type: none"> <li>▪ Women from the South, Beirut, Bekaa, Mount Lebanon and Syrian participants rated the comfort from using public transportation very low (between 1-2 out of a scale of 5), while North, Domestic and Palestinian participants rated it between 3 and 4.</li> <li>▪ Almost all of the participants rated public transportation on average of 3 in terms of treatment.</li> <li>▪ The female participants indicated that they often are exposed to secondhand smoking by the driver and other riders while using public transportation.</li> <li>▪ Women prefer to have a car rather than recommending public transportation, but agree that it is a must if there is no private car.</li> </ul>
<b>Impact of public transportation on women's life</b>	
<b>Mobility</b>	<ul style="list-style-type: none"> <li>▪ Women indicated that they need to go out earlier to find a taxi or bus.</li> </ul>
<b>Habits</b>	<ul style="list-style-type: none"> <li>▪ In light of the current economic crisis, women try to postpone the tasks and /or the purchase goods they need into a single ride to save additional transportation and fuel cost.</li> </ul>
<b>Career</b>	<ul style="list-style-type: none"> <li>▪ Beirut, North and Syrian participants mentioned that they changed their jobs because of transportation.</li> </ul>
<b>Harassment</b>	<ul style="list-style-type: none"> <li>▪ Harassment occurs from several sources; from the driver, passengers and even people on the streets.</li> <li>▪ In cases of harassment, women would shout aloud for help, reply to the verbal insult or call someone for help.</li> <li>▪ Most women commonly faced verbal harassment.</li> <li>▪ Domestic workers continuously face insults but they do not respond. They choose to ignore the insults.</li> </ul>



## V.2. Socio-Professional Status of Women Participating to the FGDs

To solicit the in depth information from females using public transportation in Lebanon, the researchers held eight focus group discussions with 10-9 women in each group distributed as follow:

- a. Five Focus groups in the Lebanese governorate (North (including Akkar), Mount Lebanon, Beirut, South (including Nabatieh), and Bekaa Area.
- b. One focus group with Syrian Refugees.
- c. One focus group with Palestinians Refugees
- d. One focus group with domestic workers

The focus groups were mindful to include different ages (including youth), different backgrounds (education, marital status, employment) and different neighborhoods (cities and villages) to benefit from the input of the participants while ensuring diversification.

### V.3. Behavior and Patterns of Women Using Public Transportation

- ◆ Almost all of the participants from Mount Lebanon, Bekaa, Beirut, North, South, Palestinians, Syrians and domestic workers agree that they postpone all the tasks and goods they need into a single ride to save additional transportation and fuel cost.
- ◆ Beirut and North participants use the bus and not the public service because it is cheaper to go to work. Some South participants cannot find transportation at all, and those who can find, claim it is very expensive. The rest either use their own car or public service.
- ◆ All of the participants need at least double transportation per day, and some pay additional charge to reach a certain point.
- ◆ Moreover, North Participants started using the toktok and mentioned that its use is increasing continuously because it is cheaper. Palestinians stated that they prefer to start using the toktok if they find it.

**Palestinian:** Most of the services are afraid of entering the Mukhayam (Palestinian Camps), so I get down near the army checkpoint and walk.

**South:** No service at all, even your needs, you should go far away to another village or place.

**Bekaa:** Every time the driver stops in a point, he asks for extra charge.

**Mount Lebanon:** When there is no car, we are postponing most of our appointments till Saturdays or when my husband can take us because even appointments end during weekdays before we can arrive.



### V.4. Barriers to Using Public Transportation

#### Affordability

- ◆ The Focus Group Discussions revealed that women from Mount Lebanon, Beirut, North, South, Palestinians, Syrians and Domestic find public transportation very expensive, especially if they use it with a companion.
- ◆ Moreover, that participants clarified that though the fees did not change in terms of USD, but inflated considerably in LBP, while the income is still the same. This made the cost of transportation very expensive and to some no longer affordable.



**Bekaa:** In \$ terms the transportation fees are the same but in LBP it shoted very high, our income is in LBP so it is not worth it and not equivalent to the \$.

**Beirut:** Very expensive, but it is the responsibility of the government not the driver because of the fuel.

**South:** Very expensive since the income is very limited, especially if there are frequent rides.

## Effectiveness

- ◆ Some South participants, especially those in the villages (not the cities of Siada, Sour or Nabatieh) cannot find transportation at all, and those who can find, claim it is very expensive.
- ◆ Participants from North, Bekaa, Mount Lebanon, Syrians, Palestinians and Domestic mentioned that they need to walk a lot to find a bus or service. Moreover, all of the participants mentioned that it differs between drivers, some know the roads, some ask, but most of them are aware.

**Bekaa:** Drivers fight all the time and insult each other and race. They never respect that there are women and kids.

**Syrians:** Sometimes the driver knows the way, but sometimes he asks and charges extra money.

**South:** The car horn, the traffic signals are just a decoration and not used by the drivers. Too much smoking!

**Domestic:** They drive in an appropriate way, but if he is a Syrian he may take us into another place

## Safety and security

- ◆ The discussion during the FGDs shows that all of the participants from Mount Lebanon, Bekaa, Beirut, North, South, Palestinians, Syrians and Domestic agree that public transportation is not safe at all. They face robbery and harassment, especially verbal.
- ◆ North participants feel safe in their village because they know the drivers and the passengers, but this is not the case once they step out of their villages
- ◆ Similarly, participants from Bekaa, feel safe only if they know the driver.
- ◆ Moreover, participants from Beirut, frequently face cases where the drivers are smoking or even consuming weed.
- ◆ Beirut and Syrian participants prefer to take someone with them to feel safer, while Bekaa participants do not.
- ◆ All of the participants feel unsafe especially when the driver starts driving through unknown allies or taking shortcuts away from the main roads.
- ◆ Moreover, they all agree that drivers drive in an unsafe way, they cross the speed limit, they insult each other and they do not respect the presence of women and kids.
- ◆ In addition, Palestinians mentioned that drivers ask for different charges depending on the destinations.

**Mount Lebanon:** Previously, I used to love public transportations and use them very frequently. But, now it is not safe at all!

**Bekaa:** It is safe if you know the driver only, other than that it is not. Especially at night, you can't go out unless you know the driver.

**Beirut:** Sometimes the driver is using weed! We hold our bag on the street very tight and my wallet is in my pocket.

**Palestinians:** We don't take excess money with us, only our need.

**North:** Once we are in our village buses, it is safe because the same driver and belongs to the main office and we are the same people frequently.

### Satisfaction

- ◆ During the FGDs, South, Beirut, Bekaa, Mount Lebanon and Syrian participants rated public transportation between 2-1 out of 5, in terms of comfort, while North, Domestic and Palestinian participants rated it between 3 and 4.
- ◆ Almost all of the participants rated public transportation on average of 3 in terms of treatment.
- ◆ The female participants indicated that they often get exposed to secondhand smoking by the driver and other riders while using public transportation.
- ◆ Finally, all of the participants prefer to have a car rather than recommending public transportation, but agree that it is a must if there is no private car.

**Mount Lebanon:** If you have a private car don't sell it, but you may be obliged to use public transportation since fuel is very expensive.

**North:** We absolutely recommend private cars not public transportation.

**Syrians:** In terms of smoking, they do not respond and verbally insult us.

**Beirut:** Advice to buy a car if possible, much better than public transportation.

### Service Enhancement

- ◆ All of the participants agree that the public transportation charges should be decreased.
- ◆ Participants from the South Villages, Mount Lebanon, and Bekaa mentioned the need for more stations.
- ◆ However, Beirut participants believe that the number of buses should decrease because there is a huge number.
- ◆ Almost all of the participants agree that municipalities and the government should employ several busses for each region and village, to ensure a safer atmosphere and quicker trips.

**Bekaa:** Stations Should increase? There should be more stations and more buses but needs more organization, and control, the drivers sometimes drink alcohol!

**Domestic:** We don't know, just to have a safer atmosphere free from rubbery.

**Beirut:** They should decrease a lot, between the van and another, there is a van!

## V.5. Impact of Public Transportation on Women's Life

- ◆ All of the participants in the FGDs agree that they need to go out earlier to find a taxi or bus, and that they started walking as much as possible.
- ◆ Palestinian participants would like to change their jobs to nearer places, but they cannot find any
- ◆ Domestic workers on the other hand, do not have to forgo job opportunities (cleaning houses), since the transportation fees are paid by the employers.
- ◆ Beirut, North and Syrian participants mentioned that they changed their jobs because of transportation.
- ◆ Participants in the FGDs, mentioned that harassment occurs from several sources; the driver, passengers, and even people on the streets. Moreover, they mentioned that in cases of harassment, they would shout out loud for help, reply back the verbal insult or call someone for help. However, Mount Lebanon participants mentioned that people may help during the day, but at night, it is not safe at all. They almost all agree that harassment occurs during the day or night, but more frequently at night.
- ◆ Most of them only faced verbal harassment. Domestic participants continuously face insults and they do not respond.



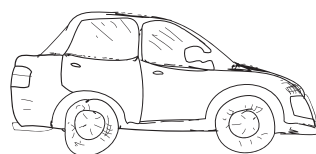
**Syrians:** We changed our work to find nearer places because of transportation. I have a knife always with me.

**Mount Lebanon:** You may help during the day but at night no, not safe at all.

**North:** We need to go earlier maybe at 5 am if have 8 am work. Moreover, if you wait a bus, men think that you are a bad girl!

**Bekaa:** We are obliged to work for money not for time and transportation consumes a lot of our time.

**South:** I may go out 2 hours before my appointment to reach on time! If we encountered a harassment case, we absolutely help others



## VI. Conclusion and Recommendations

The survey and focus group discussions showed that women in Lebanon face very weak and limited public transportation services, which negatively affects their personal, educational, career, social, and psychological lives. Among the respondents, 61% of the Lebanese females do not feel safe while using public transportation, 59% are afraid of being kidnapped, 88% are fearful of being robbed, %86 are immensely scared of harassment with 21% of women who experience a form of harassment. This is reflected in 13% of the females having psychological distress and building a sense of low self-esteem. On the education and career fronts, 38% of the females had to settle for lower educational opportunities, with a similar 32% of the females who lost job opportunities due to the challenges faced due to the poor public transportation in Lebanon.

### Recommendations

Several suggestions were provided by the respondents as means to improve the service of public transportation including but not limited to:

Barrier	Mitigating measures
<b>Affordability</b>	<ul style="list-style-type: none"> <li>Need to lower public transportation fees.</li> </ul>
<b>Effectiveness</b>	<ul style="list-style-type: none"> <li>Having the public transport schedules, timing and stops well defined.</li> <li>Developing an application for tracking public transport and arrival times.</li> <li>The need for more organized bus/service/van stations.</li> <li>Municipalities and the government should organize and employ several buses for each region and village, to ensure a safer atmosphere and quicker trips.</li> <li>For Beirut, there is a need to organize and control the excessive number of vans.</li> </ul>
<b>Satisfaction</b>	<ul style="list-style-type: none"> <li>Restricting noise, smoking, and ensuring social distancing in the public transport.</li> </ul>
<b>Safety and security</b>	<ul style="list-style-type: none"> <li>Driving training lessons (safety and PSEA) to the public transport drivers.</li> <li>Adding labels on driver information and hotline in visible places in the public transport.</li> <li>Adding CCTV in the public transport is beneficial.</li> <li>Law enforcement presence at public transport stops.</li> <li>Municipalities and the government should organize and employ several buses for each region and village, to ensure a safer atmosphere and quicker trips.</li> </ul>

Apart from the suggestions provided by the survey and FGDs and during the preparation of this report, Lebanon received an aid of 300 buses from Qatar<sup>18</sup>. Hence, it would be highly recommended that the Government, in collaboration with the municipalities, put a plan to use those buses efficiently and primarily to serve villages and remote areas with clear maps and routes.

<sup>18</sup> <https://www.globalvillagespace.com/qatar-to-donate-3000-world-cup-buses-to-lebanon/>

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## Appendix A- Methodology

A participatory mixed approach was adopted by combining both quantitative (via a national survey), as well as qualitative (via focus group discussions) methods.

### Qualitative

A qualitative approach was used for the in-depth analysis via eight focus group discussions (FGD) with women in Lebanon distributed as follow:

- a. 5 Focus groups in the Lebanese governorate (North (including Akkar), Mount Lebanon, Beirut, South (including Nabatieh), Bekaa Area.
- b. 1 focus group with Syrian Refugees
- c. 1 focus group with Palestinians Refugees
- d. 1 focus group with domestic workers

The focus groups were mindful to include different; ages (including youth), backgrounds and neighborhoods to benefit from the input of the participants while ensuring diversification.

All FGDs were recorded and stored on a secured drive. The recording was then transcribed, and transcripts were reviewed and validated to ensure the quality and accuracy of the information.

As for the data analysis and report writing, the content analysis approach is used. Using content analysis, the team was able to quantify and analyze the presence, meanings, and relationships of specific words, themes, or concepts.

### Quantitative

A national survey was conducted to capture Lebanese Women's input about their understanding, barriers, and experience with public transportation in Lebanon and its impact on their lives.

The proposed sample size follows the Cochrane Statistical formula that suggests a minimum of 384 respondents to ensure a significance level of 95% (5% confidence interval). This sample was tripled to cover the national scope and hence, 1200 surveys including the pilot surveys are targeted.

The data collection method included two steps: 1. digitization of the questionnaire, and 2. the dissemination of the questionnaire link via WhatsApp or through the support of enumerators. After this, the researchers reported and collected the responses while maintaining the respondents' anonymity and confidentiality.

The output of the provided data is in standard Microsoft Excel and SPSS formats. After finalizing the data collection process, the full data was exported and underwent a cleansing process to correct or remove any corrupt/duplicate entries. All statistical tests were conducted via SPSS at %5 significance level.

## Sample distribution for quantitative methodology

The sample was distributed geographically and then randomized to avoid any bias. Other filters such as age group, education level, employment, and marital status are added in the demographics section of the survey to allow for segregation as needed.

TABLE 1 SAMPLE DISTRIBUTION PER GOVERNORATE

Resident of:	Number of Participants	Percentage
Mount Lebanon	345	27.85%
North	180	14.53%
South	131	10.57%
Beqaa	124	10.01%
Baalbek / Hermel	111	8.96%
Akkar	99	7.99%
Beirut	99	7.99%
Nabatiyeh	86	6.94%
Keserwan / Jbeil	64	5.17%
<b>Grand Total</b>	<b>1239</b>	<b>100%</b>

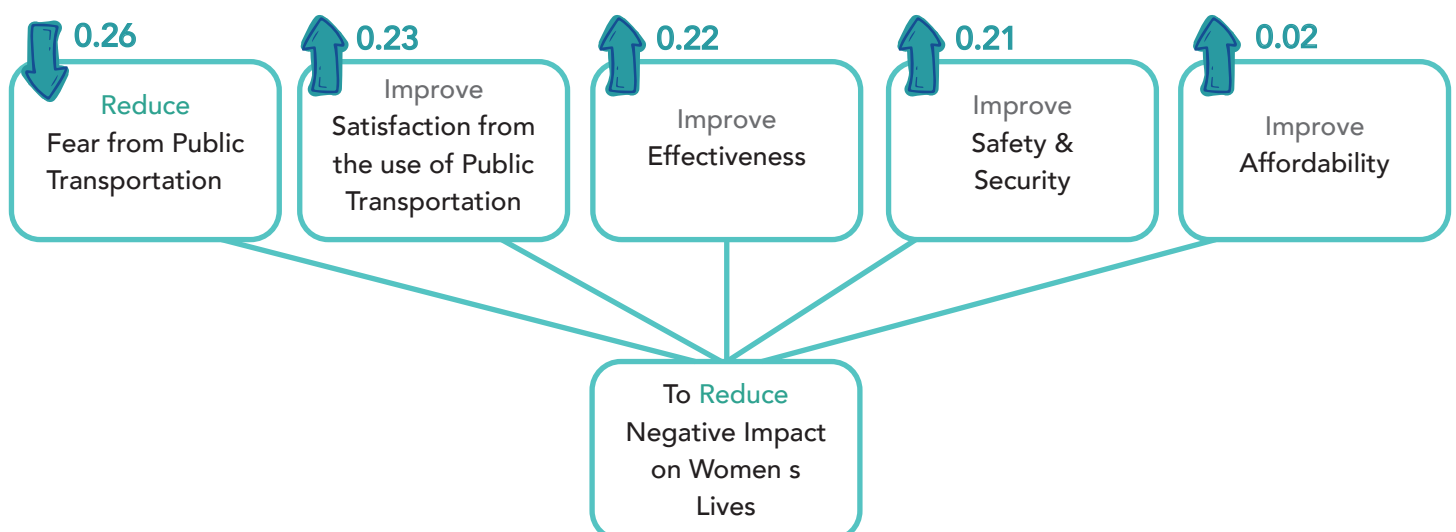


## Appendix B – Regressions

In order to test the importance of each determinant of the use of public transportation and its effect on women's life in Lebanon, we use the cross-sectional data collected from the survey in order to estimate the below linear model:

is the dependent variable which refers to the Negative Impact of Public Transportation on Women's Life. It is an index calculated per respondent as the average of their answers in the survey to questions related to: Mobility, Daily Lives, Harassment and Mental Health, and are the explanatory variables. 1. is the affordability of public transportation calculated for each individual as the average score of the their answer to questions in the survey related to affordability; 2. refers to safety and security in public transportation, it is the average score per respondent to questions; 3. is the effectiveness of public transportation, obtained by calculating the average score per participant to questions; 4. refers to satisfaction from using public transportation, calculated as the average score per individual to questions; 5. refers to the anxiety related potential kidnapping, robbery and harassment in public transportation. Moreover, and are control variables. is the income bracket and is the educational level.

After running the relevant statistical tests such as the reliability test to compose the dependent and the independent variables, the researchers computed the variables by taking the average scores for each respondent while including the robust items with a Cronbach Alpha, exceeding 0.65 for each variable (Refer to Appendix A for the detailed statistical tables). After that, the researchers ran a bivariate correlation matrix between all the composite variables to test for multicollinearity. The results indicated high multicollinearity between all the independent variables ( $r \geq 0.5$ ). Therefore, based on the aforementioned model, the researchers ran several regressions and then decided on splitting the impact over five simple significant regressions. Those regression equations were generated to quantify the impact of the public transportation related variables on women's life (mobility, work, education, and others).



The statistical results showed that the fear of kidnapping, robbery, and harassment has the highest impact on women's daily life with regard to their mobility and career decisions. The higher the fear factor, the higher the impact of the negative effect on the women's lives. Accordingly, reducing the fear factors (harassment, kidnapping, and theft) associated with the use of public transportation by 1 point (on a scale from 1 to 5) would reduce the negative effect on Lebanese Women's life by 0.26 points (on a scale from 1 to 5). Furthermore, the regression shows that the fear factor explains the variation in the negative impact by %18.2 ( $R^2=0.182$ ).

The next impactful factors are effectiveness and satisfaction levels with the services provided by public transportation, be it the availability, punctuality, speed or the smoothness of catching a public mean of transportation. The results show that the lack of smoothness and effectiveness when using the public transportation is adding a burden on the life of Lebanese women and is pushing them to make decisions that hinder their career and educational paths. Thus, improving the factors that enhance the effectiveness and satisfaction from public services by 1 point (on a scale from 1 to 5) would reduce the negative impact of public transportation on the Lebanese women by 0.22 and 0.23 points (on a scale from 1 to 5) respectively. The regression shows that effectiveness and satisfaction factors explain the variation in the negative impact by %7.7 and %8 respectively.

Regarding the safety and security concerns while taking public transportation, every 1 point (on a scale from 1 to 5) improvement in the security and safety measures of public transportation would reduce the negative effect on the Lebanese women's lives by 0.21 points. The regression shows that the safety and security factors explain the variation in the negative impact by %18.2. Meaning that, when the Lebanese's women feel safe using public transportation, they will be more willing to use those transportation methods. This would facilitate their mobility and work-life decisions. For instance, if public transportation is safe and secure, they would not need to look for alternative transportation means, accept to work in remote areas, and forgo using a private car. The same applied to university students; they would be able to pursue their education in remote universities or colleges, and choose the majors they want without having to add transportation limitations to their decisions. This study shows that many female students do not enroll in the university of their choice and sometimes settle for a different major. This is due to the inability of the women to commute to educational institutions via safe and secure public transportation.

The fifth factor affecting women's life regarding public transportation is the affordability of transportation fees. The survey results suggest that this factor is important yet statistically insignificant ( $p\text{-value}>0.05$ ) and of a lesser impact than the other factors.

## Appendix C – Statistical Tests

Reliability Test / The Composite Variable	Alpha Cronbach	Items Retained
WL= Negative Effect on Women’s Lives	0.90	14
SS= Safety and Security	0.74	3
Fear= Fear of harassment, kidnap and theft	0.91	3
Sat= Satisfaction Level from the use of Public Transportation	0.67	4
Eff= Effectiveness of Public Transportation	0.82	5

Correlation	Aff	WL	Eff	Sat	SS	Fear	
Aff	Correlation Sig. (2-tailed) N	1 .656 1239	-.028 .238 249	-.075 .459 249	-.047 .284 249	-.068 .284 249	.028 .658 249
WL	Correlation Sig. (2-tailed) N	-.028 .656 249	1 .000 249	-.277** .000 249	-.284** .000 249	-.299** .000 249	.427** .000 249
Eff	Correlation Sig. (2-tailed) N	-.075 .238 249	-.277** .000 249	1 .000 249	.685** .000 249	.738** .000 249	-.188** .003 249
Sat	Correlation Sig. (2-tailed) N	-.047 .459 249	-.284** .000 249	.685** .000 249	1 .000 249	.588** .000 249	-.187** .003 249
SS	Correlation Sig. (2-tailed) N	-.068 .284 249	-.299** .000 249	.738** .000 249	.588** .000 249	1 .000 249	-.190** .003 249
Fear	Correlation Sig. (2-tailed) N	.028 .658 249	.427** .000 249	-.188** .003 249	-.187** .003 249	-.190** .003 249	1 .003 249

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Regression 1

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	SSnew <sup>b</sup>	.	Enter

a. Dependent Variable: WL

b. All requested variables entered.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.299 <sup>a</sup>	.090	.086	.60624

a. Predictors: (Constant), SSnew

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.945	1	8.945	24.339	.000 <sup>b</sup>
	Residual	90.779	247	.368		
	Total	99.724	248			

a. Dependent Variable: WL

b. Predictors: (Constant), SSnew

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.834	.110		34.774	.000
	SSnew	-.209	.042	-.299	-4.933	.000

a. Dependent Variable: WL



## Regression 2

### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Fear <sup>b</sup>	.	Enter

a. Dependent Variable: WL

b. All requested variables entered.

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.427 <sup>a</sup>	.182	.179	.57462

a. Predictors: (Constant), Fear

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.166	1	18.166	55.016	.000 <sup>b</sup>
	Residual	81.558	247	.330		
	Total	99.724	248			

a. Dependent Variable: WL

b. Predictors: (Constant), Fear

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.394	.131		18.341	.000
	Fear	.259	.035	.427	7.417	.000

a. Dependent Variable: WL

### Regression 3

#### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Eff <sup>b</sup>	.	Enter

a. Dependent Variable: WL

b. All requested variables entered.

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.277 <sup>a</sup>	.077	.073	.61052

a. Predictors: (Constant), Eff

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.657	1	7.657	20.543	.000 <sup>b</sup>
	Residual	92.067	247	.373		
	Total	99.724	248			

a. Dependent Variable: WL

b. Predictors: (Constant), Eff

#### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.890	.131		29.751	.000
	Eff	-.216	.048	-.277	-4.532	.000

a. Dependent Variable: WL

## Regression 4

### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Sat <sup>b</sup>	.	Enter

a. Dependent Variable: WL

b. All requested variables entered.

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.284 <sup>a</sup>	.080	.077	.60930

a. Predictors: (Constant), Sat

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.027	1	8.027	21.623	.000 <sup>b</sup>
	Residual	91.697	247	.371		
	Total	99.724	248			

a. Dependent Variable: WL

b. Predictors: (Constant), Sat

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.900	.130		30.071	.000
	Sat	-.233	.050	-.284	-4.650	.000

a. Dependent Variable: WL

## Regression 5

### Variables Entered/Removed<sup>a</sup>

Model	Variables Entered	Variables Removed	Method
1	Aff <sup>b</sup>	.	Enter

a. Dependent Variable: WL

b. All requested variables entered.

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.028 <sup>a</sup>	.001	-.003	.63515

a. Predictors: (Constant), Aff

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.080	1	.080	.199	.656 <sup>b</sup>
	Residual	99.644	247	.403		
	Total	99.724	248			

a. Dependent Variable: WL

b. Predictors: (Constant), Aff

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.394	.161		21.081	.000
	Aff	-.018	.041	-.028	-.446	.656

a. Dependent Variable: WL

## Appendix D – The Research Tools

### Survey Tool



Women &  
Public Transportatio

### FGD Tools



FGD Tool - Women  
and Pubic Transport

