

## Questionnaire S1: Survey of the research study

### Part one: Socio-economic Characteristics

- Gender:
  1. Male
  2. Female
  
- Age:
  1. 18-29
  2. 30-44
  3. 45-64
  4. More than 65
  
- How many people are currently living in your household, including yourself?
  1. Two or less
  2. Three or four
  3. Five or six
  4. More than six
  
- Do you have a driver's license?
  1. Yes
  2. No
  
- Does anyone in your family own a car that you can use?
  1. none
  2. one vehicle
  3. two compounds
  4. 3 or more vehicles
  
- What is the average monthly income of your family in Jordanian dinars?
  1. Less than 280 JD
  2. 280-499 JD
  3. 500-999 JD
  4. 1000-1499 JD
  5. 1500-2999 JD
  6. More than 3000 JD
  7. I prefer not to answer
  
- What is the highest level of education you have completed?

1. School certificate
  2. High School (Tawjihi)
  3. Diploma
  4. Bachelor's degree
  5. Graduate school degree: Master's or Doctorate degree (MD, PhD, JD)
- Which of the below describes your current job status?
    1. student
    2. Employee (full-time, part-time, day laborer or self-employment)
    3. housewife
    4. retired
  - Do you consider yourself a person with disabilities?
    1. Yes
    2. No

### **Part two: Daily Trips Information**

- What is the average travel time from home to your work/university?
  1. 10 min
  2. 10 – 20 min
  3. 20 – 40 min
  4. 40 – 60 min
  5. More than 60 min
- Which of the following times represents the time you go out to work/University?
  1. Before 8:00 am
  2. Between 8:00 and 10:00 am
  3. Between 10:00 am and 3:00 pm
  4. Between 3:00 to 7:00 pm
  5. Between 7:00 pm and 12:00 am
- What are the average daily trips (including work/study/visit/...) from Sunday to Thursday between 7:00 a.m. and 12:00 p.m.?
  1. one trip daily
  2. Two trips daily
  3. Three trips daily
  4. Four trips daily
  5. Five trips daily and more
- What is the main purpose of your morning trip?
  1. Studying purposes

2. Recreation

- What is the secondary purpose of your trips during working/studying time?
  1. Work
  2. Studying purposes
  3. Visit a doctor/shop/bank transactions/ government transactions
  4. Others
  
- How many transportation modes do you need to go to your work/university?
  1. One mode
  2. Two modes
  3. Three and more
  
- What is the main mode of transport you use to go to/from work/university?
  1. By Walking
  2. Private vehicle
  3. Public transportation
  4. Smart transportation applications
  5. Taxi
  6. More than one mode
  
- How often do you use the following transportation over the past week for various daily activities:

**To those who answered (6) in previous question**

Modes	I didn't use it	One to two times	Three to five times	5 times and more
Public transportations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smart transportation applications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taxi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
By walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Over the past week, how do you describe the parking spaces?

**To those who answered (2) in previous question**

- Available for a fare
  - Available without fare
  - Not available
- What is the average monthly cost for parking?

**To those who answered (b) in (7)**

- I don't pay
- 4 JD and less
- 4 – 12 JD
- 12 – 20 JD
- 20 – 30 JD
- More than 30 JD

**Part three: public transport, share-ability and intelligent transportation applications**

- How do you describe traffic in Amman?
  - Very crowded
  - Crowded
  - Normal
  - Not crowded
- How consistent are you with the following statements:

	<b>Strongly agree</b>	<b>Agree</b>	<b>Undecided</b>	<b>Disagree</b>	<b>Strongly disagree</b>
<b>Citizens will use public transportation services if the service is considered</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>comfortable and orderly</b>					
<b>Increasing fuel prices and vehicle taxes will help in solving environmental and traffic problems</b>	<input type="checkbox"/>				
<b>Increasing the use of public transport by citizens will have a positive impact on the purity of the environment around us</b>	<input type="checkbox"/>				
<b>Increasing the use of public transport systems will help in reducing traffic congestion</b>	<input type="checkbox"/>				

- How consistent are you with the following statements in declining the use of public transportations:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Current public transport services cannot be used for daily life activities	<input type="checkbox"/>				
Smart transport applications	<input type="checkbox"/>				
Increasing numbers of private vehicles	<input type="checkbox"/>				
Lack of public transport service in my area	<input type="checkbox"/>				
Lack of a schedules for public transport systems	<input type="checkbox"/>				
High cost	<input type="checkbox"/>				

- How compatible are you with the efficiency of the following statement in reducing congestion?

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Providing buses to transport staff from/to work/university	<input type="checkbox"/>				
The idea of sharing a vehicle with others	<input type="checkbox"/>				
Applying the idea of flexible working in cities	<input type="checkbox"/>				
Linking public transport with smart transport applications	<input type="checkbox"/>				
Improving public transport service	<input type="checkbox"/>				
Building bridges and tunnels	<input type="checkbox"/>				

- How compatible are you with the following statement?

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Smart transportation applications contribute in reducing the number of vehicles on the roads	<input type="checkbox"/>				
I prefer to share my trip with others even if the time of the trip is higher	<input type="checkbox"/>				
Sharing my trip with others will reduce the cost of the journey and contribute to reducing traffic congestion on major roads	<input type="checkbox"/>				
The presence of modern technology such as GPS and phone applications has greatly contributed to the improvement and development of the transportation system	<input type="checkbox"/>				
Integrating smart transport applications with public transport will contribute to solving most of the traffic problems, which reflects on the development and prosperity of the city	<input type="checkbox"/>				

I will continue to use smart transportation applications and with other passengers with different destinations	<input type="checkbox"/>				
I encourage the use of smart transportation applications of sharing independent trips, even if this will reflect the travel time	<input type="checkbox"/>				
I encourage the use of on-demand buses, so that they are pre-ordered and collect all passengers around and deliver them to their regions in a flexibility	<input type="checkbox"/>				

- To what extent do you agree with the following sentences in explaining people's demand and preference for smart transportation applications over taxi service?

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
The ability to see and follow the driver	<input type="checkbox"/>				
Knowing travel time needed	<input type="checkbox"/>				

The ability to accurately select the starting and ending points	<input type="checkbox"/>				
driver's kindness	<input type="checkbox"/>				
Possibility to pre-order trip	<input type="checkbox"/>				
The ability to request the service any time	<input type="checkbox"/>				
Know the cost in advance	<input type="checkbox"/>				

**Part four: Bus Rapid Transit (BRT)**

- Did you hear about BRT before?
  1. Yes
  2. No
- Based on the attached picture, can the bus be used to go to your destination?



Source: [61]

1. Yes
  2. No
- What is the means of transportation that you will use if you want to reach the nearest station of BRT?
    1. By walking
    2. Private vehicle
    3. Public transport
    4. Smart Transportation Applications
  - BRT is currently operating with a trial period from Sweileh Station to Amman Museum Station, at a cost of 0.55 JD, with a frequency of every 5 minutes. Have you ever thought about using this service to go to work/university?
    1. Yes
    2. No
  - In your opinion, what are the main determinants of not using the BRT?
    1. Difficulty to reach BRT stations
    2. Time
    3. BRT doesn't serve my path
    4. Distance
    5. I prefer not to use public transportation
    6. The existence of other more efficient and attractive means of transportation
    7. Others (list them)
  - Does your opinion of using BRT affected by the seasons of the year?

1. Strongly agree
  2. Agree
  3. Undecided
  4. Disagree
  5. Strongly disagree
- Which of the following seasons will you use BRT in?

<b>To those who answered (1) and (2) in previous question</b>
<b>Can answer more than one option</b>

1. Summer
  2. Winter
  3. Spring
  4. Autumn
- Based on the information shown in the following table, what is the most convenient mode of transportation to use to go to work/university?

**Notes:**

- Waiting time represents the difference between the time required to start and the actual time of departure.
- Total time represents waiting time plus time spent inside the vehicle.
- Cost represents the total cost of going from home to work/university using certain transportation mode.

	<b>Private vehicle</b>	<b>Ride-sourcing services</b>	<b>Ride-sourcing services and BRT</b>
<b>Waiting Time (min)</b>	-	2, 3, 4.5	4.5, 5.5, 8
<b>In Vehicle Travel Time (min)</b>	9, 21.5, 22.5	10, 21.5, 27.5	11.4, 21.8, 24.3
<b>Total Travel Time (min)</b>	9, 21.5, 22.5	12, 25.5, 30.5	15.9, 24.3, 27.3
<b>Cost (JD)</b>	1.3, 1.6, 1.9	0.8, 1.5, 1.7	1.3, 1.46, 3

1. Private vehicle
2. Ride-sourcing services
3. Ride-sourcing services and BRT

- Based on the information shown in the following table, what is the most convenient mode of transportation to use to go anywhere except work/university?

**Notes:**

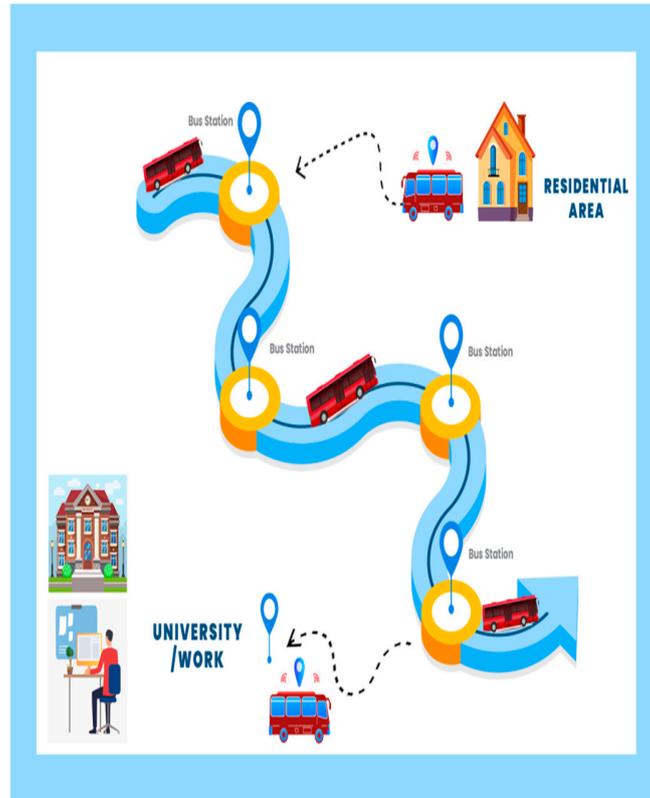
- Waiting time represents the difference between the time required to start and the actual time of departure.
- Total time represents waiting time plus time spent inside the vehicle.
- Cost represents the total cost of going from home to work/university using certain transportation mode

	Private vehicle	Ride-sourcing services	Ride-sourcing services and BRT
<b>Waiting Time (min)</b>	-	4, 4.5 , 5	5.5, 10.5, 11.5
<b>In Vehicle Travel Time (min)</b>	13, 22 , 30	14, 22, 27	10.7, 19.5, 30.8
<b>Total Travel Time (min)</b>	13, 22 , 30	18, 26.5, 32	16.2, 20, 38.3
<b>Cost (JD)</b>	1.29, 1.59, 1.88	0.93, 1.57, 1.67	1.3, 1.46, 3

4. Private vehicle
5. Ride-sourcing services
6. Ride-sourcing services and BRT

**Part 5: Scenarios related to merging more than one mode of transport and linking it to each other**

Introduction: recently, the idea of integrating more than one means of transportation and connecting them to each other are followed by the developed countries, to provide appropriate and effective public transportation for the people of their communities in addition to their importance in reducing payments for the expansion and development of their networks and addressing the environmental impacts of traffic volume. In this part of the resolution we will present more than one scenario to connect the express bus with sophisticated and modern transportation.



Source: Author's

- If the responsible authorities decide to provide the following options, which of the following do you find most suitable to go to work/university?

Option 1: Build parking near major and minor Bus Rapid Transit (BRT) stations so that users can park their own vehicles in these parking spaces at a cost of JD 1 per day and use BRT.

Option 2: Integrate BRT with smart transport applications so that it can be used to travel from home to the nearest BRT station and from station to home with half of the cost per trip covered by responsible authorities.

Option 3: Integrate BRT with on-demand buses so that the user requests this service three hours in advance and locates the departure time as well as the maximum waiting time that can be afforded. After receiving this information from users and through advanced software, the system determines the appropriate route for each bus to load users from their homes to the nearest fast-frequency bus station at a cost of between 0.28 and 0.55 JD based on the starting point of BRT station.

Option 4: Use your own vehicle from home to work/university

Notes:

- Waiting time represents the difference between the time required to start and the actual time of departure.
- Total time represents waiting time plus time spent inside the vehicle.
- Cost represents the total cost of going from home to work/university using certain transportation mode

	<b>1st option: Private vehicle and BRT</b>	<b>2ND option: Ride- sourcing services and BRT</b>	<b>3RD option: Bus on-demand and BRT</b>	<b>4TH option: Private vehicle</b>
<b>Waiting Time (min)</b>	2.5, 2.5, 2.5	4.5, 5.5, 8	7, 9.3, 11.5	-
<b>In Vehicle Travel Time (min)</b>	11.4, 19.3, 22.8	11.4, 21.8, 24.3	15.4, 23.3, 26.8	9, 21.5, 22.5
<b>Total Travel Time (min)</b>	13.9, 21.8, 25.3	15.9, 24.3, 27.3	22.4, 32.6, 38.3	9, 21.5, 22.5
<b>Cost (JD)</b>	1.77, 1.8, 1.86	1.3, 1.46, 3	0.83, 0.96, 1.1	1.3, 1.6, 1.9

1. 1<sup>st</sup> option
2. 2<sup>nd</sup> option
3. 3<sup>rd</sup> option
4. 4<sup>th</sup> option

- If the responsible authorities decide to provide the following options, which of the following do you find most suitable to go to anywhere except work/university?

Option 1: Build parking near major and minor Bus Rapid Transit (BRT) stations so that users can park their own vehicles in these parking spaces at a cost of JD 1 per day and use BRT.

Option 2: Integrate BRT with smart transport applications so that it can be used to travel from home to the nearest BRT station and from station to home with half of the cost per trip covered by responsible authorities.

Option 3: Integrate BRT with on-demand buses so that the user requests this service three hours in advance and locates the departure time as well as the maximum waiting time that can be afforded. After receiving this information from users and through advanced software, the system determines the appropriate route

for each bus to load users from their homes to the nearest fast-frequency bus station at a cost of between 0.28 and 0.55 JD based on the starting point of BRT station.

Option 4: Use your own vehicle from home to anywhere except work/university

**Notes:**

- Waiting time represents the difference between the time required to start and the actual time of departure.
- Total time represents waiting time plus time spent inside the vehicle.
- Cost represents the total cost of going from home to anywhere except work/university using certain transportation mode

	<b>1st option: Private vehicle and BRT</b>	<b>2ND option: Ride- sourcing services and BRT</b>	<b>3RD option: Bus on-demand and BRT</b>	<b>4TH option: Private vehicle</b>
<b>Waiting Time (min)</b>	2.5, 2.5, 2.5	5.5, 10.5, 11.5	7, 9.3, 11.5	-
<b>In Vehicle Travel Time (min)</b>	9.7, 14.5 , 27.8	10.7, 19.5, 30.8	13.7, 18.5, 22.8	13, 22 , 30
<b>Total Travel Time (min)</b>	12.2, 17, 30.3	16.2, 20, 38.3	20.7, 27.8, 34.3	13, 22 , 30
<b>Cost (JD)</b>	1.6, 1.66, 1.72	1.3, 1.46, 3	1.1, 0.96, 0.83	1.29, 1.59, 1.88

1. 1<sup>st</sup> option
2. 2<sup>nd</sup> option
3. 3<sup>rd</sup> option
4. 4<sup>th</sup> option

- Would you stop using your private vehicle if these services are implemented and activated?
  1. Yes
  2. No
- How does each of the following factors affect your choices in previous scenarios?

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Travel time	<input type="checkbox"/>				
Cost	<input type="checkbox"/>				
More than one way to travel	<input type="checkbox"/>				
Waiting time	<input type="checkbox"/>				
Sharing with others	<input type="checkbox"/>				

- How compatible are you with the idea of integrating more than one mode of transport and linking it to each other in the following statement?

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Creating jobs for young people	<input type="checkbox"/>				
Reduce traffic congestion	<input type="checkbox"/>				
Conservation	<input type="checkbox"/>				
Expanding transportation networks	<input type="checkbox"/>				

Encouraging the government to make similar transportation to other district in Jordan	<input type="checkbox"/>				
Save time	<input type="checkbox"/>				
Reducing cost	<input type="checkbox"/>				
Encouraging foreign investment	<input type="checkbox"/>				
Reduce fuel consumption	<input type="checkbox"/>				
Encouraging citizens to use public transport	<input type="checkbox"/>				