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Appendix
Questionnaire

Part A: Demographic/ Background Information

| | |
|---|-------------|
| Area type | Urban/Rural |
| Questionnaire no. | |
| Date | |
| Time taken to complete this questionnaire | |

I. Individual Information

| | | |
|----|--|---|
| 1. | Name | |
| 2. | Sex | a. Male b. Female |
| 3. | Date of Birth / Age | |
| 4. | Current address/ Locality where you live | |
| 5. | Religion | a. Hinduism b. Islam c. Christianity d. Sikhism e. Jainism f. Buddhism g. Zoroastrianism h. Others |
| 6. | Marital status | a. Married b. Single c. Divorced/ Separated d. Widowed |
| 7. | | |
| 8. | Are you looking for a job or do you want to study further? | a. Looking for a job b. Want to study further |
| 9. | Occupation | a. Home-maker/ housewife b. Student c. Unemployed d. Self-employed in agriculture/ primary sector e. Main workers in agriculture/ primary sector (>6 months) f. Casual labour in agriculture/ primary sector (<6 months) |
| | Occupation | Goods/ services in |

| | | | | |
|-----|---|--|-----------|----------|
| | | Self-employed in non-agriculture | | |
| | | Regular wage/ salary earning in non-agriculture (>6 months) <ul style="list-style-type: none"> • Officials/ managers • Shop workers | | |
| | | Casual labour in non-agriculture (<6 months) | | |
| | | g. Other | | |
| 10. | If self-employed, what is the ownership of the land/ shop? | a. Owned b. Rented c. Occupied rent-free/ slum area d. Other | | |
| 11. | Highest level of education qualification attained/ pursuing | | Completed | Pursuing |
| | | a. No schooling | | |
| | | b. Below class 5 | | |
| | | c. Between class 5 and class 10 | | |
| | | d. Class 10 | | |
| | | e. Class 12 | | |
| | | f. Diploma | | |
| | | g. Graduate | | |
| | | h. Post Graduate | | |
| | | i. Above | | |
| 12. | Monthly income (if employed) | a. ≤ 5,000 b. 5,001 to 10,000 c. 10, 001 to 15,000 d. 15,001 to 20,000 e. 20,001 to 30,000 f. 30,001 to 50,000 g. 50,001 to 75,000 h. 75,001 to 1,00,000 i. > 1,00,000 | | |
| 13. | Relationship to household head | | | |
| 14. | Do you own a driving license? | a. Yes b. No | | |
| 15. | Do you use internet banking facilities/ NEFT/ Mobile payment apps (Paytm, BHIM, etc.) | a. Yes b.No | | |

II. Household Information (to be filled by the household head)

| | | | | | |
|-----|---|-------------------------------------|----------------------------------|----------------------------------|---|
| 16. | Type of family | a. Joint b. Nuclear c. Single | | | |
| 17. | Number of people in your family | | | | |
| 18. | Number of people living in the house | | | | |
| 19. | Name of the household head | | | | |
| 20. | Sex of the household head | | | | |
| 21. | Age of the household head | | | | |
| 22. | Number of married couples in the house | | | | |
| 23. | Number of children (below 18 years) in the house | | | | |
| 24. | Number of people above 60 years in the house | | | | |
| 25. | Number of working people in the house | | | | |
| 26. | Age of the youngest child in the house | | | | |
| 27. | Household's usual monthly consumption expenditure | | | | |
| 28. | Ownership of vehicles in the household | Vehicle | Name of the vehicle owned | No. of each vehicle owned | Fuel on which the vehicle runs |
| | | Bicycle | | | |
| | | Motorized Two-Wheelers | | | a. Petrol b. Diesel c. CNG d. Electric Vehicle |
| | | Motorized Four-Wheelers | | | a. Petrol b. Diesel c. CNG d. Electric Vehicle |
| | | Tractors, etc. | | | |
| | Most | Name of the vehicle | | a. Petrol | |

| | | | | |
|-----|--|---|--|--|
| | | frequently used vehicle in the household | | <ul style="list-style-type: none"> b. Diesel c. CNG d. Electric Vehicle |
| 29. | How long have you been living at this address? | | | |
| 30. | House ownership | <ul style="list-style-type: none"> a. Owned b. Rented c. Occupied rent-free d. Others | | |
| 31. | <p>Type of house in which you live:</p> <ul style="list-style-type: none"> a. Kutcha house: A house with mud, thatch walls and thatch roofs, i.e., walls made of grass, leaves, reeds etc., and roof of similar materials. b. Pucca house: Pucca house is the one of which predominant materials of wall is of burnt bricks, G.I. Sheets or other metal sheets, stone, cement, concrete etc. and roof are of tiles, slate, corrugated iron, zinc or other metal sheets or asbestos, cement sheets, burnt bricks, lime stone RBC/RCC etc. c. Semi-Pucca house: Houses which do not fall within the pucca/ kutcha category. Generally, such houses will have either the wall or roof of pucca material. | <ul style="list-style-type: none"> a. Kutcha b. Pucca c. Semi-pucca | | |
| 32. | <p>Condition of house:</p> <ul style="list-style-type: none"> a. Good: house which does not require any repair and is in fairly good condition. b. Livable: house which needs minor repairs. c. Dilapidated: house which shows signs of decay or the one breaking down and | <ul style="list-style-type: none"> a. Good b. Livable c. Dilapidated | | |

| | | |
|----------------|--|---|
| | requiring major repairs and are far from being in condition that can be restored or repaired. | |
| 33. | Type of floor at house | a. Mud b. Cement c. Marble/ Tile |
| 34. | Number of rooms in the house (Excluding bathrooms, sheds, garages, stables, etc. unless people are living in them) | |
| 35. | Is there a kitchen inside the house? | a. Yes b. No |
| 36. | Sanitation (Latrine facility) available | a. Yes b. No |
| 37. | Source of drinking water | a. Tap (Public supply) b. Tube well c. Hand-pump d. Bore well e. Tanker truck f. Bottled |
| 38. | Do you own the following durable goods? Mention the number of each owned if the answer is yes. | TV |
| | | Cable/ dish TV |
| | | Internet |
| | | Computer/Laptop |
| | | Mobile phone a. Keypad/general phone b. Touch screen phone |
| | | Landline |
| | | Refrigerator |
| | | Electric/ ceiling fan |
| | | Cooler |
| | | Air-conditioner |
| | | Sofa sets/ chairs and tables |
| | | Washing machine |
| | | Pressure cooker |
| | | Sewing machine |
| | | Mixer/ grinder |
| Cot | | |
| Water-purifier | | |
| Geyser | | |
| Microwave oven | | |
| LPG connection | | |

| | | | |
|-----|--|--|--|
| | | Livestock a. Poultry b. Goat c. Sheep d. Buffalo e. Cow f. Bullock | |
| 39. | Which is the most commonly used cooking fuel in the household? | a. LPG b. Biogas c. Solar energy d. Electricity e. Kerosene f. Coal g. Firewood h. Cow dung i. Charcoal j. Crop residue | |
| 40. | If self-employed in agriculture, source of land irrigation | a. Rain b. Tube-well and well c. Canal d. Tank | |
| 41. | Type of energy used in the household | a. Electricity b. Solar energy c. Biogas d. Other e. No electricity connection | |
| 42. | Does your house own a pet? | a. Yes b. No | |
| 43. | Does your house have any housekeeping service/ maid? | a. Yes b. No | |

Part B: Information relating to travel pattern/ behavior

Please answer the following questions (Q44- Q50) only if you are currently employed.

| | | |
|-----|---|---|
| 44. | How many times do you travel to work in a week? | a. 5 times per week or more b. 2-4 times per week c. Once a week or less |
| 45. | To which locality/ region in the town/ village do you travel to work? | |
| 46. | What distance do you travel to work? (Please mention only one-way information.) | a. 0-5 km b. 5-15 km c. 15- 25 km d. 25-35 km e. 35- 50 km f. >50 km |
| 47. | What is the usual time that you spend on travelling to work in a day? (Please | |

| | | |
|-----|---|---|
| | mention only one-way information.) | |
| 48. | Which is the most commonly used mode of transport that you take to work? (Please mention only one-way information.) | <ul style="list-style-type: none"> a. Walking b. Cycling c. Motorized Two-Wheeler <ul style="list-style-type: none"> • As a driver • As a passenger d. Motorized Four-Wheeler <ul style="list-style-type: none"> • As a driver • As a passenger e. Tractors f. Public Transport (Bus/ Train/ Auto rickshaw/ Jeep) g. Hired taxi/ Ola/ Uber h. Metro |
| 49. | Do you travel alone or pool your trip with somebody? (Please mention only one-way information.) | <ul style="list-style-type: none"> a. Individual trip b. Pooled trip |
| 50. | What is the average cost of your daily travel to work? (Please mention only one-way information.) | |

Please answer the following questions (Q51- Q55) only if you are currently unemployed/ housewives/ students.

| | | |
|-----|--|---|
| 51. | What is the usual purpose of your travel? | <ul style="list-style-type: none"> a. Education b. Medical/ Health purposes c. Shopping d. Pick-up/ Drop-off e. Eat-out f. Visiting friends/ relatives g. Religious activities h. Sport/ recreation |
| 52. | How many times do you travel for this purpose? | <ul style="list-style-type: none"> a. 5 times per week or more b. 2-4 times per week c. Once a week d. Twice a month e. Once a month f. Less often |
| 53. | What distance do you usually travel for this purpose? (Please mention only one-way information.) | <ul style="list-style-type: none"> a. 0-5 km b. 5-15 km c. 15- 25 km d. 25-35 km e. 35- 50 km f. >50 km |

| | | |
|-----|--|--|
| 54. | Which is the most commonly used mode of transport for this purpose? (Please mention only one-way information.) | a. Walking b. Cycling c. Motorized Two-Wheeler • As a driver • As a passenger d. Motorized Four-Wheeler • As a driver • As a passenger e. Tractors f. Public Transport (Bus/ Train/ Auto rickshaw/ Jeep) g. Hired taxi h. Metro |
| 55. | What is the approximate cost that you incur when you travel for this purpose? (Please mention only one-way information.) | |

For both employed and unemployed (Q56- Q60)

56. Please mention how frequently you travel for the following purposes (Tick the most appropriate answer).

| | 5 times a week or more | 2-4 times a week | Once a week | Once a fortnight | Once a month or less | As required |
|-------------------------------|------------------------|------------------|-------------|------------------|----------------------|-------------|
| Education (only for students) | | | | | | |
| Medical/ Health purposes | | | | | | |
| Shopping | | | | | | |
| Pick-up/ Drop-off | | | | | | |
| Eat-out | | | | | | |
| Visiting friends/ relatives | | | | | | |
| Religious activities | | | | | | |
| Sports/ recreation | | | | | | |

57. Please mention what mode of transport you use to travel for the following purposes (Tick the most appropriate answer and mention only one-way information).

| | Walking | Cycling | Motorized Two-Wheeler | Motorized Four-Wheeler | Public Transport (Bus/ Train/ Auto rickshaw/ | Hired taxi | Metro |
|--|---------|---------|-----------------------|------------------------|--|------------|-------|
| | | | | | | | |

| | | | | | | | |
|-------------------------------|--|--|--|--|-------|--|--|
| | | | | | Jeep) | | |
| Education (only for students) | | | | | | | |
| Medical/ Health purposes | | | | | | | |
| Shopping | | | | | | | |
| Pick-up/ Drop-off | | | | | | | |
| Eat-out | | | | | | | |
| Visiting friends/ relatives | | | | | | | |
| Religious activities | | | | | | | |
| Sports/ recreation | | | | | | | |

58. Please mention the approximate one- way cost that you incur while travelling for the following purposes (Please answer columns 3-5 in case you are unable to answer column 2 and mention only one-way information):

| Purpose of travel (1) | Cost of one – way trip (2) | Distance travelled (One-way) (3) | Name of the vehicle you most frequently use for travelling for the purpose (4) | Average that your vehicle gives (5) |
|-------------------------------|----------------------------|----------------------------------|--|-------------------------------------|
| Education (only for students) | | | | |
| Medical/ Health purposes | | | | |
| Shopping | | | | |
| Pick-up/ Drop-off | | | | |
| Eat-out | | | | |
| Visiting friends/ relatives | | | | |
| Religious activities | | | | |
| Sports/ recreation | | | | |

59. Which among the following is the **most** dominant factor which de-motivates you from using public transport? (**Only for those driving own vehicles**)

- My owned vehicle is readily available, is convenient, safe and saves time.
- Travelling by public transport will lower my status in the society.
- There is overcrowding in the public transport.

- d. Public transport is unsafe.
 - e. Public transport has rude and cheating staff.
 - f. There are not enough buses/trains on the route I frequently travel.
 - g. Because the services are irregular, the waiting period is too long.
60. Which among the following is the **most** dominant factor which will motivate you to reduce your own vehicle use? (**Only for those driving own vehicles**)
- a. Rise in petrol/ diesel prices.
 - b. Building more and efficient public transport.
 - c. Increase in tax on purchase of new motorized vehicles.
 - d. Increasing awareness of the effect of motorized vehicles on environment.
 - e. Increase in the number of toll roads.

Please answer the following questions (Q61- Q71) only if you are a FEMALE.

61. Have you ever experienced unpleasant respectively frightening situations during your journeys? This includes, for example, situations you were frightened because of persons coming too close to you, because you were mobbed or because of physical assaults, etc. This may have happened while you were walking, cycling, in the taxi, in public transport or at public transport stations/stops?

- a. Yes
- b. No

62. Have you ever experienced any of the following types of assaults/harassments while travelling on the various modes of transport? (You can tick in more than one box)

| | Walking | Cycling | Motorized Two-Wheeler | Motorized Four-Wheeler | Public Transport (Jeep/Bus/ Train/ Autorickshaw) | Hired taxi | Metro |
|---|---------|---------|-----------------------|------------------------|--|------------|-------|
| Verbal harassment (insulted, receiving sexually-coloured remarks) | | | | | | | |
| Non- verbal harassment (disregarding personal safety distance, physical contact of any type, forcibly showing pornography, chasing you with/without intention, disrobing, voyeurism (eg. making your secret | | | | | | | |

| | | | | | | | |
|---|--|--|--|--|--|--|--|
| video)) | | | | | | | |
| Attempted assaults (groping, intrusiveness, attempted rapes) | | | | | | | |

63. While taking the public transport, which one of the above-mentioned crimes are you most likely to experience?

| | |
|-----------------------|--|
| Verbal harassment | |
| Non-verbal harassment | |
| Attempted assaults | |

64. Have you faced or witnessed sexual harassment on public transport in the past six months? How often?

| | HOW MANY TIMES | |
|--|----------------|------------|
| | AS VICTIM | AS WITNESS |
| 1. Physical contact and advances involving unwelcome and explicit sexual overtures | | |
| 2. A demand or request for sexual favours | | |
| 3. Making sexually coloured remarks | | |
| 4. Forcibly showing pornography | | |
| 5. Any other unwelcome physical, verbal or non-verbal conduct of sexual nature | | |
| 6. Voyeurism (e.g. making a secret video of the woman) | | |

65. What makes women particularly vulnerable to sexual harassment while accessing public transport? (Select as many answers as appropriate)

- a. Illness
- b. Pregnancy
- c. Age
- d. Clothes
- e. A lot more men than women around
- f. Being alone (without a companion)
- g. Others:

66. Victims of sexual harassment are more likely to be... (Select as many answers as appropriate)

- a. Young girls
- b. Adolescent girls
- c. Young women
- d. Middle aged women
- e. Older women
- f. No specific age

67. Please rate the following modes of transport according to your perceived feelings of social security at various times of the day: (Please fill all the boxes)

Here, 1= Very
safe 2= Safe

3= Unsafe
4= Very unsafe

| | Morning (8 am to 12 pm) | Afternoon (12 pm to 4 pm) | Evening (4 pm to 8 pm) | Night (8 pm to 8 am) |
|--|----------------------------|------------------------------|---------------------------|-------------------------|
| Walking | | | | |
| Cycling | | | | |
| Motorized Two-Wheeler | | | | |
| Motorized Four-Wheeler | | | | |
| Public Transport (Bus/ Train/ Auto rickshaw/ Jeep) | | | | |
| Tractor | | | | |
| Hired taxi | | | | |
| Metro | | | | |

68. Would you prefer using 'women-only' auto rickshaw/buses over a public transport which runs for both men and women?

- a. Yes
- b. No

69. Would you prefer women drivers driving these 'women-only' modes?

- a. Yes
- b. No

70. Would you travel in a public transport which runs for both men and women with women drivers?

- a. Yes
- b. No

71. Are you in favour of free tickets for 'women-only' auto rickshaw/buses?

- a. Yes
- b. No

List of Publications and Papers Presented in Conference

Papers Published

- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), “Is the choice of less-polluting modes of transport for non-work purposes affected by socio-demographic factors? Evidence from India”, *Management of Environmental Quality*, Vol. 32 No. 3, pp. 488-505. [Emerald Publishing, indexed in Scopus (Elsevier), H-index =37, Q2 (0.65), ABDC- ‘C’] DOI:10.1108/MEQ-09-2020-0212
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), “Socioeconomic- and gender-based differentials in choice of sustainable mode of transport: Evidence from Jaipur, India”, *Millennial Asia: An International Journal of Asian Studies*. [Sage Publications, indexed in Scopus (Elsevier), Clarivate Analytics: Emerging Sources Citation Index (ESCI), H-index =4, Q3 (0.12)] <https://doi.org/10.1177/0976399621993432> (Published online)
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), "Gender differences in influence of socio-demographic characteristics on mode choice in India", *The Journal of Asian Finance, Economics, and Business*, Vol. 8 No.1, pp.531–542. [indexed in Scopus (Elsevier), Web of Science - Emerging Sources Citation Index (ESCI), H-index =3, Q3 (0.19)] DOI: 10.13106/jafeb.2021.vol8.no1.531
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), “Area, gender and regional disparities in commuting patterns within the districts of India’s most populous state”, *Indian Journal of Economics*, Vol. C No. 398, pp. 355-382. [Published by Department of Economics, University of Allahabad, ABDC rank ‘C’].
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), "Gender and class distinction in travel behavior: evidence from India", *Ecofeminism and Climate Change*, Vol. 2 No.1, pp.42-48. [Emerald Publishing, indexed in CrossRef, EBSCO Discovery Service, Google Scholar, Summons (ProQuest), WorldCat] DOI: 10.1108/EFCC-09-2020-0030

- Taru Saigal, Arun Kr. Vaish and NVM Rao (2020), "Intersection of gender with area and occupation in analysing travel behaviour: a case of Rajasthan, India", EPRA International Journal of Multidisciplinary Research (IJMR)-Peer Reviewed Journal, Vol. 6 No.9, pp.237–245. [SJIF Impact Factor: 7.032, ISI Value: 1.188] DOI: 10.36713/epra2013
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), "Role of safety in declining public transport use: Empirical evidence from India", Journal of Economic and Administrative Sciences. [Emerald Publishing, indexed in EBSCO, Web of Science, Emerging Sources Citation Index (ESCI), Australian Business Deans Council (ABDC) rank 'C'] *(published online)*

Working Papers

- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), "Gender gap in travel behaviour and public opinion on proposed policy measures: Evidence from India" *(under review)*
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), "Do socioeconomic factors determine mode choice? Evidence from rural and urban India" *(under review)*
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), "Understanding Indian travel behaviour: An analysis of 2011 Census data" *(under review)*

Papers Presented in Conferences

- Taru Saigal, Arun Kr. Vaish and NVM Rao (2020), "Area, gender and regional disparities in commuting patterns within the districts of India's most populous state", 56th Annual Conference of The Indian Econometric Society (TIES) organized by Madurai Kamraj University, Madurai, India during 7-9 January, 2020.
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), "Gender gap in travel behavior and public opinion on proposed policy measures: Evidence from India", Oxford Women's

Leadership and Education Research Symposium organized by Somerville College, Oxford University, Oxford, UK during 5-7 August, 2021.

- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), “Gender gap in travel behavior and public opinion on proposed policy measures: Evidence from India”, International Conference on Sustainable Development Goals and Gender Perspective organized by Department of Electrical Engineering, Sardar Vallabhbhai National Institute of Technology, Surat during 25- 26 October 2021.
- Taru Saigal, Arun Kr. Vaish and NVM Rao (2021), “Threat to safety as a reason for trade-off of public transport with private modes: Empirical evidence from the Pink City of India”, 2nd International Conclave on Globalizing Indian Thoughts 2021 organized by Indian Institute of Management Kozhikode, Kerala, India during 16-18 December 2021.

Brief Biography of Supervisor

Dr. Arun Kumar Vaish is Assistant Professor (Finance) at Birla Institute of Technology and Science – Pilani, Pilani Campus. He completed his B.E. (Hons.) in 1989 from BITS Pilani. Out of his total experience of 30 years, he has served more than 13 years in banking in various domains like credit, retail, branch banking, corresponding banking, capital market, and treasury. During his tenure as rural branch manager, he has managed to reduce non-performing asset of the branch drastically and his efforts towards micro-credit, especially government sponsored schemes, was recognized by administrative authorities. Since 2006, he is teaching at BITS Pilani. His research interest areas are micro-finance, credit risk, structure finance, financial engineering, and Asset Liability Management. He has delivered several guest lectures and conducted MDPs. He worked on consultancy project on financial inclusion and involved with Government of India on study of implementation of National Good Security Act 2013. He has published more than thirteen research papers and participated in various conferences. He is also working with Technology Business Incubator at BITS Pilani and started a company named FinQuant that supports incubation.

Brief Biography of Co-Supervisor

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He is a lifetime member of Indian Econometric Association, The Indian Econometric Society, Indian Society of Labor Economics and Association of Management Scholars International. He has numerous research articles published in national and international journals of repute and attended diverse national and international conferences. He has also been appointed as “Country Expert” by World Intellectual Property Organization, Japan and represented India on Multi-Country WIPO-UNU joint major research project on “Impact of Intellectual Property System on Economic Growth” and has addressed the UN University, Japan in 2007.

Brief Biography of Candidate

Taru Saigal is a research scholar at the Department of Economics and Finance, Birla Institute of Technology and Science, Pilani – Pilani Campus. She has published several research papers during her PhD and participated in national and international conferences. She qualified UGC-NET in Economics in 2017. During PhD, she also acted as teaching assistant for subjects such as Principles of Economics, Public Finance: Theory and Practice, Issues in Economic Development. She has completed her graduation from Daulat Ram College - Delhi University in 2014 and her masters from Lucknow University in 2016. Before joining PhD, she has worked as a research associate in an ICSSR sponsored research project entitled “An Economic Appraisal of Renewables versus Non-renewables: A Case of Rajasthan” under Dr. Krishna M at BITS Pilani, Pilani. She has also worked as an intern at various government and non-government organizations in India.



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