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MODE OF TRANSPORT AND COST CONSIDERATIONS: A STUDY OF URBAN AND RURAL COMMUTERS

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Abstract :

This study analyses the influence of travel cost on transport mode choice by commuters from urban and rural areas. The main objective is to understand how travel costs affect people's transport choices. This research used both primary and secondary data. Questionnaires and interviews were used to collect information that revealed travelers' preferences, income levels and availability of transport modes. Various statistical techniques were used to analyses the data. The results showed that commuters from urban areas prioritise time and convenience, while cost and availability are more important for commuters from rural areas. This difference shows how location affects transport choices. This research can help policymakers design more convenient and affordable transport systems to ensure the satisfaction of all commuters.

Keywords: *Transport Modes, Cost Considerations, Urban Commuters, Rural Commuters, Travel Preferences.*

Introduction:

Transportation has become an integral part of human life in the present times. People in both urban and rural areas travel daily for various purposes, such as education, employment, business, medical services, etc. During this journey, the mode of transport used and their cost are the major factors influencing the decision of the travellers. This study becomes extremely important, especially in a diverse socio-economic country like India, where there is a clear difference in the availability of resources and income level between urban and rural areas.

The aim of this research is to understand how travel cost plays a role in the selection of transport modes by urban and rural travellers. Factors such as travel time, convenience, cost, availability and income level influence travellers' preferences. While fast and convenient services are more expected in urban areas, travellers' preference in rural areas is focused on low cost and availability.

This study is based on both primary and secondary data, in which information has been collected through questionnaires and interviews. Along with this, the relationship between cost and transport facility has been analyzed with the help of various statistical techniques. The findings of this research can help policy makers to design transportation policies that are accessible, affordable, and satisfactory to all classes of travelers.

Review of Literature:

Gupta and Sharma (2018) analysed the impact of cost on the choice of transport modes in urban and rural areas. The study found that time and convenience are preferred in urban areas, while cost and availability play an important role in rural areas. This research is useful for policy making.

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Singh, A., & Verma, K. (2019). This research highlights the inconvenience faced by commuters due to limited availability of transport options in rural areas. The study suggested that there is a need for cost-effective and more frequent transport services in rural areas.

Kumar, S., & Patel, R. (2020). The research found that for urban commuters, the use of private modes increases when transport fares increase, while the use of public transport decreases.

Desai, M., & Mehta, R. (2021). This study analyzed the impact of improving rural transport infrastructure. The findings showed that better roads and affordable transport services increased rural commuters' satisfaction and travel frequency.

Chopra, L., & Nair, S. (2022). The research concluded that cost and convenience have a direct impact on the choice of transport modes. Convenience is the dominant factor for urban commuters, while cost is more important for rural commuters.

Objectives:

1. To understand how travel cost affects the transport choices of urban and rural commuters.
2. To understand how the preferences of urban and rural commuters differ in terms of transport modes.
3. To compare and evaluate the efficiency and cost of urban and rural transport systems.
4. To make recommendations to policy makers to make transport services cheaper, better and more efficient.

Hypotheses of the Study:

1. **Null Hypothesis (H_0):** Cost has no significant effect on the choice of transport modes by urban and rural commuters.

   Alternative Hypothesis (H_1): Cost has a significant effect on the choice of transport modes by urban and rural commuters.

2. **Null Hypothesis (H_0):** There is no significant difference in the choice of transport modes by urban and rural commuters.

   Alternative Hypothesis (H_2): There is a significant difference in the choice of transport modes by urban and rural commuters.

Importance of the Study:

This study helps in understanding the role of cost in the choice of mode of transport by urban and rural commuters. It shows on what basis people choose modes of travel in different areas. The findings of this research will help policymakers in making plans that are more economical, convenient, and accessible for commuters. Also, it can prove useful in improving the transport system and increasing passenger satisfaction.

Scope of the Study:

This study is limited to the transport choice and cost impact of commuters living in urban and rural areas. It analyses the availability, cost, convenience and preferences of commuters for different transport modes. This research focuses only on commuters who regularly use transport services.

Research Methodology:

This study examines factors influencing commuter preferences, focusing on vehicle comfort.

a) Research Type:

Descriptive and analytical.

b) Data Collection:

- **Primary Data:** Surveys and questionnaires.
- **Secondary Data:** Books, reports, and government publications.

c) Sampling:

- **Sample Size:** 600 respondents.
- **Method:** Convenience sampling.

d) Data Analysis:

- **Percentage Analysis:** Used to compare preferences based on Area of residence, cost/fare of transportation, and other factors.

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- **Cross-tabulation:** Identifies relationships between different categories and is used with the Chi-Square Test.
- **Chi-Square Test:** Determines the link between preference and demographic factors, analysed using SPSS.

e) Hypothesis Testing:

- Chi-Square Test for **Area of residence (Urban and Rural)** -based preferences.
- Chi-Square Test for **cost/fare of transportation**-based preferences.

f) Limitations:

- Small sample size.
- Focuses only on road transport.

Limitations of the Study:

- Focuses only on road transport.
- Uses convenience sampling for data collection.
- Limited to 600 respondents.
- Responses may vary by individual opinion.
- Excludes other transport modes like rail and metro.

DATA ANALYSIS AND INTERPRETATION:

Table No. 1 – Frequency table of Area of Residence		
Area of Residence	**Frequency**	**Percent**
Rural	178	29.7
Urban	422	70.3
Total	600	100.0
Source: Compiled from SPSS output		

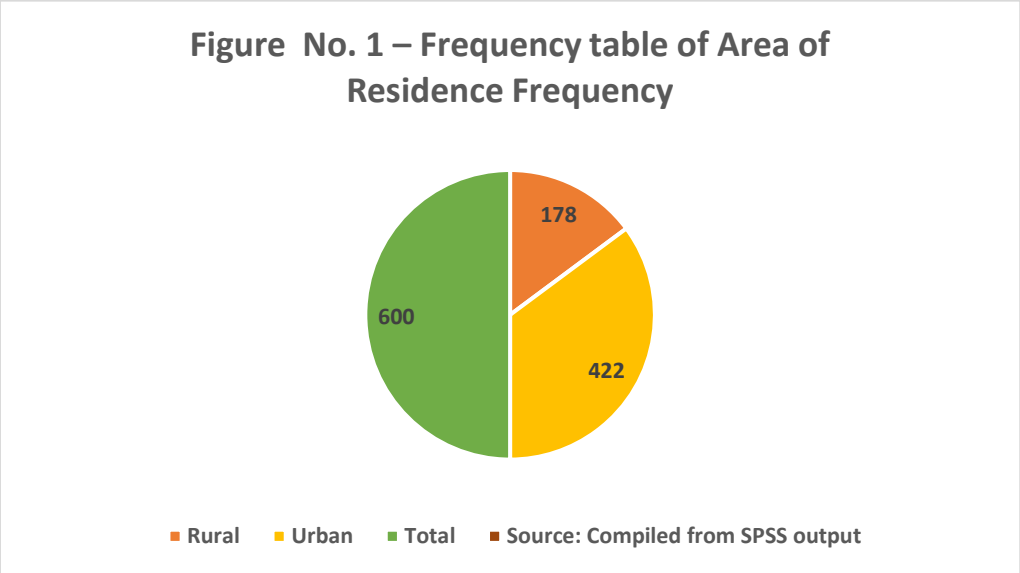

Table No. 1 displays the distribution of the 600 respondents according to their area of residence. The data indicates that a significant majority of respondents live in Urban areas, making up 70.3% of the sample (422 respondents). In contrast, the remaining 29.7% of respondents (178 individuals) are from Rural areas.

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CROSS-TABULATION OF COMMUTER'S PREFERENCE WITH DEMOGRAPHIC VARIABLES

Table No. 2 - Cross-tabulation of Commuter's Preferences in the form of Most Preferable mode of transportation with Area of Residence

Crosstab					
Particular			**Area of Residence**		**Total**
			Urban	**Rural**	
Most Preferable mode of transportation.	**KDMT bus services**	Count	234	93	327
		% of Total	39.0%	15.5%	54.5%
	Auto	Count	121	31	152
		% of Total	20.2%	5.2%	25.3%
	Taxi (Black & yellow)	Count	24	29	53
		% of Total	4.0%	4.8%	8.8%
	Other Modes	Count	43	25	68
		% of Total	7.2%	4.2%	11.3%
Total		Count	422	178	600
		% of Total	70.3%	29.7%	100.0%
Source: Compiled from SPSS Output					

The data shows that urban commuters (54.5%) prefer KDMT buses, reflecting the availability and affordability of public transport in cities. In contrast, rural commuters (15.5%) also use KDMT buses but in significantly lower numbers, likely due to limited routes. Auto-rickshaws (25.3%) are a preferred alternative, particularly in urban areas (20.2%), offering flexibility. Taxis (8.8%) are more balanced between urban (4.0%) and rural (4.8%) commuters. Other modes (11.3%) indicate private vehicle use. These insights suggest a need for better rural transportation infrastructure to improve connectivity and reduce reliance on private or informal transport.

Table No. 3 - Cross-tabulation of Commuter's Preferences in mode of transport on the basis of cost/fare of transportation with Area of Residence

Crosstab					
Particular			**Area of Residence**		**Total**
			Urban	**Rural**	
Which mode of transport do you prefer on the basis of the cost/fare of transportation?	**KDMT bus services**	Count	273	93	366
		% of Total	45.5%	15.5%	61.0%
	Auto	Count	89	25	114
		% of Total	14.8%	4.2%	19.0%
	Taxi (Black & yellow)	Count	20	32	52
		% of Total	3.3%	5.3%	8.7%
	Other Modes	Count	40	28	68
		% of Total	6.7%	4.7%	11.3%
Total		Count	422	178	600
		% of Total	70.3%	29.7%	100.0%
Source: Compiled from SPSS Output					

Cost is a major factor influencing transport choices. Urban commuters (45.5%) prefer KDMT buses, highlighting affordability. Rural commuters (15.5%) use them too but at lower rates, likely due to fewer bus services in rural areas. Auto-rickshaws (19.0%) are the second most popular option, with urban areas (14.8%) showing higher use than rural

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areas (4.2%), possibly due to higher population density. Taxis (8.7%) are more balanced, while other modes (11.3%) indicate reliance on private transport in areas with limited public transit. Expanding low-cost rural transport options could bridge the accessibility gap.

Table No. 4 - Result of Chi-Square Test

H_{01}: Cost has no significant effect on the choice of transport modes by urban and rural commuters.

Preference	Particular	Value	df	Asymp. Sig. (2-sided)
Most Preferable mode of transportation.	Pearson Chi-Square	24.080[a]	3	.000
	Likelihood Ratio	22.918	3	.000
	Linear-by-Linear Association	5.598	1	.018
	N of Valid Cases	600		
Which mode of transport do you prefer on the basis of cost/fare of transportation?	Pearson Chi-Square	36.082[a]	3	.000
	Likelihood Ratio	33.359	3	.000
	Linear-by-Linear Association	17.161	1	.000
	N of Valid Cases	600		

Table 4 shows the results of the Chi-square test conducted to test the relationship between commuters' preferences and their place of residence. The results show that there is a significant statistical relationship ($p < 0.05$) between place of residence and several factors such as preferred mode of transport, fare/cost, speed or travel time, convenience (route covered), group travel, environmental impact and GPS/real-time tracking.

On the other hand, no significant relationship was found for safety and security ($p = 0.148$) and technology use ($p = 0.407$), indicating that place of residence has no significant influence on these two factors.

These results highlight that place of residence of commuters influences their transport preferences especially in terms of cost, travel speed and accessibility.

Findings of Study:

1. 70.3% of commuters in urban areas prefer KDMT buses, while only 15.5% in rural areas.
2. Rural commuters face limited availability of public transport and depend on auto-rickshaws/private vehicles (25.3%).
3. Chi-square test: Residential area (urban/rural) has a direct relationship with transport options, cost, time and convenience ($p < 0.05$).
4. No significant effect of area on factors like safety ($p=0.148$) and technology ($p=0.407$).
5. Rural commuters' satisfaction mainly depends on affordable services and better infrastructure.

Conclusion:

This study shows that cost, availability and convenience are the major determinants in transport choices of urban and rural commuters. Wide access and affordable fares of public transport in urban areas make it the preferred choice, while in rural areas, limited infrastructure leads commuters to rely on auto-rickshaws or private vehicles. Policymakers should focus on expanding rural transport networks, subsidized services, and technology integration (such as GPS) to meet the needs of all commuters equitably.

General Suggestions

1. Expand the frequency and routes of public transport in rural areas.
2. Provide subsidies on bus/auto fares for low-income group commuters.
3. Encourage shared mobility systems (such as e-

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rickshaws) to enhance last-mile connectivity.

4. Add real-time tracking and safety features to traffic apps.
5. Reduce pollution by promoting eco-friendly vehicles (electric buses/rickshaws).
6. Regularly evaluate and update policies based on commuter feedback.

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