

Determinants of Mobile Service Provider Selection in Rural-Urban India: A Demographic Analysis

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ABSTRACT

This study investigates the factors influencing mobile service provider selection among 550 respondents in East Godavari District, Andhra Pradesh, India. Employing a comprehensive survey methodology, we examine ten service attributes and their variation across demographic segments including age, income, occupation, education, gender, and provider affiliation. The findings reveal that internet speed (90.9%), 4G/5G availability (85.7%), and recharge options (83.2%) are the most influential factors, while traditional considerations like affordable tariff plans (51.7%) and network coverage (57.2%) rank lower. Notably, income significantly differentiates priorities for internet speed ($F=85.404$, $p=0.000$), while occupation influences perceptions of call quality and promotional offers. Factor analysis extracted four dimensions: Core Service Fundamentals, Value-Added Data Appeal, Brand Perception, and Trust-Communication Reliability. Regression analysis identifies affordable tariff plans as the sole significant predictor of provider selection ($\beta=0.259$, $p=0.035$). The study provides actionable insights for telecom operators in emerging markets characterized by high multi-SIM usage (83.3%) and data-centric consumption patterns.

Keywords: Mobile Service Provider Selection, Telecommunications, Consumer Behavior, Demographic Segmentation, Factor Analysis, India.

INTRODUCTION

The Indian telecommunications sector has undergone a transformative evolution, emerging from a state-controlled monopoly to one of the world's most competitive markets. With over 1.17 billion subscribers and data consumption exceeding 50 GB per user monthly, India represents a critical frontier for telecom research (TRAI, 2024). The sector's trajectory has been fundamentally reshaped by the entry of Reliance Jio in 2016, which disrupted pricing structures and accelerated data adoption across urban and rural India.

In this hyper-competitive environment, understanding the determinants of consumer choice has become strategically imperative. While service quality perceptions (Parasuraman et al., 1988) and customer satisfaction (Anderson & Sullivan, 1993) have received extensive attention, the relative influence of different service attributes across demographic segments remains underexplored in the Indian context. This gap is particularly significant given India's demographic diversity, where age, income, occupation, and geographic location shape telecommunications needs and priorities.

East Godavari District in Andhra Pradesh provides a particularly instructive research context. With a population exceeding 5.5 million, the district encompasses both rural agrarian communities and urban centers, presenting a representative microcosm of Indian telecom consumption. The district's vulnerability to cyclones and flooding also heightens the importance of network reliability, making it an ideal setting for examining service quality expectations.

This study addresses two research questions: (1) What factors most significantly influence mobile service provider selection in East Godavari District? and (2) How do demographic characteristics moderate the

importance of these selection factors? By employing factor analysis and ANOVA techniques on a sample of 550 respondents, we contribute empirical evidence on consumer decision-making in one of the world's most dynamic telecom markets.

LITERATURE REVIEW

Theoretical Foundations of Consumer Choice

Consumer choice theory in telecommunications draws from multiple disciplinary traditions. Economic models (Lancaster, 1966) posit that consumers select products offering the optimal bundle of attributes relative to cost. Behavioral economics (Kahneman, 2003) emphasizes heuristics and cognitive biases that shape decision-making. The Theory of Reasoned Action (Fishbein & Ajzen, 1975) suggests that behavioral intentions are formed through attitudes and subjective norms, while the Technology Acceptance Model (Davis, 1989) highlights perceived usefulness and ease of use in technology adoption.

In telecommunications, these theoretical frameworks translate into an emphasis on network performance, price, brand reputation, and social influence as key determinants of provider choice (Gerpott et al., 2001; Kim et al., 2004). However, the relative importance of these factors has shifted dramatically with the transition from voice-centric to data-centric consumption patterns.

Factors Influencing Provider Selection

Empirical research has identified numerous determinants of mobile service provider selection. Network quality consistently emerges as a primary consideration (Bolton, 1998; Rust et al., 1999), encompassing coverage, call clarity, and data speed. The dramatic growth of mobile data consumption has elevated internet speed from a secondary to a primary selection criterion (Khatibi et al., 2018).

Price sensitivity varies considerably across market segments. While affordability is universally valued, the concept of "value for money" often outweighs absolute price considerations (Lai et al., 2009). Promotional offers and discounts influence initial adoption but have limited impact on long-term loyalty (Sharma, 2017).

Brand image and corporate reputation serve as heuristic cues that reduce search costs and signal quality (Aaker, 1996). In collectivist cultures, word-of-mouth recommendations from family and friends carry particular weight (Lee & Lee, 2014). Customer service responsiveness and complaint handling distinguish providers in competitive markets (Tax & Brown, 1998).

Demographic Segmentation in Telecom Research

Demographic variables moderate the importance of selection factors across multiple dimensions. Age influences technology adoption patterns and usage intensity (van Dijk, 2006). Younger users prioritize data speed and digital services, while older users emphasize voice quality and reliability (Kurnia & Pal, 2020). Income shapes price sensitivity and willingness to pay for premium services (Ida & Sakahira, 2015). Urban-rural differences manifest in network coverage expectations and distribution channel preferences (Kumar & Babu, 2019).

The Indian telecom market presents unique characteristics that challenge generalizable findings. High multi-SIM usage (over 70% of users), characterized by the use of multiple active SIM cards from different operators, creates competitive dynamics where providers compete not just for customers but for "primary SIM" status (Manjunath et al., 2017). The 2022 tariff increases by major operators have renewed focus on price-value trade-offs.

METHODOLOGY

Research Design and Sampling

This study employed a cross-sectional survey design targeting mobile phone users in East Godavari District, Andhra Pradesh. A structured questionnaire was administered to 550 respondents using a stratified random sampling approach, ensuring proportional representation across age, income, occupation, and geographic location (urban/rural). The sample size was determined based on Cochran's formula (1977), with a 95% confidence level and 5% margin of error.

Instrument Development

The survey instrument comprised three sections:

- Demographic Information:** Gender, age, education, occupation, income, residence area
- Provider Selection Factors:** Ten attributes rated on a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree)
- Usage Patterns:** Provider affiliation, years of use, connection type, internet usage, monthly expenditure

The ten selection factors—network coverage, internet speed, call quality, brand image, affordable tariff plans, customer care service, promotional offers, family/friends recommendations, recharge options availability, and 4G/5G services availability—were derived from established scales (Kim et al., 2004; Deng et al., 2010) and validated through pilot testing with 50 respondents.

Data Analysis

Data analysis employed SPSS version 26. Descriptive statistics characterized the sample distribution. Factor analysis (principal component extraction with Varimax rotation) identified underlying dimensions. ANOVA and independent t-tests examined demographic differences. Multiple regression analysis identified significant predictors of provider selection. Internal consistency reliability was assessed using Cronbach's alpha ($\alpha = 0.843$).

RESULTS

Sample Characteristics

Table 1: Demographic Profile of Respondents

Characteristic	Category	Frequency	Percentage
Gender	Male	356	64.7
	Female	194	35.3
Age	Below 20 years	86	15.6
	21-30 years	152	27.6
	31-40 years	131	23.8
	41-50 years	112	20.4
	Above 50 years	69	12.5
Residence	Rural	326	59.3
	Urban	224	40.7
Occupation	Student	91	16.5
	Government Employee	80	14.5
	Private Employee	103	18.7
	Business	155	28.2
	Others	121	22.0
Provider	Airtel	148	26.9
	Jio	236	42.9
	Vodafone Idea	88	16.0

	BSNL	78	14.2
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The sample was predominantly male (64.7%) and rural (59.3%), reflecting the district's demographic composition. The 21-40 age group (51.4%) constituted the majority. Business professionals (28.2%) were the largest occupational category. Jio (42.9%) led in market share, followed by Airtel (26.9%).

Factors Influencing Provider Selection

Table 2: Factor Influence Rankings

Factor	Mean	SD	Agree/Strongly Agree (%)
4G/5G Services Availability	4.39	0.94	85.7
Internet Speed	4.21	0.83	90.9
Recharge Options Availability	4.06	0.87	83.2
Promotional Offers	3.96	0.92	77.0
Brand Image	3.85	1.38	62.9
Family/Friends Recommendation	3.69	1.45	63.6
Customer Care Service	3.67	1.23	69.8
Call Quality	3.59	1.21	65.1
Network Coverage	3.35	1.41	57.2
Affordable Tariff Plans	3.21	1.43	51.7

Internet speed (90.9%) and 4G/5G availability (85.7%) emerged as overwhelmingly dominant factors, reflecting the data-centric consumption patterns of modern mobile users. Nearly one-third of respondents reported OTT/streaming as their most frequently used service, underscoring the importance of high-speed connectivity. Contrary to expectations, affordable tariff plans (51.7%) and network coverage (57.2%) ranked lowest, suggesting that these are perceived as basic expectations rather than differentiators.

Demographic Variations in Selection Factors

ANOVA results revealed significant demographic variations across selection factors:

- **Age** significantly influenced Internet Speed ($F=2.845$, $p=0.024$) and Recharge Options Availability ($F=3.648$, $p=0.006$). Younger respondents (21-30 years) prioritized internet speed more than older age groups, while older respondents showed greater concern for recharge convenience.
- **Occupation** emerged as the strongest differentiator, significantly influencing Internet Speed ($F=6.355$, $p=0.000$), Call Quality ($F=4.506$, $p=0.001$), Promotional Offers ($F=6.592$, $p=0.000$), and 4G/5G Availability ($F=4.488$, $p=0.001$). Business professionals and private employees prioritized internet speed and 4G/5G availability more than students and government employees.
- **Income** showed the most pronounced effect on Internet Speed ($F=85.404$, $p=0.000$), with higher-income groups (above ₹75,000) placing significantly greater importance on data performance. Income also influenced Recharge Options ($F=2.075$, $p=0.038$) and 4G/5G Availability ($F=2.755$, $p=0.027$).
- **Gender and Area of Residence** did not significantly differentiate any selection factors (all $p > 0.05$), suggesting that priorities are remarkably consistent across these demographic dimensions.
- **Provider Affiliation** significantly influenced perceptions of Network Coverage ($F=5.108$, $p=0.002$), Affordable Tariff Plans ($F=5.446$, $p=0.001$), and Customer Care Service ($F=5.099$, $p=0.002$), indicating that actual service experiences shape customer priorities differently across operators.

Table 3: Significant Demographic Differences

Factor	Demographic	F-value	Significance
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Internet Speed	Income	85.404	0.000***
Internet Speed	Occupation	6.355	0.000***
Internet Speed	Age	2.845	0.024**
Call Quality	Occupation	4.506	0.001***
4G/5G Availability	Occupation	4.488	0.001***
Promotional Offers	Occupation	6.592	0.000***
Recharge Options	Age	3.648	0.006**

*** $p < 0.01$, * $p < 0.05$

Factor Analysis of Selection Attributes

Principal Component Analysis with Varimax rotation extracted four components explaining 65.69% of total variance (KMO=0.720, Bartlett's $\chi^2=1998.738$, $p=0.000$).

Component 1: Core Service Fundamentals (27.55% variance)

- Affordable Tariff Plans (loading=0.973)
- Customer Care Service (loading=0.950)
- Network Coverage (loading=-0.949)

Component 2: Value-Added Data Appeal (16.51% variance)

- Recharge Options Availability (loading=0.779)
- Internet Speed (loading=0.671)
- Promotional Offers (loading=0.650)

Component 3: Brand Perception (10.84% variance)

- Brand Image (loading=0.876)

Component 4: Trust-Communication Reliability (10.78% variance)

- Family/Friends Recommendation (loading=0.703)
- Call Quality (loading=0.664)

The factor structure reveals that provider selection is driven by a combination of essential operational attributes, data-centric value propositions, brand reputation, and social trust mechanisms.

Regression Analysis

Multiple regression analysis examined the combined influence of selection factors on provider choice. The model was statistically significant ($F=1.847$, $p=0.050$) but explained only 3.3% of variance ($R^2=0.033$). Among individual predictors, **Affordable Tariff Plans** emerged as the only significant predictor ($\beta=0.259$, $t=2.109$, $p=0.035$).

Table 4: Regression Coefficients

Predictor	B	β	t	Significance
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Affordable Tariff Plans	0.178	0.259	2.109	0.035**
Brand Image	0.054	0.075	1.748	0.081
Customer Care Service	-0.089	-0.112	-1.126	0.261
Internet Speed	0.050	0.042	0.920	0.358
4G/5G Availability	-0.072	-0.069	-1.587	0.113

* $p < 0.05$

The limited explanatory power suggests that provider selection is influenced by factors beyond the ten attributes examined, including switching costs, habit, and availability-specific factors. The significance of tariff affordability indicates that price remains a foundational consideration, even in data-centric markets.

DISCUSSION

The Data-Centric Paradigm Shift

The overwhelming dominance of internet speed and 4G/5G availability as selection factors confirms the fundamental transformation of the Indian telecom market. This finding aligns with TRAI data showing that monthly data consumption per user has increased from 1.5 GB in 2016 to over 20 GB in 2024. The high prevalence of OTT streaming (29.1%) as the most frequently used service reinforces the criticality of data performance. For telecom operators, this suggests that network investment and spectrum acquisition should prioritize data capacity and speed over voice quality, which now ranks as a secondary consideration.

The Paradox of Price Perception

The relatively low ranking of affordable tariff plans (51.7% agreement) presents an intriguing paradox. While price sensitivity remains central to Indian telecom markets—evidenced by the market disruption caused by Jio's aggressive pricing—consumers may now view affordability as a baseline expectation rather than a differentiator. The finding aligns with the "value for money" concept (Lai et al., 2009), where perceived value outweighs absolute price considerations. The 2022 tariff increases, which raised prices by 20-25% across major operators, may have recalibrated consumer expectations, making them more focused on what they receive for their expenditure.

Demographic Segmentation Insights

The significant variations across demographic segments offer nuanced insights for targeted marketing:

- **Income-based differentiation** was the most pronounced, with higher-income users placing substantially greater importance on internet speed. This suggests that premium data plans targeting high-income segments should emphasize speed guarantees, unlimited data, and priority customer support.
- **Age-based patterns** indicate that younger users (21-30 years) prioritize internet speed and promotional offers, while older users show greater concern for recharge convenience and call quality. These findings suggest demographic-specific marketing messages and product configurations.
- **Occupational variations** reveal that business professionals and private employees value network performance and 4G/5G availability more than students and government employees. This may reflect the professional dependence on reliable connectivity for business operations.
- **Notably, gender and urban-rural residence showed no significant differences** across any selection factors. This suggests that telecom provider selection priorities are remarkably consistent across these demographic dimensions, simplifying marketing strategy design.

Multi-SIM Behavior as Competitive Context

The finding that 83.3% of respondents use multiple active SIM cards from different operators reveals the competitive intensity of the Indian telecom market. This behavior enables consumers to optimize across providers, using one SIM for data and another for voice, or one for primary use and another for backup coverage. For providers, this means they are competing for "primary SIM" status—the SIM that customers use most frequently. The high multi-SIM usage increases switching likelihood and reduces provider loyalty (Ganesh et al., 2000).

The Limited Role of Social Influence

Family and friends' recommendations (63.6% agreement) showed moderate influence but ranked lower than technology-driven factors. The 42.0% who "strongly agree" that recommendations influence them suggests that social influence remains important, particularly in collectivist Indian culture (Hofstede, 1984). However, the 15.3% who "strongly disagree" indicates that independent decision-making is increasingly prevalent, particularly among younger, more digitally-savvy users.

CONCLUSION AND IMPLICATIONS

Conclusions

This study examined the determinants of mobile service provider selection in East Godavari District, revealing a clear hierarchy of consumer priorities dominated by data-centric factors. Internet speed and 4G/5G availability have become the primary drivers of provider choice, while traditional considerations like network coverage and tariff affordability have assumed secondary status. Demographic segmentation reveals significant variations, particularly across income and occupation, while gender and residence show minimal differentiation.

The factor analysis extracted four underlying dimensions of selection behavior, validating that provider choice is a multidimensional decision process. The limited explanatory power of the regression model suggests that provider selection is influenced by factors beyond the attributes examined, including switching costs, customer inertia, and brand relationships developed over time.

Implications for Telecom Operators

- **Strategic Priority on Data Performance:** With 90.9% of users influenced by internet speed and 85.7% by 4G/5G availability, operators must prioritize network investment in data capacity and coverage. This is particularly critical in rural areas (59.3% of respondents) where infrastructure gaps may exist.
- **Value Proposition over Price Competition:** The relatively low importance of tariff affordability suggests that competing on price alone is insufficient. Operators should emphasize value-for-money propositions that highlight data allowances, speed tiers, and bundled services.
- **Demographic-Specific Targeting:** The significant variations across income, occupation, and age indicate that operators should develop segmented marketing strategies. Premium plans for business users should emphasize speed and reliability, while youth-oriented plans should highlight data allowances and entertainment benefits.
- **Customer Service as Differentiator:** Despite the high importance of technology factors, customer care service (69.8% agreement) and call quality (65.1%) remain significant considerations. Providers achieving excellence in these dimensions can differentiate themselves, particularly given the 51.0% dissatisfaction with current tariff plan pricing.
- **Leveraging Multi-SIM Dynamics:** The widespread multi-SIM usage (83.3%) means operators must compete for "primary SIM" status. Strategies to achieve this include superior data speed, exclusive content partnerships, and seamless customer experience.

Implications for Policy and Regulation

The findings suggest that regulatory focus should extend beyond tariff regulation to network quality standards. The emphasis on data performance indicates that consumers prioritize speed and coverage, suggesting the need for independent quality audits and public disclosure of network performance metrics.

Limitations and Future Research

This study has several limitations that future research should address. The cross-sectional design captures a single snapshot, whereas provider selection is a dynamic process influenced by experience and changing needs. The focus on East Godavari District limits generalizability to other Indian regions with different demographics and competitive dynamics. Future research should employ longitudinal designs to examine how selection priorities evolve with market changes and technological advancements. Additionally, qualitative methods could explore the decision-making process in greater depth, revealing how consumers trade off competing attributes.

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