Original Researcher Article

Are Services Consumed Differently in India?

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ABSTRACT

The Indian economy, distinguished by its rapid growth, has undergone a significant structural transformation, marked by the increasing dominance of the service sector. This sector now constitutes the largest share of the nation's Gross Domestic Product, making the study of service consumption imperative for understanding contemporary economic dynamics. This paper examines the patterns of household consumption expenditure on a spectrum of broader classified services in national and state accounts. The analysis specifically examines how disparities in income levels and other socioeconomic factors affect consumption patterns across different Indian states. Furthermore, the study identifies key determinants of service consumption. The objective is to provide an understanding of the factors underpinning service sector demand within the evolving structure of the Indian economy.

Keywords: Service Sector, Household Consumption Expenditure, Income Disparities, Socioeconomic Factors, Indian Economy.

INTRODUCTION:

The Service Sector has been India's fastest-growing sector in recent years and is the second-largest employer after agriculture. All industrialized economies in the 21st century have evolved into service economies, where the largest percentage of the workforce is employed in service industries. The sector includes banking, insurance, telecommunication, and transportation. Goods are tangible, while services are intangible and fulfil various needs, including healthcare, education, finance, transportation, hospitality, and entertainment. Analysing demand for services is useful for understanding consumption patterns and policy making, helping to assess price and income elasticity. Some services are responsive to price, while others are not. This study analyses the consumption pattern for various Transport, services. including Storage Communication, Railways, Road, Water, Air Transport, incidental transport services, Storage, Communication, Trade, Hotels and Restaurants, Banking and Insurance, Public Administration, and Other Services. The study evaluates whether lag expenditure affects current expenditure and whether the service is price elastic, income elastic, or both.

REVIEW OF LITERATURE

The service sector has been an important contributor to India's GDP in recent years. As per Hill (1999), Services are intangible, and there exists a direct relationship between producers and consumers, because it is difficult to exist without interaction. Vyavahare and Deshmukh (2021) highlighted that between 1972-73 and 2011-12, food expenditure had declined, and that of non-food had increased. In the rural area, the decline is from 72.83

percent to 52.76 percent, whereas in the urban area, it is from 64.45 percent to 42.46 percent. It further highlighted that spending on non-food items particularly includes medical care, transport, and communication. As per the study, changes reflect broader shifts in lifestyle, modernization, and expanded employment opportunities. Nayyar (2012) pointed out that household consumption patterns in India have undergone a significant transformation. Study showed that expenditure on services increased from 12.5 percent in 1950-51 to 44.3 percent in 2008-09.

As per Mukherjee (2013), service consumption is largely driven by increased demand for services such as education, private healthcare, personal care, and hospitality, particularly among the middle class. The middle class is projected to constitute 41 percent of the population by 2025. Nayyar (2012) took into account Engel curve analysis for services consumption and found that the convex shape of the Engel curve for aggregate services indicates that as households' income or total expenditure increases, the budget allocated to services also rises, which categorizes services as a luxury good across all income levels. As per the study, patterns are consistent in both urban and rural areas and have persisted across multiple time periods, including 1993-94 to 2004-05. It further indicated that the income elasticity of demand for services in India exceeds unity (rising income led to a more than proportional increase in demand for services).

Findings from the UN International Comparison Project (ICP) show that the share of services in GDP remains relatively stable as GDP per capita rises when measured

using real exchange rates. Falvey and Gemmell (1996) highlighted that the income elasticity of services may not differ from unity, and that the price response is either negligible or highly inelastic.

NSSO's Household Consumption Expenditure statewise survey (2022-23) indicated variations in service consumption. For example, urban households in Goa spend significantly on milk and milk products (Rs. 449.93 per capita), while those in Gujarat and Haryana spend even more (Rs. 669.78 and Rs. 1,040.79 per capita, respectively) (Consumption Expenditure Survey, 2022-23). The consumption of services such as transport varies, with rural households spending differently across quintile classes of MPCE, indicating disparities in access and affordability (NSSO, 2014-15).

Mukherjee (2013) indicated that an increase in literacy rates and a young demographic profile, with 54 percent of the population below 25 years, further boost demand for services, particularly in higher educational attainment and economically better-off states.

Kothe (2019) estimated price and income elasticities of demand for services at the economy level for India and also for sub-services as classified in national GDP statistics. He found that services are becoming price inelastic and income is positively impacting the demand for services in India.

As per Falvey and Gemmell (1996), urbanization is positively associated with higher demand for recreation services. In addition to that, the age dependency ratio affects the consumption of health and education services, with higher usage observed among the young and elderly population.

Overall, studies consistently find that service consumption in India is increasing, driven by rising incomes, urbanization, and changing consumer preferences. The shift is especially evident in higher spending on education, healthcare, personal care, and hospitality among the growing middle class. Patterns of service demand differ across states and demographic groups, reflecting broader economic changes as India moves towards a service-led economy.

This discussion underscores the rapid growth of India's service sector, highlighting a shift in consumption toward non-food items after economic reforms. Key drivers include rising income, urbanisation, and evolving consumer preferences. Notably, there are significant variations in service consumption across states, shaped by diverse economic, social, and demographic factors. These findings emphasize the complexity and regional diversity of India's service sector growth.

The present study aims to analyse consumption expenditure patterns for various services across India, focusing on how income level influences such expenditure. It identifies the factors affecting service consumption patterns and determines demand for

services across different states. Addressing these components provides valuable insights into the intricacies of service consumption in India.

METHODOLOGY

The study focuses on estimating demand functions for various service sectors across different states of India. For the analysis, the data for the sectoral services SGVA and the State Gross Domestic Product of states of India 2011-12 at constant and current prices during the post-liberalization period, i.e., from 1980-81 to 2021-22, are used in this study. Data for the study are collected from the Economic and Political Weekly Research Foundation (EPWRF).

Primarily, we decided to use Panel Data analysis. As a consequence of serial correlation, we decided to use Dynamic Panel Data (DPD) and Arellano-Bond Estimation (1991) of Generalized Method of Moments (GMM) for estimating demand functions for various service sectors across different states of India.

The production and consumption of services are typically immediate, with services like those provided by churchmen, lawyers, physicians, and performers being necessary but not resulting in a tangible product that can be exchanged for an equal amount of service, as their work vanishes instantly upon creation (Smith, 1776). Services meet personal and collective needs without being physical items, known for their simultaneous consumption and production. Their focus is on human interaction, unlike the production of material goods, which relies on natural resources (Hill, 1942). In the case of services, there exists a relationship between producers and consumers, as services are always being provided to another economic entity. The concept of one entity acting for the benefit of another is fundamental to the idea of a service (Hill, 1942).

Due to their intangible nature, services cannot be extensively stored, resulting in production and consumption typically happening simultaneously. While some services can be physically stored, most cannot. Every unit of service produced is assumed to be consumed by individuals or institutions; hence, the services' GDP represents the consumption of services (Kothe, 2019)

Falvey and Gemmell (1996) and Summers (1985) suggested the estimation of the demand function for services, and Kothe (2019), with modifications, estimated the elasticity of demand for services in India. It could be concluded that the output of an economy is equivalent to the expenditure, as represented by equation 1

1)
$$\ln Y_{ijt} = \beta_1 ln X_{1ijt} + \beta_2 ln X_{2ijt} + \mu_{ijt}$$

By considering Y as expenditure, X_1 as income, X_2 as price, μ as error term, i as sector, j as state and t as the period. β_1 and β_2 are the coefficients that show the impact of a unit change in explanatory variables on the dependent variables.

$$e_{p=} eta_1 = rac{rac{\Delta Y}{Y}}{rac{\Delta X_1}{X_1}}$$
 $e_{y=} eta_2 = rac{rac{\Delta Y}{Y}}{rac{\Delta GDP}{GDP}}$

 β_1 represents the impact of a unit increase in price on expenditure. In other words, β_1 shows Price represents, whereas, β_2 represents the impact of a unit increase in income on expenditure. In other words, β_2 represents Income Elasticity. GSDP represents income, and the deflator is used as the proxy for price.

$$\dot{P} = \frac{Pn}{Pr} - 1$$

Whereas, \dot{P} is the rate of inflation (that is, the percentage change in prices)

Pn is the nominal (current) price. Pr is the real (constant) price.

The equation calculates the Inflation rate by comparing the nominal price and real price and then subtracting 1. This comparison enables us to evaluate the percentage change in prices after accounting for the inflation rate. If the inflation rate (\dot{P}) is positive, then it indicates that prices have increased respectively to the base year. Conversely, negative inflation indicates that prices have decreased, while a zero-inflation rate suggests that there are no changes in prices over a specified period.

For the purpose present study, equation 1 is modified as follows,

2)
$$\ln Y_{ijt} = \alpha + \beta_0 ln Y_{i-1jt} + \beta_1 ln X_{1ijt} + \beta_2 ln X_{2ijt} + \mu_{ijt}$$

Where, Y_{ijt} represents the expenditure of the ith sector of the jth state at time t.

 Y_{i-1jt} represent the lag of expenditure of the ith sector of the jth state at time t.

 X_{1ijt} represent the income of the ith sector of the jth state

 X_{2ijt} represent the price of the ith sector of the jth state at time t.

EMPIRICAL EVIDENCE

Table 1:

Dependent Variables	Independent Variables	Coefficients	Z-statistics	P - Value
Transport Storage and Communication	ln_Lag of Transport Storage and Communication	0.3425333***	9.3800	0.0000
	In_Deflator of Transport and Communication	0.0022	0.4400	0.6620
	ln_Total GSVA	0.5579537***	15.3600	0.0000
Railways	ln_Lag of Railways	0.5561267***	10.0000	0.0000
	ln_Deflator of Railways	-0.0096	-0.2400	0.8100
	ln_Total GSVA	0.3136337**	2.1000	0.0360
Transport by other means	ln_Lag of Transport by other means	0.22873428***	5.1800	0.0000
	In_Deflator of Transport by other means	-0.1736	-1.5600	0.1190
	ln_Total GSVA	0.6561806***	13.6700	0.0000
Road Transport	ln_Lag of Road Transport	-0.1051**	-1.9800	0.0480
	ln_Deflator of Road Transport	0.0153	0.9000	0.3660
	ln_Total GSVA	0.8268***	14.5500	0.0000
Water Transport	ln_Lag of Water Transport	0.3643***	4.3600	0.0000
	ln_Deflator of Water Transport	-0.0691	-0.9800	0.3280
	ln_Total GSVA	1.0287***	5.4300	0.0000
Air Transport	ln_Lag of Air Transport	0.1126*	1.8600	0.0640
	In_Deflator of Air Transport	-0.3076***	-3.1100	0.0020
	ln_Total GSVA	1.4247***	5.5000	0.0000
Services to incidental transport	ln_Lag of Services to incidentalTransport	0.8060***	12.7500	0.0000
	In_Deflator of Services to incidental Transport	12811.6000	0.6000	0.5500
	ln_Total GSVA	345693.5000***	3.4400	0.0010
Storage	ln_Lag of Storage	0.3348***	5.4700	0.0000
	ln_Deflator of Storage	0.0725	1.1600	0.2470

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	ln_Total GSVA	0.7679***	0.1803	0.0000
Communication	ln_Lag of Communication	0.7515***	40.0600	0.0000
	In_Deflator of Communication	0.0215***	5.8200	0.0000
	ln_Total GSVA	0.2421***	10.5600	0.0000
Trade, Hotels and Restaurants	ln_Lag of Trade, hotels and restaurants	0.2658***	6.9700	0.0000
	In_Deflator of Trade, hotels and restaurants	0.0116	1.2500	0.2120
	ln_Total GSVA	0.6880***	14.0500	0.0000
Trade and repair services	In_Lag of Trade and repair services	0.1343***	3.1800	0.0010
	In_Deflator of Trade and repair services	0.0329***	2.5100	0.0120
	ln_Total GSVA	0.8305***	14.3600	0.0000
Banking and Insurance	In_Lag of Banking and Insurance	0.5724***	10.7700	0.0000
	In_Deflator of Banking and Insurance	0.0460***	3.2300	0.0010
	ln_Total GSVA	0.2344***	3.2600	0.0010
Rent Estate, Ownership of Dwellings and	ln_Lag of Rent Estate, Ownership of Dwellings and Business Services	0.8082***	41.5400	0.0000
Business Services	In_Deflator of Rent Estate, Ownership of Dwellings and Business Services	-0.0009	-0.1800	0.8570
	ln_Total GSVA	0.1071***	4.8700	0.0000
Public Administration	ln_Lag of Public Administration	0.4779***	11.5500	0.0000
	In_Deflator of Public Administration	0.0578***	4.0900	0.0000
	ln_Total GSVA	0.4214***	8.0500	0.0000
Other Services	ln_Lag of Other Services	0.5003***	14.9100	0.0000
	In_Deflator of Other services	0.0452***	3.4500	0.0010
	ln_Total GSVA	0.4761***	10.4100	0.0000
Hotels and Restaurants	ln_Lag of Hotels and Restaurants	0.0389	0.6800	0.4960
	In_Deflator of Hotels and Restaurants	-0.1026**	-1.8900	0.0590
	ln_Total GSVA	0.6470***	5.1600	0.0000
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(Note: * denotes 10% significance, ** denotes 5% significance, *** denotes 1% significance.)

For all the sectors under consideration, sectoral expenditure is treated as the dependent variable, while the independent variables include the sectoral lag expenditure, prices (using the deflator as a proxy), and income (measured by GSVA). All the variables are transferred in logarithmic form.

For the Transport, Storage, and Communication sector, the lag ($\beta_0 = 0.3425$) and income ($\beta_1 = 0.5579$) are significant, indicating that past-year expenditure affects current-year expenditure and income affects expenditure. Deflator, on the other hand, is insignificant, suggesting transport and storage communication is price inelastic, but income elastic. For Railways, the sectoral lag expenditure ($\beta_0 = 0.556$) is significant at 1 percent, and income ($\beta_1 = 0.3136$) is statistically significant at

5 percent significance level, suggesting a strong lag impact, and high-income elasticity. Deflator is insignificant. For Transport by Other Means, the results indicate that the lagged transport value ($\beta_0 = 0.2287$) has a positive and highly statistically significant impact i.e. significance at 1 percent. Similarly, Income (β_1 = 0.6562) exhibits a highly significant (significance at 1 percent) positive effect. On the other hand, the deflator is insignificant, implying price inelasticity. For Road Transport, the lagged value is negative and statistically significant ($\beta_0 = -0.1051$), indicating that past year expenditure inversely affects current road transport activity. The deflator is statistically insignificant, emphasizing price inelasticity. The income exhibits a strong positive influence ($\beta_1 = 0.8268$), highlighting income as the most significant factor driving road

transport expenditure. For Water Transport, lag (β_0 = 0.3643) and income ($\beta_1 = 1.0287$) are both positive and highly significant, indicating that past year expenditure has a strong and positive influence on current water transport expenditure, and the sector is income elastic. The deflator is insignificant, with a negative coefficient implies that price changes in this sector do not have a statistically significant effect on its economic activity, suggesting that the water transport sector may be relatively inelastic due to price changes or other factors that dominate its performance. For Air Transport, the Lag ($\beta_0 = 0.1126$) is positive but statistically significant at 10%, Deflator (β_2 = -0.3076) is significant, indicating that air transport is price elastic. Income has a coefficient of 1.4247, indicating a strong and significant impact. The significant lag of Services to incidental transport (β_0 = 0.806), suggesting that past expenditure continues to affect current expenditure. The deflator is insignificant. Additionally, income is highly significant (β_1 = 345,693.5), indicating income is positively related to expenditure. Overall findings suggest that past year expenditure and income play important roles in shaping the transport sector. Transport is highly income elastic but price inelastic except for air travel.

In the case of Storage, the lag is significant with a coefficient of 0.3348, deflator is insignificant. Total GSVA/ income is significant with a coefficient of 0.7679, suggesting income affects expenditure.

For Communication lag (β_0 = 0.7515), deflator (β_2 = 0.0215) and GSVA (β_1 = 0.2421) all are positive and statistically significant, indicating past expenditure affects current expenditure. In addition to that, expenditure associated with the communication sector is price as well as income elastic.

Lag expenditure (β_0 = 0.2658), and Income (β_1 = 0.6880) of Trade, hotels, and restaurants are statistically significant, whereas the deflator is statistically insignificant. This implies that trade, hospitality, and restaurants play a crucial role in driving economic growth by supporting both consumer spending and service sector expansion.

For Sectors such as Trade & Repair Services, Banking & Insurance, Public Administration, and Other Services lag, income and deflator are positive and statistically significant, indicating past expenditure affects current expenditure, and they are price and income elastic sectors.

For Real Estate, Ownership of Dwellings, & Business Services lag and income are statistically significant, whereas deflator is insignificant.

For Hotels & Restaurants, lag is insignificant, whereas income and deflator are significant.

The entire analysis reveals that all sectors are income elastic. For all the sectors, past expenditure affects current expenditure except Hotels and Restaurants,

where lag is insignificant. Air transport, trade and repair services, public administration, other services, hotels and restaurants, and communication are price elastic, whereas sectors such as railways, road transport, water transport, and storage are price inelastic, with demand remaining stable despite price fluctuations.

CONCLUSION

The present study highlights the significant growth of the services sector relative to other sectors of the Indian economy. It significantly contributes over 50 percent to the country's GDP. It provides demand functions for various service sectors. The results showed distinct patterns of service consumption in India and how these patterns vary across different states. The Data used in this study provides valuable insights into the performance of states. These findings have important implications for analysing service consumption patterns within a state by examining the distribution of Gross State Value Added (GSVA) across different income groups and service sectors. The present study used the Dynamic Panel Data and Arellano-Bond Estimation (1991) of the Generalized Method of Moments (GMM) for estimating demand functions for various service sectors across different states of India.

The limitation of the study is due to the unavailability of the current year's data, which has not been used for analysis. Future studies could address these limitations by incorporating data from both pre- and post-COVID periods. Analysing data from these periods would allow for a comprehensive examination of the Indian economy's performance before and after the shock of the COVID-19 pandemic. Furthermore, state-wise analysis of various services can provide variability of service demand across different states in India. Such an analysis will help in policy-making for the respective state.

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