

## CONSUMPTION NATURE OF INDIAN INFORMAL WORKERS: ENGEL'S LAW REVISITED



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### ABSTRACT

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The level of informal employment in the Indian labor market shows the importance of investigating the nature of consumption among informal workers and determining the budget share among them. The Working-Leser model is used to identify the necessary and luxury goods among Indian informal workers. The budget share of food and non-food items among them will help us to validate Engel's law. Informal workers are divided into three categories: self-employed workers, employees in the informal sector, and informal employees in the formal sector. Using the 68th round of the National Sample Survey data on Indian Employment and Unemployment for 2011–2012, we find food items, addictive items (e.g., alcohol and tobacco products), entertainment items, fuel, lights, and other non-food items are necessary, while health, education, jewellery and personal transport are luxury items for all types of informal workers in India. Engel's law is therefore validated among the informal workers. The policy recommendation is that the government needs to spend more on health and education for informal workers. Spending more on these would not only improve the skills and efficiency of workers but also reduce their vulnerability.

**Contribution/Originality:** In a country such as India where most workers are employed in the informal sector, it is important to investigate the pattern of consumers' choices. To fill the gap in the literature, this study identifies the necessary and luxurious choices of goods of the majority of the Indian consumers, which can help producers to make proper business decisions for the future.

## 1. INTRODUCTION

The theory and the determinants of consumer behaviour have been an area of interest among various researchers and economists. It is well known that consumer behaviour and consumer wealth are highly interrelated. According to Stavkova (2006), the determining factors of purchase decisions are consumers' needs and the quality of the product. According to Say's law, supply creates its own demand. Thus, firms must introduce a variety of products to the market to generate consumer demand (Prokeinova, Dobes, Mura, & Buleca, 2017). Moreover, preferences, resources, individual behaviour of consumers as well as social institutions are important determinants of consumer behaviour.

Change in consumer behaviour due to variations in consumers' income is narrated by Engel curves (Engel, 1857). The variations in income, in turn, are reflected in the values of income elasticity of demand for different types of commodities and services. Thus, the shapes of Engel curves vary a lot for different types of consumer demand (Lades, 2013; Lewbel, 2008). This paper attempts to verify Engel's law among different types of informal workers in India.

There has been a huge reduction in the average calorie intake among rural populations during the years of economic reform, while a lesser reduction has occurred in urban areas, even at the period of accelerated real consumption expenditure (Basu & Basole, 2012; Deaton & Dreze, 2009). In a country such as India with a high rate of malnutrition, the deterioration in the intake of calories is concerning. Moreover, the performance of the Indian economy in anthropometric measures<sup>1</sup> has been very poor and worse than most of the countries in the world, including various impoverished African countries (Mehta & Venkatraman, 2000). Furthermore, it is also found in the literature that the per capita calorie consumption is lower than the official estimates of the prescribed poverty line calorie consumption in rural areas as well as current standards as set out by the Indian Council of Medical Research (ICMR). Recent literature has further pointed out that the decline in calorie intake goes hand in hand with the increase in under nutrition coupled with a reduction in headcount ratio during the post-reform period (Patnaik, 2007; Ray, 2007; Smith, 2013). However, many other studies have also pointed out that there has been an immense growth in the prevalence of hardship and scarcity among informal workers in India during the years of globalization, privatization and liberalization (Heintz & Vanek, 2007; Papola, 2008). Roy and Kundu (2020) found that more than 20% of informal workers are living below the poverty line. The obvious result of economic liberalization is flexibility in the Indian labor market in the form of informalization of employment (Unni & Rani, 2010). In the presence of increased international competition and enhanced privatization, there has been an attempt to reduce wage costs by denying trade union rights to employees. A significant proportion of regular workers also lost their jobs and were largely replaced by casual workers during this time (Das, Dasgupta, & Biswas, 2009). Thus, the proportion of informal employment, which was already immense in India during the pre-reform period, increased significantly during the post-liberalized era. Since the incidence of poverty has grown during the post-reform period, it is not only essential to investigate the calorie intake of the majority of workers in India (i.e., informal workers), but also their choice of consumer goods.

Since the discrepancy among informal workers is evident (Sahoo & Neog, 2017; Unni, 2005), we further classify informal workers into three major types: (i) self-employed workers (SE), ii) employees of the informal sector (EIS), and (iii) informal employees of the formal sector (IEFS). We intend to scrutinize the extent of the discrepancy in the selection of consumer goods among the three groups of informal workers mentioned above.

This paper has been structured in the following manner: Section 2 provides a theoretical background of consumption patterns among informal workers; Section 3 reviews some of the important literature relating to the application of Engel's law to determine the pattern of consumption among different types of informal workers; the research gap and objectives of the study are explained in Section 4; Section 5 details the source of the data used in the study; the proportion of expenditure on food and non-food items of total expenditure, and the verification of Engel's law are explained in Section 6; Section 7 talks about the consumption pattern of food and non-food items among different types of informal workers, and contains the comparative study of consumption patterns among a heterogeneous group of informal workers in India; and Section 8 summarizes the above discussions and concludes.

## **2. IMPORTANCE OF INVESTIGATING CONSUMPTION PATTERNS AMONG THE INFORMAL WORKERS OF INDIA**

The factors influencing the purchasing decisions of consumers are not only important from a business perspective but are also relevant for the development of the economy. The improvement of business and, in turn, the development and prosperity of the economy heavily rely on the consumption pattern of consumers. We are aware of the Keynesian theory that in the time of economic recession, consumers are dubious enough to increase their purchases, which results in dwindling market demand and the economy slips into further depression. A pattern of consumer choice and purchases, therefore, plays a pivotal role in determining the trade policy and enhancement of the market. The

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<sup>1</sup> Anthropometric measures include height-for-age, weight-for-height and weight-for-age among children. In short, it indicates the BMI measures of the human body.

purchasing decisions of the consumers undoubtedly depend on their tastes, preferences, food habits, psychological factors, social factors and income (Pinki, 2014; Qazaffi, 2020; Ramya & Ali, 2016). Unfortunately, in the context of India, there is a lack of literature discussing consumer behaviour and consumption decisions. In the Indian economy, the dominance of informal employment is observed in the labor market (Marjit & Kar, 2007; Naraynan, 2015; Sanyal & Bhattacharyya, 2009). The trade policy and the marketing strategy are too reliant on the economic condition, especially in the worsening quality of employment and enhanced impoverishment during the post-reform period. This paper thus attempts to explore the consumption pattern among informal workers only, which constitutes the majority in the Indian labor market and plays an important role in determining the size of the market. Keeping in mind the heterogeneity of the informal workers, this paper seeks to determine the consumption pattern across different types of informal workers (SE, EIS and IEFS). Roy & Kundu (2020) reported that 24.74%, 21.87% and 22.98% of SE, EIS, and IEFS, respectively, were impoverished in the Indian economy during the post-reform period. This paper attempts to identify the consumption pattern of these three types of informal workers separately.

The Engel curve depicts the variation in demand for a particular commodity reflected by the change in consumer income. Engel's law states that with the enhancement of earnings, the proportion of expenditure on food products declines with an increase in income. Thus, Engel curves can be used to segregate the commodities into necessary as well as luxury goods. It can also be used as a tool to determine the law of demand.<sup>2</sup> Moreover, the income elasticity of different consumer goods will also be explained with the help of the Engel curve equation.

### 3. BRIEF REVIEW OF THE LITERATURE

This section presents some of the important literature representing consumer behaviour and the shape of the Engel curve. Since this curve describes how household expenditure on a particular good or service varies with household income, it is used by many researchers to highlight the consumption nature of several foods and non-food items. Some of the relevant literature is highlighted below; however, there is a limited amount of literature which explains the nature of consumption in India. Abdulai, Jain, and Sharma (1999) tried to provide information about the elasticity of food items used majorly by Indian households. They found that out of all the types of food items, the elasticity of demand is greater than one only for dairy products, irrespective of the rural and urban sectors.

Therefore, this study examines the nature of consumption throughout the world. Burki (1997) investigated structural changes in the demand of the purchaser using Pakistan's annual time series data on various food items from 1972–1991 using both the generalized axiom of revealed preference (GARP) and the first-difference estimator. It was found that, in Pakistan, chicken is a necessary good, while chickpeas are an inferior good. It was further found in the economy of Pakistan that the families whose income is below the poverty line tend to expend a higher percentage of their income on purchasing wheat compared to non-poor households, hence making wheat a Giffen good (Malik, Nazli, & Whitney, 2015). In Bangladesh, which is another developing neighboring country of India, a positive relationship was observed between a mother's education and empowerment with the dietary diversity of her children. Moreover, maternal education has a positive impact on the protein, iron and zinc intake of female children. Furthermore, the size of land owned plays a crucial role in determining more diverse diets and more calorie, protein and iron ingestion among male children and greater dietary diversity among female children. As expected, households owning dairy cows show a higher dietary intake among boys and a higher calorie consumption for girls (Sraboni & Quisumbing, 2018). In Nepal, the families receiving remittances disburse more on health and education compared to those families who receive no remittances (Thapa & Acharya, 2017). In the case of the Chinese economy, the poorest families where the wife is informally employed tend to reduce their expenditure on entertainment goods, whereas there is a significant enhancement if the husband is informally employed (He & Li, 2016). In Taiwan, from 1996 to 1998, it was found that food, housing, fuel and health are necessary goods, while clothing, furniture, housekeeping,

<sup>2</sup> The works of Hildenbrand (1994) and Kahneman, Wakker, and Sarin (1997) contain an explanation of the Engel curve to determine the law of demand.

education, recreation and transportation are luxury goods (Chung, Lee, & Brown, 2002). Furthermore, Prokeinova et al. (2017) used a data set from the Slovak Statistical Office to analyze the income elasticity of demand in Russia and concluded that the food items, viz. fruits, vegetables, coffee, tea, alcohol and beverages, were considered luxury products for those families whose head of household is in full-time employment. Even in those households whose heads of the family were self-employed, vegetables, coffee & tea, and alcoholic beverages were treated as luxury items. However, for households devoid of any children, meat, fats and oil are included in the category of inferior goods. In Jordan, family size had almost no impact on the demand for housing, transportation, and health during 2010 (Majali & Habashneh, 2014). Moreover, the consumption pattern for clothing, housing, personal care and the miscellaneous commodity group are not the same in urban and rural areas.

In this part, we look at the nature of consumption in several European countries. In the Czech Republic, the rise in the real income of the average Czech household leads to a fall in real food expenditure share (Syrovatka, 2003). In Romania, the income elasticity of demand for food and services has been greater than unity, while for non-food consumption, this is equal to unity for the 1997–2016 period (Neagu & Teodoru, 2017). Ergün (2021) analyzed the results of an online survey for several European countries, including Romania, Spain and Turkey, and found a surprising result that those who predict themselves to be financially insecure in the future have a greater tendency of buying luxury goods compared to those who consider themselves to be financially secure. Moreover, it was also found that the probability of expending on conspicuous status goods is higher among low-income countries. Hartmann, Nitzko, and Spiller (2017) used data from the German economy and found that demand for luxury goods depends on hedonism, self-actualization and the quality of the product instead of prestige.

The consumption nature of several African countries is discussed in this part. The income elasticity of basic dietary food is lower than that of luxury food in Africa (primary data from 48 African countries have been used). It was further found that a rise in income not only causes a rise in nutritional diets but also an increase in excessive intakes of fats and sugar. Not only that, undernutrition can also be seen, even in situations of rising income (Colen et al., 2018). Furthermore, in Morocco, there has been an exponential growth in demand for luxury goods in spite of the rising income inequality and social and political instability (Hamelin & Thaichon, 2016). It is further pointed out in this paper that consumers tend to categorize whether the products are necessary or luxury from a psychological point of view. Jaber and Hoogerhyde (2019) tried to explain that the decision of categorizing a commodity as necessary or luxury depends on the mood of the consumers. When males are in a negative mood, they consider a commodity as a luxury, whereas females do the same when they are in a positive mood.

Last, but not least, in the USA, Holcomb, Park, and Capps Jr (1995) used data from the Nationwide Food Consumption Survey (NFCS) for the period 1987–1988 and found that Engel's law is effective among consumers.

#### 4. RESEARCH GAP AND OBJECTIVE OF THE STUDY

The abovementioned works of literature only highlighted the pattern of consumption across different food and non-food items. However, none of the literature focuses on the consumption nature among informal workers or, more specifically, across different types of informal workers in India. In a country such as India where more than 80% of workers are engaged in informal activities, it is extremely important to look into the consumption nature of these informal workers.

1. Initially, a comparative analysis is carried out on the budget share of food and non-food items between formal workers and informal workers in India.
2. Next, a comparative analysis is conducted to investigate the budget share of food and non-food items among different types of informal workers in India.
3. Next, the pattern of consumption among the informal workers of India is investigated where all three different types of informal workers are considered separately. We also investigate whether the pattern of consumption among these workers is identical or not. Here, we employ the help of Engel's law.

## 5. DATA SOURCES

In this study, we utilize employment and unemployment survey unit-level data for India collected by the National Sample Survey Organization (NSSO) in the 68<sup>th</sup> round from 2011 to 2012. The excerpt only accommodates own account or self-employed (SE) workers, regular salaried workers and casual workers in the public and private sectors, indicating informal employees in the formal sector (IEFS) and employees in the informal sector (EIS). In order to do so, we have deducted those samples whose activity statuses (principal) are listed as employer (they represent formal workers), student, housewife, beggar, retired and handicapped. Thus, the total number of samples consisting of only informal workers is 117,172. The total number of extracted samples is segregated into three types—SE, EIS and IEFS, respectively.

The own-account workers in our data set are considered SE in this analysis. The workers of proprietary enterprises, partnership enterprises, domestic enterprises<sup>3</sup> and other enterprises in our data set are considered EIS. By contrast, the workers in public enterprises, private enterprises and cooperative enterprises who hardly get any social security benefits<sup>4</sup> are treated as IEFS.

During 2011–2012, the proportion of SE, EIS and IEFS in our data set is 28.30%, 61.34% and 10.34%, respectively.

## 6. COMPARATIVE ANALYSIS OF BUDGET SHARE ON FOOD AND NON-FOOD ITEMS AMONG FORMAL AND INFORMAL WORKERS IN INDIA

In order to investigate the nature of consumption among the informal workers in India, we have calculated the proportion of expenditure spent on food items as well non-food items out of the total expenditure across formal workers and different types of informal workers in India.<sup>5</sup> Table 1 contains information regarding the expenditure on food items as a proportion of the total expenditure among formal and informal workers. It shows that the proportion of food items to total expenditure is lower among formal workers compared to that informal workers. While the opposite is true in the case of non-food items to total expenditure. Since informal workers are more poverty-stricken compared to formal workers (Papola, 2008; Sundaram, 2008), the proportional expenditure on food items is also higher among informal workers compared to formal workers. Formal workers who are comparatively less impoverished tend to spend less than 50% of their total expenditure on food grains and more than 50% of their expenditure on non-food grains. The opposite percentage figures can be found among the informal workers. Hence, in this paper, the validity of Engel's law has been proved.

**Table 1.** Budget share of food and non-food items among the formal and informal workers of India.

Type of items	Formal workers	Informal workers
Food items to total expenditure	0.44	0.53
Non-food items to total expenditure	0.56	0.47

The budget share of food and non-food items across heterogeneous groups of informal workers is expressed in Table 2. Among the three types of informal workers, the proportional expenditure of food items of the total expenditure is more than 50%. On the other hand, the proportional expenditure of non-food items of the total expenditure is less than 50% for all three types of informal workers. However, proportional expenditure on food items is marginally highest among SE and lowest among IEFS, while the proportional value of the EIS group lies in between. It was proved that across different types of informal workers, the prevalence of poverty has been highest

<sup>3</sup>Domestic enterprises by definition are unorganized or informal in nature.

<sup>4</sup>All definitions are based on the Government of India (2007).

<sup>5</sup>In order to do, so we have used the data set which contains both formal and informal workers.

among SE and lowest among EIS (Roy & Kundu, 2020). The proportions reflect the observations of Roy and Kundu (2020).

**Table 2.** Budget share of food and non-food items among different types of informal workers in India.

Type of items	IEFS	EIS	SE
Food items to total expenditure	0.52	0.53	0.54
Non-food items to total expenditure	0.48	0.0.47	0.46

## 7. CONSUMPTION PATTERNS BETWEEN FOOD AND NON-FOOD ITEMS AMONG DIFFERENT TYPES OF INFORMAL WORKERS IN INDIA

Engel's curve is used to show consumer behaviour based on consumer income. In other words, Engel's curve depicts the change in household expenditure for a particular good or service as a result of variation in household income. The Engel curve also helps to identify whether a particular good is a necessity or a luxury. Therefore, in this study, our target is to identify which goods are necessary and which goods are luxuries among the informal workers in India. However, due to the paucity of income data of the sample households at the unit level in the NSSO round, expenditure data is used as a proxy of income data. Although Engel's theory tries to investigate the proportion of expenditure of a particular good corresponding to the level of income, the approach taken in this paper is to investigate the expenditure of the informal workers for different food and non-food items in a particular month corresponding to the monthly consumption expenditure of that particular worker.

To do this, we consider the Working-Leser model. The Working-Leser form was discussed by Working (1943) and further popularized by Leser (1963); Leser (1976). It has been further applied in studies by Angus Deaton and Muellbauer (1980) and Majali and Habashneh (2014). One of the most important advantages of this model is that it is a good fit for cross-sectional data in a wide range of circumstances. Thus, this model is expected to provide a very reliable result because the data in use is cross-sectional. The Working-Leser model can be expressed in the following way:

$$W_{ji} = \alpha_j + \beta_j \ln Y_i + \mu_i \quad (1)$$

Here,  $W_{ji}$  is the average monthly budget share of the  $j^{\text{th}}$  commodity of the  $i^{\text{th}}$  individual.  $Y_i$  is the average total monthly expenditure of the  $i^{\text{th}}$  household. During the time of calculation of the budget share of any particular commodity of an informal household, the total monthly expenditure of that household is used as a proxy of the total monthly income of that household. Here,  $\alpha_j$  and  $\beta_j$  are estimated for each commodity 'j' consumed by that particular type of informal worker separately. Using the quadratic model of the above equation proposed by Banks, Blundell, and Lewbel (1997), we investigate how the nature of consumption of a particular commodity change to luxury from necessary with the change in total expenditure. But here, the consumption nature of the informal workers will be investigated where a large percentage of them are economically poor and living just above the poverty line (Roy & Kundu, 2020). To investigate the consumption nature of the informal workers of India, they are divided into three types for the comparative analysis, so household characteristics are not considered in Equation 1.

Equation 2 presents the expenditure elasticity of demand of the  $j^{\text{th}}$  commodity of each type of informal worker (denoted as 'k') in the context of the Working-Leser form. It is explained as:

$$e_{jk} = 1 + \frac{\widehat{\beta}_{jk}}{W_{jk}} \quad (2)$$

Here, k implies SE, IEFS, and EIS separately. The results are given in Table 3.



Table 3. Nature of consumption of different food and non-food items among different types of informal workers in India.

Commodity	SE			IEFS			EIS		
	$\hat{\beta}$	R <sup>2</sup>	Nature	$\hat{\beta}$	R <sup>2</sup>	Nature	$\hat{\beta}$	R <sup>2</sup>	Nature
Cereals and Pulses	-0.06*** (0.002)	0.19	Necessary	-0.06*** (0.003)	0.2	Necessary	-0.07*** (0.0008)	0.28	Necessary
Milk	-0.07* (0.004)	0.21	Necessary	-0.01*** (0.004)	0.22	Necessary	-0.03*** (0.001)	0.25	Necessary
Oil	-0.01*** (0.0005)	0.15	Necessary	-0.01*** (0.0007)	0.2	Necessary	-0.01*** (0.002)	0.19	Necessary
Vegetables and fruits	-0.02*** (15.47)	0.13	Necessary	-0.02*** (0.001)	0.13	Necessary	-0.02*** (0.0004)	0.18	Necessary
Non-veg food	-0.01*** (0.001)	0.19	Necessary	-0.06*** (0.001)	0.19	Necessary	-0.02*** (0.0005)	0.21	Necessary
Sugar, salt and spices	-0.02*** (0.0005)	0.16	Necessary	-0.02*** (0.0006)	0.24	Necessary	-0.02*** (0.0002)	0.23	Necessary
Other food items	-0.01*** (0.0005)	0.21	Necessary	-0.01*** (0.003)	0.22	Necessary	-0.02*** (0.002)	0.24	Necessary
Addictive items	-0.02*** (0.0009)	0.25	Necessary	-0.02* (0.002)	0.22	Necessary	-0.01*** (0.0006)	0.21	Necessary
Fuel and light	-0.04*** (0.001)	0.2	Necessary	-0.03*** (0.002)	0.16	Necessary	-0.03*** (0.0006)	0.19	Necessary
Entertainment	-0.01*** (0.0006)	0.22	Necessary	-0.02*** (0.001)	0.21	Necessary	-0.02*** (0.0003)	0.29	Necessary
Other non-food items	-0.01*** (0.001)	0.27	Necessary	-0.01*** (0.001)	0.24	Necessary	-0.01*** (0.0005)	0.29	Necessary
Consumer service	0.02*** (0.002)	0.24	Luxury	0.03*** (0.002)	0.29	Luxury	0.02*** (0.0009)	0.16	Luxury
Rent, repair and tax	0.02* (0.001)	0.16	Luxury	0.07*** (0.02)	0.11	Luxury	0.02*** (0.02)	0.21	Luxury
Health	0.06*** (0.008)	0.26	Luxury	0.03*** (0.009)	0.22	Luxury	0.03*** (0.003)	0.23	Luxury
Education	0.04*** (0.003)	0.27	Luxury	0.03*** (0.004)	0.18	Luxury	0.03*** (0.001)	0.17	Luxury
Therapeutic apparatus	-0.02 (0.07)	0.10	Neutral	-0.01 (0.002)	0.01	Neutral	-0.001 (0.0005)	0.02	Neutral
Jewelry	0.04*** (0.003)	0.18	Luxury	0.04*** (0.006)	0.15	Luxury	0.05*** (0.002)	0.13	Luxury
Personal Transport	0.01*** (0.001)	0.13	Luxury	0.01*** (0.003)	0.14	Luxury	0.01*** (0.0009)	0.15	Luxury
Durable goods	0.01* (0.006)	0.22	Luxury	0.03* (0.008)	0.32	Luxury	0.07* (0.004)	0.28	Luxury

Note: \*\*\* denotes significance at the 1% level; \* denotes significance at the 10% level.

Working-Leser model was used by Majali and Habashneh (2014) to find out the income elasticity of demand for a particular commodity. In this paper, expenditure elasticity of demand is measured following the above mentioned formula for different food and non-food items consumed by informal workers in India separately. The expenditure elasticity of demand is the ratio of percentage changes in quantity demanded of the j<sup>th</sup> product due to a 1% change in average monthly consumer expenditure. According to this model, a commodity with a negative  $\hat{\beta}_j$  is a necessary good and a positive  $\hat{\beta}_j$  is a luxury good for a particular type of working group.<sup>6</sup> Needless to say, as the expenditure share of necessary goods declines with income (we consider expenditure as a proxy of income), then following Equation 1, we can say that increase in total monthly expenditure of a household causes the elasticity of a necessary good to fall and a luxury good to move toward unity. Thus, according to the Working-Leser model, as the consumer becomes richer, the food share of total income declines (Clements, 1985). Here, the ordinary least squares (OLS) method is applied in Equation 1 for each consumer good consumed by the informal workers in India. Table 3 displays the results

<sup>6</sup> If the income elasticity of demand of a particular commodity becomes less than one, then the item is considered necessary and if it is more than one, the commodity will become a luxury. Here, monthly expenditure of a household is used as a proxy of monthly income.

of the Working-Leser model which will identify the nature of demand for different types of food and non-food items consumed by informal workers in India. The types of consumer goods are collected from NSSO unit-level data. The estimated values of  $\beta$  determine whether the good is a necessary good or a luxury good. More specifically, if the value of  $\beta$  is positive, then the good is necessary and if it is negative then the good is considered a luxury from the point of view of the consumer. The result of the nature of consumer demand is given in Table 3, which emphasizes the fact that the nature of demand across different types of informal workers has been more or less the same, indicating that the pattern of consumption is the same across different types of informal workers in India. Even though there has been significant divergence among different types of informal workers as far as the incidence of poverty is concerned (Roy & Kundu, 2020), the nature of consumption has mostly been the same. In Table 3, the estimated values of  $\beta$  for all the food and non-food items are significant, except for the therapeutic apparatus, which is insignificant.<sup>7</sup> All food items are necessary goods irrespective of the type of informal workers. Apart from food items, “other non-food items” such as personal care products, including spectacles, torches, umbrellas, lights and toiletries, are also necessary goods among SE, IEFS as well as EIS workers. It is also observed that fuel and light and addictive items are also necessary goods. Surprisingly, expenses on entertainment, including cinema, picnics, sports, club fees, video cassettes, and cable chargers, among others, are also necessary goods for all three groups. Durable goods are luxury items for all three types of informal workers. Non-food items are mostly luxury for all three types of informal workers. Health and education are luxury items among all types of informal workers in India. This explains that informal workers do not spend a sufficient amount on health and education. Here, the estimated values of  $\hat{\alpha}$  for all the regressions are not mentioned in Table 3, but in all situations, the values are statistically significant.

## 8. CONCLUSION

This paper tests the validity of Engel’s law among different types of informal workers in India. Being more impoverished compared to formal workers, informal workers spend a larger proportion of their income on food items and a smaller proportion on non-food items. In this paper, the consumption pattern of different items across different types of informal workers has been calculated and also provides a comparative study. The consumption patterns among different types of food products, fuel and light, addictive items as well as entertainment items are identified as necessary goods for the three types of informal workers. Additionally, some non-food products, such as umbrellas and torches, are also necessary. Most of the non-food items are luxury goods, except therapeutic apparatuses, which are neither a necessary nor a luxury good for all three types of informal workers. Health, education, personal transport, durable goods and jewelry are all luxury goods among all types of informal workers.

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<sup>7</sup> Since the proportion of expenditure on therapeutic apparatus out of total expenditure is lower than 1 percent, expenditure elasticity of demand of this item has been insignificant. It here identified as neutral i.e. neither luxury nor necessary consumption from the point of view of all three types of informal workers.



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