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Consumer Expenditure Structure in Rural Bihar: Analysis based on Extended Linear Expenditure System

Jitendra Kumar Sinha

Retd. Senior Joint Director & Head, DES, Bihar. E-mail: jksinha2007@rediffmail.com

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Abstract

The study has analyzed the consumer demand and expenditure structure of household consumption data using the Extended Linear Expenditure System Model. Budget shares and expenditure elasticities were estimated for consumption categories allowing for a comparison of expenditure elasticities between the two seasons. Expenditure elasticities for consumer expendables, durables, and transport were highly elastic, while expenditure elasticities for the aggregate food categories were negative in October 2019 and highly inelastic in March 2020. Tradable and non-tradable non-farm goods are highly expenditure elastic. Increased expenditure on non-tradable goods and services may stimulate local production, thus creating new employment and enterprise opportunities. The increased expenditure on tradable goods represents a leakage of income from the local economy. The results indicate that an increase in farm incomes has the potential to stimulate economic growth through the stimulation of increased local production of non-farm goods and services. Increased income will also result in increased expenditure on goods not locally produced, which means leakage of income from the local economy. Increased production is limited by factors such as insecure tenure and cash flow problems that are amplified by high transaction costs associated with obtaining credit. Better access to credit would improve cash flow problems somewhat, but transaction costs need to be lowered. Demand-led growth needs to be strengthened with the production of goods not currently produced. Processing raw food materials into more convenient items would encourage increased local expenditure with increased income. The diversification into non-farm activities requires investment and poses a risk. Insecure tenure creates a disincentive to investment. Public policy should focus on alleviating tenure security and institutional infrastructure to strengthen the potential for demand-led growth.

Keywords: Consumer, Elasticity, Price, Expenditure, Demand.

JEL Classification: D12; R2; R5; O2.

INTRODUCTION

Economic Development influences the levels of living in the long run. India, a rapidly developing and agrarian dominant economy has been bringing many

changes in the socio-economic life of her population since independence through planned development. However, variation in natural resources; physical and climatic conditions; cultural, demographic, and economic factors; and degree of urbanization influence consumption expenditure patterns of the various states and is revealed by Consumption Expenditure Surveys by the National Sample Survey Organization in India. Exercises in consumption expenditure reveal the significant changes brought in the size and structure of the population, level of urbanization, attitude and aspiration of the various social groups, and the pattern of consumption. This is of immense value for gaining knowledge of the future demand of various commodities and for effective socio-economic development planning. It is also useful for fiscal policies for imposing commodities tax and for working out the actual tax burden on the different socio-economic groups.

An increase in the real income of individuals as a result of planned economic development is accompanied by an increase in demand for different commodities, whose deficit may lead to a price rise. Efforts to meet the deficit for the commodities by imports may put pressure to balance overall imports to maintain economic development. On the other hand supply of the commodities over demand tend to reduce the price which could lower the income of producers, and may cause a reduction in agricultural and industrial production. In either situation, the process of economic development will be hampered. It is therefore essential to know the future demand for consumer goods. In developing countries and regions, especially in poverty-ridden states like Bihar, Utter Pradesh, Madhya Pradesh and similar states/regions with agrarian-based economies anywhere else increased income in the hand of poor people will rapidly generate consumer demand, which will in case of short supply lead to inflationary tendencies that could impede the process of economic development. Thus, studies on consumption expenditure are useful for built-up effective planning strategies.

The term household expenditure is often referred to as the aggregate share of total consumption costs made by occupant households to meet their daily necessities, such as food, health cost, education, clothing, housing (rent), transport, fuel cost, leisure, and miscellaneous services. To that effect, household expenditure in Bihar accounts for two-thirds of the Gross Domestic Product (GDP), making it an indispensable demand variable for economic analysis. Household outflows including government transfers (denoted as "actual individual consumption" in the national financial statement) are equivalent to

households' consumption expenditure, plus overall government costs such as health care and education. Thus, from the aforementioned distinguished expenditure categories, some households comprise both tangible rent payments (for leaseholders) and credited rent payments (for owner-occupied housing). Aggregate household expenditure is measured in thousand rupees, as a proportion of GDP, in addition to the annual growth rates. Consequently, we measure household expenditure together with government transfers as a percentage of GDP. Additionally, we present expenditure on housing as a percentage of household disposable income.

Therefore, economic growth significantly drives change in the social-economic and cultural lives of the households as it influences living conditions both in the short and long-run periods. Hence, microeconomic theories attest that increasing income-generating welfare augments the households' purchasing power for goods and services which has a direct impact on household expenditure. This changes the households' interest from current expenditure status to financial investment and real assets thereby upholding an established standard of living for every household.

2. LITERATURE REVIEW

The best way to calculate the poverty line is by estimating the contemporary currency value of consumer goods and services using the Linear Expenditure System. Chen and Wei (2009) analyzed the variation of consumption expenditure for both rural and urban residents in Ningxia by comparing the average per capita GDP at a national level with residents' consumption expenditure patterns using the Extended Linear Expenditure System (ELES). In Taiwan, Rulof (2015) analyzed the pattern of consumer behavior. They attempted to assess a systematic aggregate consumer-demand behavior of Taiwan residents. Thus, they applied econometric modeling using the ELES in estimating the expenditure elasticity using the times series budget survey data spanning from 1951to 1990.

In most developing countries, agriculture plays an important role in the welfare of the people [Hazell & Haggblade (1993)]. Increased production of local farm and non-farm goods can generate employment opportunities and broaden rural income as a result of growth linkages. An increase in demand for local demand-constrained goods, as a result of an income shock, can stimulate a supply response from the local farm and non-farm production [Hendrik (2002)]. An increase in rural household spending on non-tradable goods could mobilize rural resources such as land, labor, and capital for growth [Delgado et

al (1998)]. Increases in household expenditures on consumer goods and services as a result of increased income can lead to significant indirect growth in non-farm income and employment. The effect of increased household income on the demand for commodities consumed by rural households and the potential for demand-led growth in the local rural economy must be known to develop appropriate policies focused on agricultural growth.

Consumer expenditure patterns and the estimates of expenditure elasticities can indicate the potential for demand-led growth in a particular economy. The studies on consumption expenditure patterns in developing countries are felt necessary especially because development brings significant changes in the pattern of consumption and helps in gaining knowledge of the future demand for different commodities and effective socio-economic development planning. Besides being useful for fiscal policies for imposing taxes. Even in underdeveloped countries, knowledge of consumption expenditure patterns provides valuable knowledge of the future demand for different consumer goods and is helpful in economic planning for the smooth process of economic growth.

The majority of research on consumption expenditure patterns and family budgets in India is based on consumption expenditure data published by the NSSO [Chatterjee, S., Rate, A. and Ray, R.(2006): Dalip, S.T. & Singh, S.(2006): Kamal, V.and Sidhu, R.S.(2007): Kumari, V.andSidhu, R.S. (2006): Sharma, R.C.(2006): Sable, S.A., Goswami, S.N. and Singh, U.K.(2004): Subramaniam, S.K.and Balchandran, K.(2006):. Sable, S.A., Goswami, S.N. and Singh, U.K.(2004):]. But micro-level analysis got the least priority. Adusumalli et al. (2012) conceded an analysis of expenditure patterns of rural consumers in India. They examined different types of rural households' cost patterns using the ELES model. Parks (1969) steered research on simulated maximum probability estimation of the ELES with obligatory non-negativity constraints. Deaton and Muellbauer (1980) offer a municipal linear disbursement system and illustrate the ELES utilizing Constant Elasticity of Substitution (CES) where Klein and Rubin's function is a precise form of the expenditure method. Furthermore, Sary (2018), examined household demand consumption in rural Cambodia using the ELES demand function and their findings indicate that the commodity's demand increases in tandem with income in Cambodia.

It is against this background that this study endeavors to apply Linear Engel curves as abridged forms of the ELES model in assessing consumer demand and expenditure structures at the micro-level in Bihar. Thus, we validate how the economic execution of estimates can circumvent extraordinary dimensional

integration problems. We also evaluate the parameters of the ELES function which encompasses expenditure, own-price, and cross-price elasticities.

3. THEORETICAL BACKGROUND

Cobb and Douglas (1928) developed a production and utility function with a purely technical relation that connects factor inputs and output and shows the maximum amount of outputs from any special set of inputs, given the existing technology (Cobb and Douglas 1928). The major weakness of the Cobb-Douglas production function is its flexibility of the unit cost for the linear curve to be straight through the origin. Thus, Tinbergen (1942) proposed a general feature of the Cobb-Douglas production function, illustrating the minimum quantity of capital and labor force. During the postwar period, the concept was assimilated into textbooks as a theory to be used by researchers. To that effect, the function is coined as the Stone-Geary utility function which is denoted as:

$$\bigcup(x) = \Pi_{j=1}^{n}(x_i - \gamma_i)^{\alpha_i} \tag{1}$$

Where x_i is the demand for a product ($i = 1, 2, 3...n$)γ_i denotes the constraints of our utility function. Additionally, $x_i > \gamma_i$ and $0<\alpha_i<1$ which is the marginal expenditure share, with $\Sigma_{i=1}^{n}\alpha_1 = 1$ certifies that the preference structure inferred by equation (1) is well behaved. Furthermore, $\cup$ denotes the utility associated with the consumption bundle

$$x'(x_1 \ldots x_n).$$

3.1. Linear Expenditure System (LES)

The total expenditure, which is also the budget constraint takes the following form:

$$\Sigma_{i=1}^{n}\ p_i q_i = M \tag{2}$$

Where p_i are the price and q_i the quantity of the ith item, and M = total expenditure on n goods. We can use this Linear Expenditure System (LES). The advantage of the LES is that it is simple and provides an intuitive economic interpretation, despite its strong discrete assumption [Parks (1969)]. The distinguishable assumption is not overly restrictive for such commodities as food, housing, or clothing. Thus the ELES function form is illustrated as:

$$p_i q_i = p_i q_i^0 + \beta_i(M - \Sigma_{j=1}^{n} p_j q_j^0) \tag{3}$$

Taking $i = 1, 2, 3 \ldots n$

Where $p_i q_i$ (p_i and q_i represents the indices for aggregate price and quantity for commodities within-group *i*) is the expenditure allocated to group *i*. *M* denotes the household total expenditure, while q_i^0 and β_i are estimated parameters. First, the consumer purchases the minimum required quantities of each commodity group q_i^0, costing $p_i q_i^0$. The consumer then distributes the remaining expenditure $\left(M - \Sigma_{j=1}^{n} p_j q_j^0\right)$ overall commodities in fixed proportions, β_i (marginal budget share of commodity group i). Hence, $p_i q_i$ and $\left(M - \Sigma_{j=1}^{n} p_j q_j^0\right)$ can be interpreted as subsistence and supernumerary expenditure, respectively.

3.2. Model Derivation

The extended Linear Expenditure System of demand function is put forward based on the utility function and its basic form is;

$$p_i q_i = p_i q_i^0 + b_i M - b_i \sum_{j=1}^{n} p_j q_i^0$$

$$p_i q_i = \left[p_i q_i^0 - b_i \sum_{j=1}^{n} p_j q_j^0 \right] + b_i M$$

$$p_i q_i = [\alpha_i] + b_i M \tag{4}$$

Where; $p_i q_i$ Dependent variables

Thus when calculating the Marginal Budget Share, $p_i q_i^0$ is denoted as Basic Consumption. Therefore in finding the constant $[\alpha_i]$ and b_i we use STATA and regress expenditure against income.

Thus,

$$\alpha_i = p_i q_i^0 - b_i \Sigma_{j=1}^{n} p_j q_j^0 \tag{5}$$

Hereafter the summation of $\alpha_1 + \alpha_2 + \ldots \alpha_n +$ is denoted as $\Sigma_{i=1}^{n} \alpha_i$ which is equated as shown below.

$$\sum_{i=1}^{n} \alpha_i = \sum_{i=1}^{n} p_i q_i^0 - b_i \sum_{j=1}^{n} p_j q_j^0$$

$$= \Sigma_{i=1}^{n} p_i q_i^0 (1 - \Sigma_{i=1}^{n} b_i)$$

$$\sum_{i=1}^{n} p_i q_i^0 = \frac{\Sigma\ \alpha_i}{1 - \Sigma b_i}$$

$$p_i q_i^0 = p_i q_i - b_i M + b_i \sum_{i=1}^{n} p_i q_i^0 \tag{6}$$

Income Elasticities and Price Elasticities

The uncompensated own-price elasticities are formulated as follows

$$\eta_{ii} = \frac{(1 - \beta_i) p_i q_i^0}{(p_i q_i) - 1} \tag{7}$$

The cross-price elasticity is denoted as:

$$\eta_{ij} = -\beta_i \frac{p_j q_j}{p_i q_i} \tag{8}$$

Thus, we derivate the expenditure/ income elasticity as:

$$\varepsilon_i = \frac{\partial q_i}{q_i} \div \frac{\partial Y}{Y}$$

$$= \frac{\partial q_i}{q_i} \times \frac{Y}{\partial Y}$$

$$= \frac{\partial q_i}{\partial Y} \times \frac{Y}{q_i}$$

$$= \frac{\partial q_i}{\partial Y} \times \frac{P_i}{P_i} \times \frac{Y}{q_i}$$

$$= \frac{\partial p_i q_i}{\partial Y} \times \frac{1}{P_i} \times \frac{Y}{q_i}$$

$$\varepsilon_i = \frac{\beta_1 Y}{p_i q_i} \tag{9}$$

4. DATA DESCRIPTION

The study was crippled by consumption and income data collected for the 2017-18 household survey by the NSSO in India as it was withheld due to creditability issues. This study collected data on various items of consumption and information on various socio-economic and demographic features of sampled households in the Nalanda and Vaishali districts of Bihar from October 2019 to March 2020 for micro-level study. The survey catered to a wide range of aspects precisely on the living conditions of respondents. These include among others; income, food, health, housing expenditure as well as goods consumption.

Bihar has two natural divisions –South Bihar and north Bihar. Nalanda and Vaishali represent agricultural dominant districts of the natural divisions of Bihar. Three-stage stratified random sampling method was used to select the total number of sampled residents drawn from two districts of Bihar. In the first stage, two Community Development Blocks from both the districts were selected in the proportion of the number of farmers (cultivators and agricultural labors), and four revenue villages were selected from each of the selected CD blocks in the proportion of farmers therein. The sampling frame of all households was prepared at the village level and ten percent of households were planned to be included in the survey. A total of 267 households from two districts, four-CD Blocks, and 16 villages of Bihar were interviewed on agriculture production, consumption, and trade through a structured questionnaire. This sample size conformed to derive inferences with over ninety percent confidence level to ensure creditability of the survey results and inferences based thereon. The data assortment procedure began by conducting a face-to-face interview with the principal decision-maker of the household. The data were collected for a month in two rounds (Round one in October 2019 and the second Round in March 2020) and then aggregated on an annual basis. The two rounds of the survey allowed for a comparison of food consumption in the two seasons and indicate a possible change in expenditure pattern.

5. MAJOR FINDINGS

5.1. Socio–Economic *& Demographic Characteristics*

The study presents socio-economic and demographic characteristics of sampled households such as average household size, literacy status of head of household, percentage drop-out of children in sample household, average annual per capita consumption expenditure, and the share of food and non-food consumption

expenditure in the total expenditure. Table 1 below illustrates the summary of these prominent statistics on household expenditure.

Table 1: Socio- Economic and Demographic Profile of the Household

Sr. No.	*Description*	*Cultivator*	*Agricultural Labour Households*	*Other Households*	*Combined*
1.	Sampled Households	80	132	55	267
2.	Average Household size	4.90	4.59	4.23	4.61
3.	Average annual per capita consumption expenditure Rs (USD)	69075.33 (916.60)	54234.77 (719.68)	62356.86 (827.45)	64466.86 (855.45)
4.	Literacy status of Head of sampled household (%)	74.6	57.2	68.9	69.8
5.	Percentage dropouts of children in sample household	46.0	64.4	56.7	54.3
6.	Share of food expenditure in the total household expenditure (%)	63.0	86.2	61.3	65.6
7.	Share of non-food expenditure in the total household expenditure (%)	37.0	13.8	38.7	34.4

Note: Figures under bracket at Serial 3 indicate mention corresponding USD for the ease of international readers.

Source: Computed from primary data.

Table 1 shows that the average household size was 4.61. It was 4.90 for cultivators, 4.59 for agricultural labor, and 4.23 for other households. The average literacy of the principal decision-maker of all the sampled households was 69.8%. It was highest for the cultivators (74.60%), followed by the other households (68.90%), and minimum for the agricultural labor (57.20%). Further, the highest dropout of children in school was found in agricultural labor households (64.4%) followed by other rural households.

Table -1 also shows that the average per capita consumption expenditure for all the sampled rural households was Rs 64466.86 (USD855.45). It varied among different categories of sampled households –Rs 69075.33 (USD916.60) for cultivators; Rs 54234.77 (USD719.68) for agricultural labor households; and Rs 62356.78 (USD827.45) for other rural households. The share of food expenditure in the total household expenditure for all the sampled households

was 65.6 percent. It was maximum for agricultural households at 86.2per cent, followed by the cultivators' households at 63.0 percent.

5.2. Consumption Pattern

The consumption function describes the relationship between income and consumption of goods. Its slope measures the income elasticity for goods/ services, which is an indication of the effect a rise in real income will have on the demand for particular goods. It may be interpreted as the percentage change in demand for goods as a result of a one percent change in real income. Estimated income elasticities can be used to assess how increments in rural households will be spent. Expenditure can be taken as a proxy for income, especially for poor rural households where savings or investments are often negligible. Expenditure elasticities measure the percentage change in expenditure on specific goods or services as total expenditure increases. A positive expenditure elasticity for a group of goods or services indicates that expenditure on that group will increase as total expenditure increases. An expenditure elasticity of one or more indicates that expenditure on that group will increase at a greater rate than total expenditure increases. A negative expenditure elasticity for a group of goods or services implies that expenditure in that particular group will decrease with increasing total expenditure and are known as inferior goods or services. The potential for stimulating growth in the rural economy through demand-led growth depends on the demand created in the rural area for non-tradable goods and services (Delgado,1998). Increased spending on locally produced goods and services will stimulate local production, but increased spending on tradable goods and services will result in leakage of income from the local economy to imported, manufactured goods (Hazell & Roeell, 1983; Joshua & Hendriks, 2003).

Knowledge of household consumption patterns plays an important role in ascertaining the potential for demand-led growth in a region. Studies of consumption patterns in South Africa have shown that the demand for staple goods is relatively non-responsive to changes in income and the income elasticity of non-staple goods is double that of staple goods and the commodity most responsive to change in income is clothing (Belete, Chris, & Averleke 1999; Hendriks, 2002). g. Non-farm, non-tradable, such as transport, education, and health were found to be most responsive to changes in income. Farm tradable were also responsive to income change, while non-tradable non-farm tradable were less responsive. Even though an increase in income may result in increased expenditure on tradable goods and services, locally produced goods and services

(non-tradable) are relatively income elastic. Thus, increased rural income could stimulate rural economic growth.

5.2.1. Expenditure Elasticities of Commodities

Nalanda and Vaishali, the two selected areas for this study are both rural regions with high agricultural potential. Expenditure elasticity for the commodities for both regions was estimated and presented in Table 2.

Table 2: Expenditure elasticity in Nalanda & Vaishali.

Sr. No.	*Expenditure Category*	*Nalanda*	*Vaishali*
1.	Consumer Expendables	0.76	0.71
2.	Durables	2.17	2.20
3.	Food	1.09	0.96
4.	Housing	2.46	2.72
5.	Social Obligations	0.31	-0.29
6.	Transport	8.30	2.52

Source: Computed from Primary data.

There is little possibility of income-induced growth in the demand for food existed, except for horticultural products. The category of durables was highly elastic. It included items such as furniture and appliances. The result suggests that increased household incomes would lead to increased expenditure on imported goods, thus directing part of additional income out of the local economy. The expenditure elasticity estimated for housing was relatively higher for both Nalanda and Vaishali. This suggests a potential for demand-led growth in both areas of housing (building and maintenance) in a local non–tradable service. The increased household income could lead to less than proportional increases in the demand for tradable farm commodities but more than proportional increases in demand for tradable non-farm, non-tradable farms, and non-tradable non-farm commodities. Thus, there exists the potential for demand-led growth through increased demand for non-tradable goods and services.

5.2.2. Average Budget Share, Marginal Budget Share, and Expenditure Elasticities for Selected Commodities

Comparison of significant average budget share (ABS), marginal budget share (MBS), and expenditure elasticity (EE) for selected commodities in the two rounds of the survey are presented in Table 3.

Table 3: Average Budget Share, Marginal Budget Share & Expenditure Elasticity for the selected commodities, 2019-20.

SN	*Expenditure category*	*October 2019*			*March 2020*		
		MBS	*ABS*	*EE*	*MBS*	*ABS*	*EE*
1.	Food	-0.03	0.67	-0.05	0.15	0.70	0.21
2.	Consumer Expendable	0.17	0.04	4.17	0.15	0.05	3.03
3.	Durables	0.17	0.01	12.64	0.07	0.01	10.92
4.	transport	0.31	0.09	3.28	0.21	0.07	3.09

Source: Computed from primary data.

Food expenditure accounted for the greatest share of household expenditure in both rounds of the survey (67% in the first round and 70% in the second round) and was consistent with the expectation for low-income households. In October 2019 the estimated expenditure elasticity was negative (-0.05), which means that an increase in household income will result in a decrease in expenditure on food. The result is unexpected as food is a necessity and is expected to have positive expenditure elasticity. As income increases the proportion of income spent on food should decrease and the category of income should be income inelastic. For low-income households, the income elasticity for food is expected to be higher than that for the higher-income earners as a larger proportion of the budget is spent on food in low-income households. In March 2020 the estimated expenditure elasticity was 0.21, which suggests that expenditure on food will increase with increasing expenditure but by a less than proportional amount. The differences in expenditure patterns in the two survey rounds could be due to differences in seasons and harvesting times of the main crops which could affect the amount of food available during the two periods.

Estimates for ABS indicate that expenditure on transport comprises 7-9%; the proportion of income spent on consumer expendables was 4-5% and 1% of income was spent on durables. The estimated expenditure elasticity for the durable expendables (comprising household requirements like kitchenware, TV, Mobile, etc.) and transport were large and positive for both rounds of the survey. This implies that expenditure on durables will increase with increasing income.

5.2.3. Expenditure Elasticities for Tradable and Non–Tradable Commodities

Consumption category commodities were aggregated depending on whether they are tradable or non-tradable goods and whether they originate on-farm or

not. Farm goods include horticultural crops and livestock items produced on household land. Non-farm goods are those that originate off-farm, such as furniture, bedding, and cleaning requirements. Tradability was based on local boundaries. Non-tradable are defined as those goods that are freely traded within the local areas but are not traded outside it, while tradable goods are traded outside the local region. Table- 4 summarizes the elasticity estimates for the tradable/ non-tradable goods category.

Table 4: Expenditure elasticity for tradable/ non-tradable commodities in Nalanda and Vaishali 2019 -20.

Expenditure Category	*October 2019*			*March 2020*		
	MBS	*ABS*	*Elasticity*	*MBS*	*ABS*	*Elasticity*
Tradable farm	0.019	0.322	0.060	0.149	0.326	0.460
Tradable Non-farm	0.936	0.325	2.880	0.872	0.300	2.910
Non Tradable farm	-0.006*	0.028*	-0.220*	0.021	0.120	0.170
Non Tradable non-farm	0.127*	0.530*	2.410*	0.115*	0.047*	2.450*

* Not statistically significant.

Expenditure elasticity for tradable farm goods is positive but inelastic (0.060 & 0.460), which suggests that expenditure on these items such as vegetables, meat, and staples purchased rather than grown will increase with increased income but by a less than proportionate amount. As income increases, some of the additional income will be spent on tradable farm goods thus representing a leakage of income from the local region but only by a small amount. An inelastic estimate for tradable farm goods is preferable from a local economy perspective as the increase in income would result in less leakage of income of the local economy than if the category was elastic. The bulk of household expenditure is on tradable, as seen from the higher ABS estimate for tradable compared to non-tradable, and therefore represents a leakage of income.

The category of tradable non-farm goods is estimated to be elastic for both study periods, namely 2.880 and 2.910 respectively. Consumption of non-farm goods will increase with increasing income at a more than proportionate amount. The ABS value for this category is relatively high (32.5% & 30.0%) suggesting that a comparatively large proportion of household expenditure is spent on tradable non-farm goods. The highly elastic estimates obtained for tradable non-farm goods in this study show that rural households are more likely to spend additional income on commodities other than food, which

represents a leakage of income from the local economy that would lower the potential for demand-led growth.

The result of non-tradable farm goods suggests that expenditure on it will increase only slightly with additions to income. The expenditure elasticity estimates for non-tradable non-farm goods were not significant. As non-tradable goods are not traded outside the local economy, increased expenditure on this category will not result in a leakage of income from the local economy.

CONCLUSION AND RECOMMENDATIONS

The study has analyzed the expenditure structure of commodities concerning the income of the sampled households in the Nalanda and Vaishali districts of Bihar using the ELES model. This set out to estimate budget shares and expenditure elasticity to verify the potential for demand-led growth in agrarian dominant developing and underdeveloped regions in India or other regions of the world.

Both the category of tradable non-farm goods and non-tradable non-farm goods are highly expenditure elastic indicating that an increase in household income will result in a proportionately greater increase in expenditure on non-farm goods. Increased expenditure on non-tradable goods and services may stimulate local production, thus creating new employment and enterprise opportunities. The increased expenditure on tradable goods represents a leakage of income from the local economy. The results of this study indicate that an increase in farm incomes has the potential to stimulate economic growth through the stimulation of increased local production of non-farm goods and services such as housing materials and repairs, childcare facilities, and goods and services currently not produced locally, such as processed food and clothing. Increased income will also result in increased expenditure on goods not locally produced, which means leakage of income from the local economy. Increased production is limited by factors such as insecure tenure and cash flow problems. Cash flow problems are amplified by high transaction costs associated with obtaining credit. Better access to credit would improve cash flow problems somewhat, but transaction costs need to be lowered through the improvement of physical and institutional infrastructure. Public policy should focus on alleviating tenure security and institutional infrastructure. Demand-led growth needs to be strengthened with the production of goods not currently produced. For example, the processing of raw food materials into more convenient items would encourage increased local expenditure with increased income and possibly reduce

the leakage of income from the local economy. The diversification into non-farm activities such as product processing requires investment and poses a risk. Insecure tenure creates a disincentive to investment as producers are not guaranteed the benefits from their investment. Thus, policies that improve tenure security would be strengthened the potential for demand-led growth. These conclusions may be extended to the regions akin to it,i.e., developing or underdeveloped agrarian-based regions.

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