With the liberalization of the Indian Economy in the mid 1990’s, substantial growth has been seen in the rural areas. Rural India which comprises around 70% of the total population of the country has become an emerging area for marketers. This study tries to identify key market variables that can help in crafting rural market segments. The socio-economic classification (SEC) 2011 which segments the market based on education level and possession of consumer durables. This study examines income as another key market variable together with education in the creation of distinct segments or hybrid segments. It then further identifies important criteria like technical, promotional and social in influencing consumers’ behaviour in the context of the purchase of consumer durables which can thereby help to create segments. The study concludes that the increase in education level has higher impact than increase in income on the important identified purchase criteria.

Keywords: socio-economic classification, segmentation, consumer durables, hybrid

Introduction

India is a fast emerging economy, which supports the second largest population of the world. The rural population stands accounted for 70% of the total country’s population and 12% population of the entire globe. Despite rising urbanization, 63% of India’s population will still continue to live in the rural areas even by 2025. According to Kashyap (2012), total rural India accounts for 70% of India’s total population, 56% of national income, 64% of total expenditure and 33% of total savings. Economic prosperity in rural areas has led to arousal of the feeling among the community involved in business that the rural and the urban markets can be treated alike and are similar (Vijayraghavan & Philip, 2005). India achieved the distinction of having comparatively lesser poorer rural population (30%) than the neighboring countries like Indonesia, Philippines, East Timor, Cambodia, Lao PDR, Myanmar, and Vietnam where over 70% of the poor people are concentrated in rural areas (Accenture, 2013; Balisacan, Edillon, & Piza, 2005). McKinsey Global Institute (2007) had predicted that in the coming two decades, the size of the Indian rural market would be much bigger than the consumer markets in total for countries such as South Korea or Canada and

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somewhat four times the size of the urban Indian market as recorded today. Higher purchasing power of rural Indians has now attracted both national and global brands.

Studies of researchers Bijapurkar (2003) and Jha (2013) have confirmed that differences exist between the markets of urban and rural areas in India with respect to criteria like living standard, levels of education, amenities, infrastructure for marketing and socio-cultural background. Traditionally demographic variables have been used as the most common base of segmentation. Most powerful national brands have been found to penetrate into rural areas over the last few years. The bases of segmentation of rural markets especially in case of India are still at the nascent stage. The most commonly used segments for rural markets are those defined by Market Research Society of India (MRSI) (2011) and those of National Council of Applied Economic Research (NCAER) (1988). In the last decade, specialized software tools have also been developed to map rural markets potential but these are only limited to a few marketers.

Socio-economic classification 2011 by MRSI (2011) has divided the consumers into segments on the basis of two parameters, namely, education level of the chief earner and the number of consumer durables a family owns. With the growing interest in rural markets dynamics, this study wants to unearth whether other demographic variables like income, besides education level can be used in the creation of homogeneous segments among rural consumers. Hence, the primary objective of this study is to evaluate the application of socio-economic classification as suitable criteria for carving out segments among rural consumers and further to evaluate the possibility of identifying segmentation variables for enabling consumer durables marketers to identify segments.

**Literature Review**

Literatures on rural markets and rural consumers buying behaviour are at an early stage dating back to the last one and half decade. The prior studies throw light primarily on two issues namely product differentiation that has an impact on rural consumers (Foxwall, 1999) and on the existence of differences in the purchase behaviour of rural and urban consumers (Parihar, Yadav, & Siddiqui, 2007). Literatures Review for this study mainly focuses on segmentation variables and rural consumer’s nature of preferences in purchase of consumers durables.

Wedel and Kamakura (2002) has contended in their study that one to one marketing is not advisable as it requires a lot of money and efforts which affects company’s profitability. The study gives importance on the need to understand the dynamism related to market segment composition and preferences which helps in the framing of business policies. Lee, Harp, Horridge, and Russ (2003) tried to identify segmentation variables for leather handbag market. Their study identified four purchase criteria (namely “country of origin”, “brand name”, “handbags in wardrobe”, and “organizational features”) and six patterns of consumption (namely “quantity versus usage”, “function versus fashion”, “quantity versus price”, “quantity versus quality”, “color versus style”, and “durable versus versatile”). Dubois, Czellar, and Laurent (2005), in their study for segmentation of consumers’ attitudes toward thirty international luxury brands, found the existence of three attitudinal segments which had been dominated by western culture. Luxury goods are identified by respondents to belong to (a) “hedonic” (purchased for pleasure) and “symbolic” (revealing self), (b) “elitist” (the small rich segment) and “democratic” (open to a larger audience), and (c) “distance” segments. Kumar and Madhavi (2006), in their study tried to find out the important factors that rural consumers take into account in the purchase of FMCGs. The study found that quality was followed by price, color, and taste in order of preference. Their study did not find any significant relationship between gender and the purchase of FMCG. Parihar, Yadav, and Siddiqui (2007), in their study related to urban and rural consumer behaviour towards consumer durables, found the existence of differences in their profile in terms of education, occupation, reference groups, income level and media habits. The study also found the existence of significant differences in the buyer’s behaviour with respect to product choice criteria like technical features, brand image, price, style and after-sales service. Dhumal, Khandkar, and Tayade (2008), in their study related to understanding rural consumer behaviour and process involved in taking decisions, tried to identify the factors that are taken into consideration while buying FMCG products. The study found that age level
and print media had significant impact on the buyer in matters of purchase decisions. Further, the need for social status and perceived feeling of superiority drives rural consumers towards branded products. Vigaray and Hota (2008) conducted their study to measure consumer values and consumer market segments to identify target market in the fashion apparel industry. The study found the presence of eleven types of consumer values and four consumer segments. The study found “spirituality” as a new criterion that can be used by marketers to create a niche segment in the clothing market especially related to fashion in the selected country. Mirza (2010) tried to study the impact of demographic variables like age, gender, household size, occupation, education, and level of income on the choice of retail outlet. The study found that the influence of demographic variables on retail outlets’ choice is partial with household size, education, and income having a significant effect on the choice of outlet and choice of brands. Singh and Chandhok (2010) studied key market segments and the bases for segmentations by FMCG corporate like Hindustan Unilever Limited (HUL) and Indian Tobacco Company (ITC) in India in the personal care products. The study revealed that both HUL and ITC used income as the basis for segmentation. HUL has segmented the market into three groups namely “the low income”, “high purchasing power”, and “affluent class”. ITC has also gone for similar classification based on the purchasing power of the customers. Prialatha and Malar Mathi (2011), in their study tried to analyze the role of demographic variables in influencing the behaviour of rural consumer. Their study found that with the increase of education level, the rational thinking of rural consumers improves and impulse buying is reduced. The study found that income with significant difference across marital status and gender of respondents was instrumental in influencing the purchase decision. Vasavada-Oza, Nagraj, and Krishna (2012), in their study on marketing to rural women analyzed the present rural SEC system. The paper tried to study the brands that were targeted on women. It found that cultural and geographical dimensions have influence on the consumers. Consequently the paper suggested that rural SEC could use cultural and geographical dimensions as additional criteria for segmentation. The study further suggested the adoption of special approach for each segment identified. Rajan (2012), in a study on buying behaviour of rural families in the purchase of durables goods by the use of SEC, identified a consumer buying behaviour model for rural consumers. The constructs used for the “model” were buying behavior, desire, attitude, information search, perceived utility, family orientation, social norms, and perceived risk. The study identified multiple influencers that affect overall consumer behaviour in rural India. Prabhakar and Gowthami (2012), in their investigative study related to the existence of possible link between demographics and consumer behaviour with respect to consumer durables, found that out of the five demographic factors tested (namely age, gender, occupation, education, and income), income and occupation turned out to have significant impact on the behaviour. On the other hand, age and education were found to be moderately influencing consumers. Ali, Khan, Ram, and Thumiki (2012), in their study related to the identification of the factors which influence the behaviour of rural consumers in the purchase of FMCG, found that price influences the rural consumer’s purchase decision. Their study also found that, when the products met the intended benefits of consumers, value for money is perceived to be achieved. Moreover the study found that factors like quality, performance, reliability and brand conscious play significant roles in influencing the purchase behavior. Jain and Jain (2013), in their paper studied SEC and its scope in the Indian market. The study found that SEC is more stable than classification based on income alone. It found that SEC is reflective of lifestyle and more relevant in the examination of consumption behavior. The study further suggested that selecting the right parameters and classes can help firms to understand the consumers in a better way. Bhadra (2013), in his study on targeting consumer in India found that there are distinct positions for the same brand targeting diverse target group profiles. He further conceptualized the strategy of “concurrent diverse positioning strategy” which can be adapted by marketers targeting a wide cross section of the Indian consumers belonging to widely differing income classes. Bukhari and Gupta (2013), in their study found that rural consumer’s preferred economy pricing and convenience in use of products and rather than the brands. Malar Mathi and Saraswathi
(2014), in their study on identification of factors that influence rural consumer buying behaviour towards durables, found that socio-cultural environment, media, education, occupation, and involvement of the users play significant roles.

Review on Segmentation Methods Used by Marketers and Organisations

Different organizations have devised different methods to segment the market. A few of them which have been found to be relevant are discussed below.

Thompson Rural Market Index (TRMI) has been developed by Hindustan Thompson Associates Ltd. (HTA). This database provides information on market potential value (MPV) of a particular district based on 26 variables viz. demographic variables, occupational patterns, agriculture based information etc. This tool has been useful for segmenting rural markets directly for agricultural inputs and durables but limited for consumer durables and consumables. This tool provided information only up to district level potential and not for individual villages.

MICA Rural Market Ratings (MRMR) has been developed by Mudra Institute of Communication, Ahmedabad (MICA) in association with ML Infomap Pvt. Ltd, New Delhi which provides a table top multimedia guide to rural India. It is available in a CD-ROM with colourful digital mappings and provides the relative market potential of a particular district. The ratings have been arrived at by using six parameters and 42 variables.

Lincompass is a software tool that maps the rural market. Lintas specialized rural marketing division, Linterland has developed it. It is geographical information system based software which has about 626,000 villages’ data all over the country on various parameters. It identifies and prioritizes potential villages in selected districts for marketing. It can also identify and classify villages as media dark, media grey, media plus. It also provides information about melas and mandis across the country.

LinQuest which has been developed by Initiative Media, is a software package that provides marketers the data on rural India. The data is arranged based on five parameters which are demographic, agricultural, income, literacy and civic amenities.

Arcview is mapping software which depicts 587,962 villages as digitized points on maps. It generates all kind of maps: agricultural maps, socio-cultural maps, national and state highway maps, to help the marketer plan his strategies for rural market. It identifies potential markets up to village level and also provides information with respect to accessibility, coverage and penetration.

NCAER adopted a method for classification of class of consumers based upon ownership and goods consumed. NCAER classifications divide the consumers into five groups namely destitute, aspirants, climbers, consuming class and very rich. But NCAER’s classification needs to be updated with the changes in price index from time to time.

Methods

Northeast India comprising of eight states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim is considered as a melting point of various ethnic cultures due to its location at the tri-junction of South Asia, East Asia and Southeast Asia. Northeast region of India is a land of heterogeneous cultures (Devi, 2015). This study was basically concentrated in two prominent districts of Assam namely Kamrup and Tinsukia. The districts had been selected based on the assumption that they are the most ideal districts (economy wise) for the study (and neither takes any extreme positions). Kamrup district supports a population base of more than 1,517,202 people as per census of India 2011 and is regarded as the gateway district of Northeast India. On the other hand, Tinsukia district supports a population base of more than 1,316,948 people as per census of India 2011 and is a rich industrial district. There are enough avenues through which Northeast India can be related to Southeast Asia. It has been found that racial, linguistic and cultural similarity prevails among the people of Northeast India and those of Southeast Asia (Mazumdar, 2009). The findings of this study will be quite applicable to other regions of Southeast Asia. This study made use of primary data which had been collected by survey method and the method of multi-staged sampling had been used for selection of the sample. The total sample size was 400 rural consumers determined by both qualitative approach and quantitative approach, a total of
200 respondents were taken from each district as it is commonly used for behavioural studies. It also ensured the minimum size in each cell while doing the cross tabulation for the required statistical analysis (Sudman, 1976).

A well structured questionnaire had been used. The questionnaire consists of two parts. The first part of the questionnaire has questions related to demographic profile like income level (which is measured at six levels) and education level of the chief earners (measured on the same number of levels i.e. seven which is at par with socio-economic classification mentioned in Table 2). It also includes questions related to possession of durables items like ceiling fan, LPG-stove, two wheeler, CTV, refrigerator, washing machine, personal computer/ laptop, car/jeep/van and air conditioner along with additional two items that is land holding and electricity connection which altogether amounts to a total of eleven durable items as given in the socio-economic classification list as per Table 1. The second part of the questionnaire consists of question related to important criteria that consumers take into account when purchasing durable items.

| Table 1. Item Owned By Respondent |
|----------------------------------|
| **Items owned / have access at home** | **Circle** | **Tick** |
| Electricity Connection | (01) | √ |
| Ceiling Fan | (02) | √ |
| LPG Stove | (03) | √ |
| Two Wheeler | (04) | √ |
| Colour TV | (05) | √ |
| Refrigerator | (06) | √ |
| Washing Machine | 07 | |
| Personal Computer/ Laptop | 08 | |
| Car/Jeep/Van | (09) | √ |
| Air Conditioner | 10 | |

| **Table 2. Respondent Education** |
|----------------------------------|
| **Respondent: Education (Q.2)** |
| No. of durables (transfer from Q1) | Illiterate | Literate but no schooling/ school up to 4 years | School 5 to 9 years | SSC/ HSC Some college (incl. a diploma) but not grad | Graduate/ post graduate: general | Graduate/ post graduate: professional |
|----------------------------------|------------|---------------------------------|----------------------|---------------------------------|-----------------------------|---------------------------------|
| 1 | None | E3 | E2 | E2 | E2 | E2 | E1 | D2 |
| 1 | E2 | E2 | E1 | E1 | D2 | D2 | D2 | D2 |
| 2 | E1 | E1 | D2 | D2 | D1 | D1 | D1 | D1 |
| 3 | D2 | D2 | D1 | D1 | C2 | C2 | C2 | C2 |
| 4 | D1 | C2 | C2 | C1 | C1 | B2 | B2 | B2 |
| 5 | C2 | C1 | B2 | B2 | A3 | A3 | A3 | A3 |
| 6 | C1 | B2 | B1 | B1 | A3 | A3 | A2 | A2 |
| 7 | C1 | B1 | B1 | A3 | A3 | A2 | A2 | A2 |
| (8) | B1 | A3 | A3 | A3 | A2 | (A2) | A2 | A2 |
| 9+ | B1 | A3 | A3 | A2 | A2 | A1 | A1 | A1 |
account in the purchase of durables. Altogether twenty two choice criteria have been adapted for the study which is discussed later.

The analysis and evaluation of the data had been done with a three step procedure where each successive technique used for analysis was dependent on the findings of the earlier analysis. First, for segmenting in the rural markets, the socio-economic classification 2011 has been applied. Second, to identify relationship between demographic variables (i.e. income and educational qualification) and possession of consumer durables, Chi-square test has been used. Third, in order to probe further the criteria that rural consumers’ take into account in purchase of consumer durables, logistic regression had been used. The methodology of each technique is given below.

Methodology on the use of socio-economic classification: As a first step, for evaluating segments for the rural markets the socio-economic classification 2011 had been applied. According to socio-economic classification, model the segments were created based on ‘education of chief earner’ and ‘number of consumer durables a family owns’. Table 1 represents eleven number of consumer durables a family may possess. Table 2 represents two-way classification of seven educational levels with respect to number of consumer durables the family possesses. It shows that when the family possesses eight consumer durables and the education of the chief earner is level 6 then the socio-economic classification will be A2. Twelve socio-economic classification have been used, namely A1, A2, A3, B1, B2, C1, C2, D1, D2, E1, E2 and E3.

Methodology on the use of Chi-square Test: The variables used for segmentation can be effective if significant relationship exists between the two demographic variables (namely income and educational qualification) and possession of consumer durables. Thereby segmentations based on socio-economic classification model necessitated the need to evaluate relationship between (i) educational qualification and possession of consumer durables and (ii) income level and possession of consumer durables. Accordingly, the following two hypotheses have been formulated as below:   
H1: There is positive relationship between Income level and total number of consumer durables possessed.

H2: There is positive relationship between Education level and total number of consumer durables possessed.

Chi-square test had been used to test the above hypotheses.

Methodology on the Use of Logistic Regression: The Chi-square tests in the earlier part set the basis to further probe into the nature of relationship between the variables (namely education level and income level) of the respondents and the total number of consumer durables possessed by them. The above findings would help marketers to identify segmentation variables. However it is equally important for them to know the criteria that rural consumers take into account in the purchase of consumer durables. As a last step, in order to further probe the criteria that rural consumers take into account in purchase of consumer durables, Logistic regression had been used in this study. Logistic regression is used when there are two possible categories of outcome (based on binominal probability theory) of the dependent variable. In this test, the factors influencing the purchase of consumer durables (i.e. technical, economical, promotional, and social) were treated as dependent variables. Here, each factor has two sub-categories which are as either high or low, where high is denoted by 1 (one) and low is denoted by 0 (zero). Education and income level of the consumers were treated as covariates. Binary coding criteria of the dependent variables have been given in Table A-1 and Table A-2 in the Appendix.

The model of consumer behavior by Tan (2007) had been adapted to identify the main factors that consumers take into consideration in the purchase of consumer durables (with minor modifications to make it more relevant to the rural markets). Altogether 22 criteria had been selected (details as given in the questionnaire) and consumers choice criteria scale had been prepared after dividing the 22 selected criteria into four sub-scales namely technical, economical, promotional, and social. Sub-scale “technical” includes criteria like reliability, durability, performance, after sales service, product variety, repairs, and support & convenience. Sub-scale “economical” includes criteria like value for money, life time costs, warranty, running costs, residual value, credit facility/ subsidy, and easy availability. Sub-scale “promotion” includes criteria like personal selling, cash discount, seasonal pricing, and advice from dealers. And sub-scale “social”
includes criteria like social belongingness, self-image, status and emotions. Cronbach’s Alpha had been administered for each scale and had been found to be medium (0.62 to 0.72) but it is acceptable to carry out further analysis as each of them is greater than 0.60 (Nunnally, 1976). The four sub-scale and respective reliability measure score are given in Table 3.

In order to know about degree of importance which consumers give on the various factors in the purchase of durables, a unipolar 5 point rating scale has been used. List of itemised categories with their corresponding numerical coding are given in Table 4.

### Results and Discussion

#### Socio-economic Classification 2011

The demographic data pertaining to the two districts of Kamrup and Tinsukia had been analyzed with respect to the two factors of socio-economic classification 2011 model. Table 5 shows eleven segments constituting of rural consumers in the districts of Kamrup and Tinsukia.

The Line diagrams below depicts social economic classifications of the different groups of rural consumers under socio-economic classification system with the percentage of total population for Kamrup (in Fig. 1.1) and Tinsukia (in Fig. 1.2) which has been found from the survey. Eleven segments have been identified for each of the two districts. Each segment is characterized by varying sizes. The details of the two districts are given below.

**Kamrup district.** In the Kamrup district, segment E1 reflects the largest level constituting of 25% rural consumers followed by segment A3, B1 and B2 comprising of 13%, 11% and 10% respectively. E1 represents: Illiterates in possession of two consumer durables. Whereas segment A3 represents: Chief earner with graduate/ post graduate qualification possessing six durables; segment B1 represents: Chief
earner with graduate/ post graduate qualification possessing five durables and segment B2 represents: Chief earner with higher secondary educational qualification possessing five durables.

Tinsukia district. In the Tinsukia district, segment D2 constitutes 21.50% of rural consumers followed by D1, E1 and B2 comprising of 20.5%, 18.50% and 11% respectively. Segments D2 and D1 are mainly characterized by difference in educational qualification of Chief earner as possession of consumer durables remain three for both the segments. Segment B2, constituting of only 11% of rural consumers, represents

Chief earner with higher secondary educational qualification in possession of five consumer durables. Segment E1 represents: Chief earner as illiterates possessing two consumer durables. From the segments created by socio-economic classification, it has been apparent that maximum possession of consumer durables is six and minimum is two among the rural consumers.

Chi-square Test

Literatures trying to find impact of demographic variables on urban consumer behavior are abundant, but scarce for the rural
consumers. The findings of the two districts basically concentrated on the rural areas generated the need to identify relationship between two demographic variables and possession of consumer durables.

**Kamrup district.** It can be seen from Table 6 that the value for Pearson Chi-square under Income Level is 3.23, with 135 degrees of freedom, which is significant at the p=0.001<0.05 level. Therefore it can be concluded that there is a relationship between Income level and total number of consumer durables possessed by the rural consumers in the district of Kamrup. Again from the same table, it can be seen that the value for Pearson Chi-square under education level is 2.84, with 108 degrees of freedom, which is significant at the p=0.001<0.05 level. Therefore it can be concluded that there is a relationship between education level and total number of consumer durables possessed by the rural consumers in the district of Kamrup.

In Table 7, the contingency coefficient value (which gives us a measure of the strength of the relationship) under income level is 0.786, which is greater than 0.5. Hence the variable Income level (which is treated as independent variable) also has a strong impact on the total number of durable goods possessed.

**Tinsukia district.** It can be seen from Table 8 that the value of Pearson chi-square under income level is 2.117, with 80 degrees of freedom, which is significant at the p=0.001<0.05 level. Therefore it can be concluded that there is a relationship between income level and total number of consumer durables possessed by the rural consumers in the district of Tinsukia. Again, from the same table, it can be seen that the value for Pearson chi-square under education level is 1.13, with 64 degrees of freedom, which is significant at the p=0.001<0.05 level. Therefore it can be concluded that there is a relationship between education level and total number of consumer durables possessed by the rural consumers in the district of Tinsukia.

In Table 9, the contingency coefficient value under income level is 0.717, which is greater than 0.5. Hence the variable Income level (which is treated as independent variable) has strong impact on the total number of durable goods possessed. Further, from the same table under education level, the contingency coefficient value is 0.601, which is greater than 0.5. Hence the variable education level (which is treated as independent variable) also has a
strong impact on the total number of durable goods possessed.

The above findings confirm that in the two districts, there is a positive relationship between income/education level and total number of consumer durables possessed by the consumers. Therefore, variations in the income level or education level of the consumers make an impact on the number of durables possessed by the consumers.

**Logistic Regression**

**Kamrup district: Technical criteria.**

Table 10 (in step 0) presents the results with only the constants included before any inclusion of coefficient is entered into the equation. Logistic regression compares this model with a model including all the predictors (income and education) to determine whether the latter model is more appropriate without the addition of independent variable and the model would be correct for 70% of the times.

Table 10 (in step 1) presents that when predictors are added, the classification error reduces and can predict with 90.5% accuracy. The overall significance is tested using the model Chi-square test as given in Table 11 which is derived from the likelihood of observing the actual data under assumption that the model has been fitted is accurate. Here the model Chi-square test has a value of 17.691 and a probability of $p<0.000$ indicating that the predictors (i.e. independent variable) have a significant effect.

The H-L statistic (Table 1) has a significance of 0.335 which means that it is not statistically significant, hence satisfies H-L goodness-of-fit test. The Wald statistics (Table 13) has been found to be significant ($p\leq0.000$) indicating significant contribution of the predictor (independent) variables. Both the predictor variable Income and education ($p\leq0.010$) have been found to contribute significantly in the prediction. Table 13 shows the value of Exp (B) in terms of change of odds. If the value exceeds 1, then the odds of an outcome occurring increase and if less than 1, then any increase in the predictor leads to a drop in the odds of the outcome occurring. The Exp (B) of education is more than the Exp of income, hence when education increases by one level; the odds ratio will be 1.8 times more likely to prefer technical criteria in purchase decision of consumer durables.

**Kamrup district: Economical criteria.**

Table 14 (step 0) presents the results with only the constants included before any coefficients is entered into the equation. Logistic regression compares this model with a model including all of the predictors (income and education) to determine whether the latter model is more appropriate without the addition of the
independent variable and the model would be correct for 88% of the times. When the predictors are added (in step 1), the classification can predict at the same level of 88.5% accuracy.

The model Chi-square as per Table 15 has a value of 6.044 and a probability of $p=0.069>0.05$ thus indicating the predictors (i.e. independent variables) do not have a significant effect on purchase of consumer durables.

Table 10. Classification Table

| Observed | Predicted | Percentage Correct |
|----------|-----------|--------------------|
|          | Technical Factors |                  |
| Step 0   | 0          | 20                 | 0.0 |
|          | 1          | 180                | 100.0 |
| Overall Percentage | 70 |

Table 11. Omnibus Tests of Model Coefficients

| Step | Chi-square | df | Sig. |
|------|------------|----|------|
| Step 1 | Step   | 17.691  | 2  | .000 |
|       | Block    | 17.691  | 2  | .000 |
|       | Model    | 17.691  | 2  | .000 |

Table 12. Hosmer and Lemeshow Test

| Step | Chi-square | df | Sig. |
|------|------------|----|------|
| 1    | 9.086      | 8  | .335 |

Table 13. Variables in the Equation

|               | B   | S.E. | Wald | df | Sig. | Exp(B) |
|---------------|-----|------|------|----|------|--------|
| Step 1        |     |      |      |    |      |        |
| Income        | -.520 | .142 | 13.360 | 1 | .000 | .594   |
| Education     | .637  | .247 | 6.670  | 1 | .010 | 1.890  |
| Constant      | 2.805 | .671 | 17.474 | 1 | .000 | 16.521 |

Kamrup district: Promotional criteria.

Table 16 (step 0) presents the results with only the constants included before any coefficients is entered into the equation. Logistic regression finds that the model would be correct for 66% of the times. When the predictors are added (in step 1), the classification error reduces and can predict with 70.5% accuracy.

The model Chi-square as per Table 17 has a value of 9.895 and a probability of $p=0.007<0.05$. Thus this indicates that that the predictors (i.e. independent variables) have a significant effect at 5% level of significance.

The H-L statistic as per Table 18 has a
### Table 14. Classification Table

| Observed | Predicted | Economical Factors | Percentage Correct |
|----------|-----------|--------------------|--------------------|
|          | 0         | 1                  |                    |
| Step 0   | Economical Factors | 0          | 24                | .0                 |
|          | 1         | 0                  | 176               | 100.0              |
| Overall Percentage | 0     | 1                  |                    |
|          | 1         | 0                  | 176               | 88.0               |

### Table 15. Omnibus Tests of Model Coefficients

|          | Chi-square | Df | Sig.  |
|----------|------------|----|-------|
| Step 1   | 6.044      | 2  | .069  |
| Block    | 6.044      | 2  | .069  |
| Model    | 6.044      | 2  | .069  |

### Table 16. Classification Table

| Observed | Predicted | Promotional Factors | Percentage Correct |
|----------|-----------|--------------------|--------------------|
|          | 0         | 1                  |                    |
| Step 0   | Promotional Factors | 0          | 68                | .0                 |
|          | 1         | 0                  | 132               | 100.0              |
| Overall Percentage | 0     | 1                  |                    |
|          | 1         | 0                  | 125               | 66.0               |

### Table 17. Omnibus Tests of Model Coefficients

|          | Chi-square | Df | Sig.  |
|----------|------------|----|-------|
| Step 1   | 9.895      | 2  | .007  |
| Block    | 9.895      | 2  | .007  |
| Model    | 9.895      | 2  | .007  |
significance of 0.500 which means that it is not statistically significant, hence satisfies H-L goodness-of-fit test.

Table 19 found that the predictor’s income and education (p≤0.010) have been found to contribute significantly in the prediction. The Exp (B) of education is more than that of income, hence when education increases by one level, the odds ratio will be 1.15 times more likely to prefer promotional factor in purchase decision of consumer durables.

Kamrup district: Social criteria. Table 20 (in step 0) presents the results with only the constants included before any coefficient is entered into the equation. Logistic regression compares this model with a model including all the predictors (income and education) to determine whether the latter model is more appropriate without the addition of the independent variable and the model would be correct for 82.5 percent of the times. When predictors are added (in step 1), the classification error can predict at the same 82.5 percent accuracy.

The model Chi-square as per Table 21 above has a value of 5.202 (degrees of freedom 2) and a probability of p = 0.074 >.05 indicating that the predictors (i.e. independent variables) have no significant effect.

Summary and marketing implications for Kamrup district. In the Kamrup district, it has been found that technical and promotional factors have significant impact on purchase of consumer durables. Under “technical criteria”, both income and education level have been found to have significant impact. Increase in education level has more impact than increase in consumer’s income on purchase decision of durables. Marketers can go for more informative advertisements to educate consumers about product features and qualities. “Economic criterion” is found to be insignificant implying that rural consumers are not so influenced by discounts or variations in prices. Rather they are prepared to pay the indicative price provided quality products are available. Income and education level have significant impact on “promotion criterion” as well. Increase in education level has more impact than increase in consumer’s income on purchase decision of durables. Marketers can make use of unique promotional schemes and train dealers to induce sale of durables. Lastly income and education of consumers fails to have impact on the “social criterion” indicating that the rural consumers of Kamrup district are not status conscious when it comes to possession of consumer durables.

Tinsukia district: Technical criteria. From Table 22 (step 0) above it has been found that the model would be correct for 88% of the times. In Table 22 (step 1) when the predictors are added, the classification error reduces and can predict with 88% accuracy.

The model Chi-square as per Table 23 has a value of 0.400, degrees of freedom 2 and a probability of p=0.819, indicating that the predictors (i.e. independent variables) are not significant at 5 percent level of significance.

Tinsukia district: Economical criteria. Table 24 (step 0) suggests the model would be correct for 92.5% of the times. In Table 24 (step 1), when the predictors are added, the classification error reduces and can predict with 92.5% accuracy.
Table 20. Classification Table

| Observed | Predicted | Percentage Correct |
|----------|-----------|---------------------|
|          | Social Factors |             |
|          | 0 | 1 | 35 | .0 |
| Step 0   | 0 | 1 | 165 | 100.0 |
| Overall Percentage | | | | 82.5 |

Table 21. Omnibus Tests of Model Coefficients

| Chi-square | df | Sig. |
|------------|----|------|
| Step 1     | 5.202 | 2 | .074 |
| Block      | 5.202 | 2 | .074 |
| Model      | 5.202 | 2 | .074 |

Table 22. Classification Table

| Observed | Predicted | Percentage Correct |
|----------|-----------|---------------------|
|          | Technical Factors |             |
|          | 0 | 1 | 24 | .0 |
| Step 0   | 0 | 1 | 176 | 100.0 |
| Overall Percentage | | | | 88.0 |

Table 23. Omnibus Tests of Model Coefficients

| Chi-square | df | Sig. |
|------------|----|------|
| Step 1     | .400 | 2 | .819 |
| Block      | .400 | 2 | .819 |
| Model      | .400 | 2 | .819 |

The model Chi-square in Table 25 has a value of 0.395 and a probability of p=0.821. Thus this indicates that the predictors (i.e. independent variables) do not have significant effect at 5 percent level of significance.

Tinsukia district: Promotional criteria

Table 26 (step 0) above suggests that the model would be correct for 67% of the times. Table 26 (step 1) above indicates that when predictors are added, the classification error reduces and can predict with 67% accuracy.
### Table 24. Classification Table

| Observed | Predicted     | Percentage Correct |
|----------|---------------|--------------------|
|          | Economical Factors | 0 | 1 |                |
| Step 0   | Economical Factors | 0 | 15 | .0 |
|          | Overall Percentage | 0 | 185 | 100.0 |
|          | Overall Percentage | 0 | 185 | 92.5 |

### Table 25. Omnibus Tests of Model Coefficients

| Step 1   | Chi-square | Df | Sig. |
|----------|------------|----|------|
| Step     | .395       | 2  | .821 |
| Block    | .395       | 2  | .821 |
| Model    | .395       | 2  | .821 |

### Table 26. Classification Table

| Observed | Predicted     | Percentage Correct |
|----------|---------------|--------------------|
|          | Promotional Factors | 0 | 1 |                |
| Step 0   | Promotional Factors | 0 | 66 | .0 |
|          | Overall Percentage | 0 | 134 | 100.0 |
|          | Overall Percentage | 0 | 134 | 67 |

### Table 27. Omnibus Tests of Model Coefficients

| Step 1   | Chi-square | Df | Sig. |
|----------|------------|----|------|
| Step     | 1.303      | 2  | .521 |
| Block    | 1.303      | 2  | .521 |
| Model    | 1.303      | 2  | .521 |
The model Chi-square as per Table 27 has a value of 1.303 and a probability of \( p=0.521 > 0.05 \) thus indicating the predictors (i.e. independent variables) do not have a significant effect on purchase of consumer durables.

**Tinsukia district: Social criteria.** Table 28 (step 0) above suggests that the model would be correct for 71% of the times. Table 28 (step 0) presents that when the predictors are added; the classification error reduces and can predict with 71% accuracy.

The overall significance is tested using the model Chi-square test as given in Table 29. Here the model Chi-square test has 2 degrees of freedom, has a value of 11.067 and a probability of \( p<0.004 \). Thus this indicates that the model has a poor fit implying that the predictors (i.e. independent variable) have a significant effect.

The H-L statistic in Table 30 has a significance of 0.000 which means that it is not statistically significant, hence satisfies H-L goodness-of-fit test.

The Wald statistics in Table 31 has been found to be significant (\( p \leq 0.000 \)) indicating significant contribution of the predictor (independent) variable. The predictor variable education (\( p \leq 0.010 \)) has been found to contribute significantly in the prediction.

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**Table 28. Classification Table**

| Observed | Predicted | Percentage Correct |
|----------|-----------|---------------------|
|          | Social Factors |          |
| Step 0   | 0          | 0 58 .0  |
|          | 1          | 0 142 100.0 |
| Overall Percentage | | 71 |

| Observed | Predicted | Percentage Correct |
|----------|-----------|---------------------|
|          | Social Factors |          |
| Step 1   | 0          | 1 58 .0  |
|          | 1          | 0 142 100.0 |
| Overall Percentage | | 71.0 |

**Table 29. Omnibus Tests of Model Coefficients**

| Step 1 | Chi-square | Df | Sig. |
|--------|------------|----|------|
| Step   | 11.067     | 2  | .004 |
| Block  | 11.067     | 2  | .004 |
| Model  | 11.067     | 2  | .004 |

**Table 30. Hosmer and Lemeshow Test**

| Step | Chi-square | df | Sig. |
|------|------------|----|------|
| 1    | 34.413     | 7  | .000 |

**Table 31. Variables in the Equation**

| Step 1 | B     | S.E.  | Wald | Df | Sig.  | Exp(B) |
|--------|-------|-------|------|----|-------|--------|
| Income | -.070 | .178  | .154 | 1  | .695  | .933   |
| Education | .672  | .216  | 9.662| 1  | .002  | 1.959  |
| Constant| -.209 | .474  | .195 | 1  | .659  | .811   |
Summary and marketing implications for Tinsukia district. In Tinsukia district, both income and education have been found to have significant impact on Social Criterion. Marketers can go for more reinforcement advertisements where consumers may be assured about their products’ ability in meeting social status or enhancing their self esteem in the society by possessing of the durables. Further, it has been found that the increase of education level has more impact than increase of income level in motivating consumers to go for purchases.

Conclusion

From the study, it can be concluded that rural consumers’ needs and preferences are homogeneous in nature. The Socio-economic Classification (SEC) 2011 can be applied for creation of segments among rural consumers. The present version of SEC makes use of only one demographic variable namely education level as segmentation variable. This study suggests the application of income as another important demographic variable which can help in the creation of segments or in another way, the combination of education level and income may be used for segments creation. This study also identifies that technical, promotional and social influences the behavior of rural consumers in the purchase of durables. Further, both income and education levels are found to have varying degrees of impact on the behavior of rural consumers. In many cases, increase in education level has been found to have higher impact than increase in income on the above criteria in the purchase of consumer durables by rural consumers.

The information in this study is basically an aggregation of a few selected markets in India. However, there is scope in the use of this model for carrying out further studies on other products besides durables. Besides other parts of India, it can be tried out in identified markets of other Southeast Asian countries. Further, it can be used as a guideline by marketers eyeing the rural markets to formulate policy decisions on segmentation through SEC. Besides the use of income and education under SEC as per this study, the use of additional criteria like ethno-culture, family size, family cycle and decision based on family role structure may be explored in further research.

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Appendix

Q1. Answer the following questions using tick sign for the appropriate answer.

a. Your name (optional)

b. Your Location

c. Your Gender
5Male 5Female

d. Household Income level (per month)
5Rs. 4001-6000 5Rs. 6001-8000 5Rs. 8001 -10000
5Rs. 10001 -12000 5Rs. 12001 -14000 5Rs. 14001 or above

e. Chief Earners Education
5Illiterate 5Literate but no formal schooling/ School- Upto 4 years
5School-5 to 9 years 5SSC/HSC 5Some College (incl. a Diploma) but not Grad 5Graduate/ Post Graduate: General 5Graduate/ Post Graduate: Professional

Q2. Indicate the status of your using the following Durables by a tick mark.

| Sl no | Consumer Durables                  | In Possession | Not in Possession |
|-------|------------------------------------|---------------|-------------------|
| 1     | Electricity Connection             |               |                   |
| 2     | Ceiling Fan                        |               |                   |
| 3     | LPG-Stove                          |               |                   |
| 4     | Two Wheeler                        |               |                   |
| 5     | Colour TV                          |               |                   |
| 6     | Refrigerator                       |               |                   |
| 7     | Washing Machine                    |               |                   |
| 8     | Personal Computer/ Laptop          |               |                   |
| 9     | Car/Jeep/Van                       |               |                   |
| 10    | Air Conditioner                    |               |                   |
| 11    | Agricultural Land                  |               |                   |

| Number of standard 11 owned |

Q3. Indicate how important the following criteria are before the purchase of a product by using tick sign.

| Sl no | Criteria                  | Rating 1-2-3-4-5 | Sl no | Criteria                  | Rating 1-2-3-4-5 |
|-------|---------------------------|-------------------|-------|---------------------------|-------------------|
| 1     | Reliability               | cccce             | 12    | Residual value            | cccce             |
| 2     | Durability                | cccce             | 13    | Credit facility / subsidy | cccce             |
| 3     | Performance               | cccce             | 14    | Easy availability         | cccce             |
| 4     | After sales service       | cccce             | 15    | Personal selling          | cccce             |
| 5     | Product variety           | cccce             | 16    | Cash Discount             | cccce             |
| 6     | Repairs and support       | cccce             | 17    | Seasonal pricing          | cccce             |
| 7     | Convenience               | cccce             | 18    | Advice from Dealers       | cccce             |
| 8     | Value for money           | cccce             | 19    | Social belongingness      | cccce             |
| 9     | Life time costs           | cccce             | 20    | Self-Image                | cccce             |
| 10    | Warranty                  | cccce             | 21    | Status                    | cccce             |
| 11    | Running costs             | cccce             | 22    | Emotions                  | cccce             |

Not Important-1, Least Important-2, Somewhat Important-3, Important-4 and Very Important-5
### Logistic Regression: Binary Coding Criteria and Benchmarking

| Factor   | Table A-1: Dist: Kamrup                                                                 | Table A-2: Dist: Tinsukia                                                                 |
|----------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Technical| Lowest individual rating received=2.75                                                | Lowest individual rating received=3.29                                                  |
|          | Highest individual rating received=5.00                                               | Highest individual rating received=5.00                                                 |
|          | Mean rating=(2.75+5.00)/2=3.785                                                        | Mean rating=(3.29+5.00)/2=4.14                                                         |
|          | Binary Coding Criteria: 2.75-3.78=0 and 3.79-5.00=1                                    | Binary Coding Criteria: 3.29-4.14=0 and 4.15-5.00=1                                     |
| Economical| Lowest individual rating received=1.00                                                 | Lowest individual rating received=3.50                                                  |
|          | Highest individual rating received=5.00                                               | Highest individual rating received=5.00                                                 |
|          | Mean rating=(1.00+5.00)/2=3                                                            | Mean rating=(3.50+5.00)/2=4.25                                                         |
|          | Binary Coding Criteria: 1.00-3.00=0 and 3.10-5.00=1                                    | Binary Coding Criteria: 3.50-4.25=0 and 4.26-5.00=1                                     |
| Promotional| Lowest individual rating received=2.00                                                 | Lowest individual rating received=2.27                                                  |
|          | Highest individual rating received=4.75                                                | Highest individual rating received=5.00                                                 |
|          | Mean rating=(2.00+4.75)/2=3.375                                                        | Mean rating=(2.27+5.00)/2=3.87                                                         |
|          | Binary Coding Criteria: 2.00-3.375=0 and 3.38-4.75=1                                   | Binary Coding Criteria: 2.27-3.87=0 and 3.88-5.00=1                                     |
| Social   | Lowest individual rating received=1.00                                                 | Lowest individual rating received=2.80                                                  |
|          | Highest individual rating received=5.00                                               | Highest individual rating received=5.00                                                 |
|          | Mean rating=(1.00+5.00)/2=3                                                            | Mean rating=(2.80+5.00)/2=3.9                                                          |
|          | Binary Coding Criteria: 1.00-3.00=0 and 3.10-5.00=1                                    | Binary Coding Criteria: 2.80-3.90=0 and 3.10-5.00=1                                     |