Outlining Household Budget

Rajat Deb & Jaharlal Sarkar

Tripura Central University, Suryamaninagar, Tripura, India

Abstract

The research focuses to report the association of demographics and household budgetary allocation and to appreciate the influence of diverse expenses on the latter. Using Cross-Sectional research design, a survey is executed with interview-schedule comprising 47 questions to collect data from 125 randomly selected respondents of Mohanpur, a town of North-Eastern Indian state of Tripura. The data is tested for its reliability and validity. A model is formed and data reduction is carried out. Cross Tabulations and Multiple Regressions are performed to test the null hypotheses. The empirical results document that demographics and different expenses have statistical significance in the household budgetary allocation. Policy relevance are drawn and the study acknowledges a few short comings like the small sample size, defined study area, study period, selective variables and the limitations of statistical tools while generalising the results. It also indicates the road map for future researches.

Key words: Household Budget, Survey, Descriptive Statistics, Inferential Statistics

JEL Classification: C83, C88, D14, G02

Paper Classification: Research Paper

Introduction

The budget preparation is becoming a challenging task for the household heads due to galloping costs of food, healthcare, education housing especially for Indian middle classes. Interestingly, policy makers emphasise on the price hikes of the food basket items instead of inflation of services such as healthcare and education, which is even more severe. Even government has taken measures to curb the food inflation but little has been done to tame service inflation, which has become a structural issue with the country's changing demographics and adversely impacts the household budgets. In Consumer Price Index (CPI) calculation the Ministry of Statistics and Programme Implementation (MOSPI), Government of India gives more weight to subsidised public services resulting in understated services inflation. Unfortunately, the official statistics could not reveal the exorbitant inflation in healthcare and education services which increases even in double digits year-on-year (y-o-y) basis. Economic theories advocates that consumption, rather than income, accurately measure the material wellbeing of households, and the study has focused to assess the influence of three major heads of consumption along with role of demographics while chalking out household budgets in this era of high inflation.

Literature has indicated that studies on household budgets attempted on multi-dimensional aspects such as food and its demand (Jensen, 2006; Icoz, 2004; Liu & Chern, 2001), purchasing behaviour (Arthey, 1989), price influence (Wheelock, 1986), paradoxes between income and demand for specific food items (Subramanian & Deaton, 1996; Bouis, 1994; Knudsen & Scandizzo,1982) and pattern of expenses (Bamidele, Abayomi & Esther, 2010; Obayelu, Okoruwa & Ajani, 2009; Omojola, Effiong & Pepple, Effiong & Pepple, 2006; Amao, Oluwatayo & Osuntope, 2006). Other prominent factors have also been earmarked in budgetary decisions, e.g., textile demand (Jones & Hayes, 2002; Zhang, Ching, Gong, Moody & Liu, 1999; Winkor, 1975), effects of the economic crisis (Avram, Figari, Leventi, Levy, Navicke, Matsaganis, Militaru, Paulus, Rastringina & Sutherland, 2013; Jenkins, Brandolini, Micklewright & Nolan, 2012), changes in consumption behaviour (Martı ́nez, 2010), use of grocery list (Thomas & Garland, 2004; Blaylock & Smallwood, 1987), and personal care expenses (Souiden & Diagne, 2009; Sturrock & Pioch, 1998). Even the unplanned purchase (Shoham & Brenc ic, 2003), expenses for children (Dahl & Lochner, 2005; Duncan, Yeung, Brooks-Gunn & Smith, 1998), promotional pricing (Dawes, 2009; Dawes, Keynes, Lockshin & Murphy 2009; Dawes, 2005), brand preference (Mazumdar & Papatla, 1995) and per unit spending pattern based on gender (Mazumdar & Papatla, 1995; Davis & Bell, 1991; Zeithaml,1988) have significant impact on household budgets. Moreover, studies pointed out health care expenses (Gruber & Washington, 2005) and education expenses (Kingdon, 2005; Lancaster, Maitra & Ray, 2003) play crucial role in budgetary allocation.

Literature has indicated that studies related to household budgets have been mostly carried out abroad within different social, technological, economic, political, legal, international and natural environment which largely varies in India in addition to its regionally skewed demographics. The north-eastern region of India has different topological, economical, cultural, social and religious characteristics which have its influence in various aspects of households' budgets, which mostly remains unaddressed at least in Tripura. This deficiency in the literature has been detected and the study has attempted to replenish the gap by contributing to the body of knowledge. The study has been confined to randomly selected sample respondents of Mohanpur, a town of North-Eastern Indian state of Tripura, due to parsimony and time constraints.

The study has contributed to the literature in the following ways; firstly, the results have indicated that demographics significantly influence households' budgetary allocation. For example, women take most of the shopping decisions, use grocery lists which has been correlated in earlier studies (Casey & Martens, 2007; Thomas & Garland, 2004) and are sometimes involved in impulsive buying (Aylott & Mitchell, 1999). Income has been identified as a significant determinant of budget allocation for different heads of expenses, in line with prior result (Aylott & Mitchell, 1999) but, deviates from a study where it has not been identified as the vital factor (Lyons, Mayor & Tol, 2009). The significant influence of age has been reported especially for those households having children or aged persons for the earmarked expenses in the budgets for personal care, as also reported in few studies (Jones, Hyde, Victor, Wiggins, Gilleard & Higgs, 2008). Family transition like marriage has significant influence on budgetary allocation, similar with prior findings (Johannisson, 2008). Secondly, results have validated households spend a significant amount on principal foods, correlated with earlier studies (Shepherd, Magnussen & Sjo ̈de ́n, 2005) in high-valued quality foods (Yu & Abler, 2009) and even price elasticity impacts the food budget (Huang & Gale, 2009). Thirdly, results documented that respondents set aside a stipulated fund in their household budgets for healthcare as reported in earlier studies (Elliott, Beattie & Kaitfors, 2001) but the coverage of healthcare insurance has not been reported by the present study, which has differed from literature (Chernew, Cutler, & Keenan, 2005; Gruber

& Washington, 2005). Finally, most of the respondents have shared that a significant amount of their budget has been allocated for the education of children, without any gender bias, in line with literature (Morley, Gunawardena, Kwesiga, Lihamba, Odejide, Shackleton & Sorhaindo, 2006; King & Hill, 1993) but contradicts with studies of gender biasness in India (Kingdon, 2005; Subramanian, 1995).

The study aims to report the association of demographics and household budgetary allocation and to assess the impact of different expenses on the latter.

The remainder of the paper has been built up as: the conceptual framework has been presented in Section 2 and the research methodology in Section 3 respectively. In Section 4 the findings of the statistical tests have been reported and the interpretation of those findings has been offered in Section 5; the conclusions of the study have been summarised in Section 6 while limitations and implementations have been enumerated in Sections 7 and 8 respectively. The roadmap for future studies has been indicated in Section 9.

Conceptual Framework

The related literature was extensively reviewed to frame research objectives and hypotheses for testing the null hypotheses based on samples to infer about the study population. The research hypotheses and their null forms have been developed in the following manner:

Demographics and Household Budget

The related studies addressing the relation between the selective demographics and household budget have been reviewed to create the conceptual model from which hypotheses have been deduced.

Gender

Literature has validated that gender influences household budgetary decisions like consumption pattern (Casey & Martens, 2007; Russell & Tyler, 2002; Lury, 1996), the gender of the highest earner (Ra ̈sa ̈nen, 2006; Katz-Gerro, 2002). Studies have shown that the grocery lists are mostly prepared and used by the women (Thomas & Garland, 2004; Putrevu & Ratchford, 1997; Blaylock & Smallwood, 1987), with better outcome (Jaramillo & Alcázar, 2013) and such planning influences the household budget (Thomas & Garland, 1993), and even impulsive purchases (Aylott & Mitchell, 1999; Polegato & Zaichkowsky, 1994).

Income

Literature has indicated that household consumption and its pattern depends on the level of income (Feng, Zou & Wei, 2011; Viswanathan & Rosa, 2010; Welsch & Kuhling, 2009) and any increase in that cuts the expenses on necessities and increases on luxuries (Feng et al. 2011; Duarte, Mainar & Sanchez-Choliz, 2010; Clements, Wu & Zhang, 2006), especially on food items (Engel, 1857); while few studies have concluded that expenses such as food, health care are less price sensitive (Rosas, Sheinbaum & Morillon, 2010; Lyons et al. 2009; Selvanathan & Selvanathan, 2003) and in contrast it has also been documented that income is not the exclusive changing factor for consumption pattern (Lyons et al. 2009), that the diversification of expenses depend on higher level of income (Davis, Winters, Carletto, Covarrubias, Quinones, Zezza, Stamoulis, Azzarri & Digiuseppe, 2010; Ellis & Freeman, 2004; Barrett, Reardon & Webb, 2001).

Age

Studies have concluded that age is a prominent predictor of personal care consumption, which in turn, influences household budget (Jones et al. 2008; Ra ¨sa ¨nen, 2006); longevity increases higher consumption and health needs and influence household budgets (Li, Zhang & Zhang, 2007; Masson, Bayoumi & Samiei, 1998; Higgins, 1998; Graham, 1987; Ram, 1982, 1984; Modigliani, 1970; Leff, 1969).

Marital Status

Literature has shown that marital status influences the household budgets (McElroy & Horney, 1981; Manser & Brown, 1980) and the same has been influenced by a combined effect of gender and marital status (Johannisson, 2008; Gerrans & Clark-Murphy, 2004; Jianakoplos & Bernasek, 1998).

So, the study has hypothesised that:

H_{01}: Demographics do not influence household budget.

H_{A1}: Demographics influence household budget.

Food Expenses and Household Budget

The theories of planned behaviour (TPB) positively influence a particular food item or items, play a significant role in food expenses and its budgetary allocation (Shepherd, Magnussen & Sjo ¨de ´n, 2005; Ajzen & Fishbein, 1980, 2004). Studies have validated that income and life style significantly impact choice of food items such as meat (Wang, Fuller, Hayes & Halbrendt, 1998; Bansback, 1995), high-valued quality food (Yu & Abler, 2009; Gao, Mroz, Popkin & Zhai, 1996). Food expenditure elasticity as a catalyst in household budget has also been researched (Huang & Gale, 2009; Gould & Dong, 2004; Gould, 2002; Guo, Mroz, Popkin & Zhai, 2000). So the study has hypothesised that:

H_{02}: Food expenses do not influence household budget.

H_{A2}: Food expenses influence household budget.

Health Care Expenses and Household Budget

Health care has great importance in households' consumption and a large amount of household budget is earmarked for that especially for those who are in poverty (Elliott et al. 2001; Ensor & San, 1996). As the study has focused to measure the impact of health care expenses on family budget, it is aptly required to incorporate the health insurance cost and coverage to determine the budget allocation and literature has validated it (Chernew et al. 2005; Gruber & Washington, 2005; Cutler, 2003; Chernew, Frick & McLaughlin, 1997). So, it has been hypothesized that:

H_{03}: Health care expenses do not influence household budget.

H_{A3}: Health care expenses influence household budget.

Education Expenses and Household Budget

Literature has indicated that in developing and least developed countries budget allocation for food is largely gender biased but in India such biasness is evident even in educational expenses (Kingdon, 2005; Lancaster et al. 2003; Subramanian, 1995; Subramanian & Deaton, 1990, 1991). In contrast, a few studies have indicated gender equity in education expenses in framing the household budgets (Morley et al. 2006; King & Hill, 1993).

So, it has been hypothesized that:

H_{04}: *Education expenses do not influence household budget.*

H_{A4}: *Education expenses influence household budget.*

Predictors

Predictors

| Demographics | H_{01} | | Household Budget Allocation | | H_{03} | Health Care Expenses |

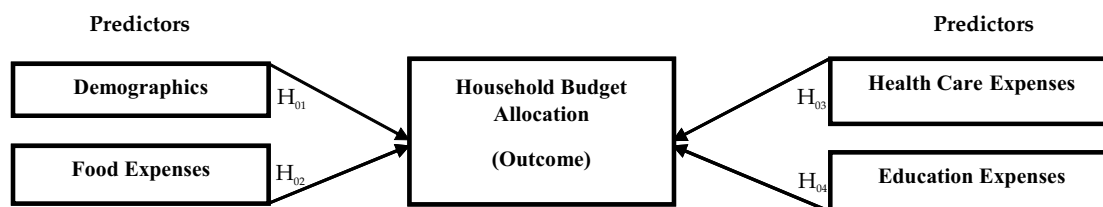| Food Expenses | H_{02} | | (Outcome) | | H_{04} | Education Expenses |

Fig. 1: Conceptual Model of Household Budget Allocation

In Fig: 1 a conceptual model has been constructed based on which hypotheses have been deduced.

Methodology

The research methodology refers to the underlying theoretical roadmap for carrying out the research while the methods indicate the techniques and procedures applied for data collection and analysis in a systematic manner (Saunders, Lewis & Thornhill, 2014). This Section has the following sub-sections:

Research Design

The study has used cross sectional (survey) research design as it has been carried out at a particular point of time (during January-June, 2016). The survey approach has been used since the objective of the study is to understand the wider overview (Fisher, 2007) of respondents' perception about household budget and to produce quantitative details of the studied population (Pinsonneault & Kenneth, 1993).

Methods

Schedule Development

An interview-schedule has been used as a tool for data collection since people are reluctant to share their personal finances (Churchill, 2001; Malhotra, 2005). The items in the schedule have been developed in the following ways:

Firstly, A University digital library sources have been accessed especially the e-journals of prominent publishers, with full text of around 118 relevant papers have been downloaded, and reviewed extensively to generate a 54-items inventory.

Secondly, a pilot study was conducted with 30 sample respondents randomly selected; as suggested by Zikmund & Babin (2012) to check the clarity, relevance and completeness of the items. The outcome of the pre-test reduced the number of items to 47.

The alpha values of pre-test (32 questions on Likert scale) have been computed as:

.679,.687,.657..697,.654,.655,.667,.675,.649,.657,.718,.688,.653,.699,.650,.639,.669,.637,.686,.688,.653,.658,.668,.704,.649,.709,.626.

Finally, the 47-items scale which was developed from the pre-test was administered to a larger sample.

Sampling Design

The study has assumed all the households of Mohanpur, sub-division of West Tripura, district of Tripura, a north-eastern Indian state, as the study population. Accessing the Census Report with the study population of 1,13,265 (as per Census Report, 2011, Govt. of India) constituted the sampling frame for drawing the samples. Simple Random technique has been applied as the sampling frame has been assumed as accurate, easily accessible, having small sample size with geographically concentrated study population where face-to-face contact has more suitability. The enumerator approached around 138 heads of the households (respondents) of which 125 gave their nod. The study has taken 125 sample respondents assuming precision size as (e) 10% with confidence level 95 %. The sample size has been determined following the guidelines of social science researchers (Isreal, 2013; Tabachnick & Fidell, 2013; Roscoe, 1975).

Data Collection Design

The primary and secondary data have been collected in the following manner:

A Primary Data

A cover letter containing demographical, behavioural and closing instructions has been used as suggested by Dillman (1978). Firstly, the enumerator has convinced the prospective respondents to build a rapport and the purpose of the study was briefly explained to them to get bonafide responses (Oberhofer & Dieplinger, 2014). The study has framed a close ended pre-coded schedule. A 5-point Likert scale commencing from strongly disagree (1) to strongly agree (5) has been used as it has facilitated in coding, tabulation and interpretation of data (Hair, 2010). The respondents were requested to fill up the items of the schedule carefully and doubts were clarified whenever requested and they were assured about maintaining anonymity (Jobber, 1985; Oppenheim, 1992). To eliminate the risk of non-comprehension and ambiguity problems, on request the items of the schedule were translated into vernacular language (Bengali) as suggested by Peytchev, Conrad, Couper & Tourangeau (2010).

Secondary Data

The pertinent secondary data has been accessed from the online and printed academic journals, books, conference proceedings, business news papers and websites.

Parameters

The variables of the study have been categorized as predictors which include selective demographics, food, health care and education expenses and the outcome as household budget allocation.

Significance Level

The study has assumed the confidence level as 95% i.e. the significance level (α) has been fixed at 5%.

Data Analysis Strategy

Research questions have been addressed through simple descriptive statistics (mode, mean and standard deviation) and with inferential statistics (Cross Tabulation and Multiple Regression). As the focus of the study is to cluster the items into few relevant factors (Mitchelmore & Rowley, 2013), Principal Component Analysis (PCA) was found relevant. IBM Statistical Package for Social Sciences (SPSS)-20 was used for data processing.

Choice of Tests

The objectives for using different inferential statistics to test the null hypotheses have been summarized below:

Table 1: Inferential statistical Tools

Test	Measurement	Variables				Purposes	Null Hypotheses
		Predictors	No.	Outcome	No.		
Cross Tabulation	Nominal (Categorical)	Demographics	4	Household Budget	1	To know the relationships among two or more of the variables.	H_{01}
Multiple Regression	Interval	Food, Health Care & Education Expenses	3	Household Budget	1	To predict the impact of three predictors on an outcome.	H_{02}, H_{03}, H_{04}

Table 2: Rationale for Statistical Tests

Tests	Type	Rationale
Cross Tabulation	Joint Probability Distribution	Random Samples, Independent Observations, Mutually exclusive row and column variable categories covering all the observations, Large expected frequencies.
Multiple Regression	Parametric	Interval Data, linearly related, sample size (n)>30, sampling distribution has bivariate form which has normal distribution.

Instrument Validation

The statistical tests have provided different types of validities and to counter the internal validity threats, the respondents have been selected randomly (selection threat), separately (diffusion treatment threat), judiciously (regression threat), controlled the variables (history threat). The external validity threats have been controlled by restricting the results for its generalization to those beyond study groups, settings and history (threats of selection, new settings treatment and history).

Findings

Descriptive Statistics

Descriptive/sample statistics summarize the raw data obtained from the samples. The study has used mode, mean and standard deviation to represent the sample data. The study has reported that majority of the respondents are men (74.4 percent), married (80 percent), 36-45 years old (64 percent), educated up to matriculation (47.20 percent), Hindus (90.4 percent), scheduled caste (56 percent), service holders (39.2 percent), having 4 members in their families (81.6 percent),

earn INR 0.01-0.02 million per month (52 percent), monthly spending on food INR .005 million and above (55.2 percent), on health care per month spend INR .001-.003 million (69.6 percent), on education per month spend INR 001-.003 million (70.4 percent), monthly saving INR .002-.005 million (66.4 percent).

In regard to Determinants of Expenses Factor, mean values are: Average Mean=4.01, S. D. =.89, mean scores have ranged from 4.65 to 3.35. The second factor labelled as Shopping Frequency with mean values: Average Mean=4.01, S. D. =.74, mean score for items ranging from 4.35 to 3.56. With respect to Spending Decisions Factor, mean values are: Average Mean=4.02, S. D. =.81, mean scores ranging from 4.42 to 3.64. The mean values of Food Expenses Factor are: Average Mean=3.84, S. D. =.91, mean score for items have ranged from 4.23 to 3.42. The fifth factor labelled as Health Care Expenses with mean values: Average Mean=3.69, S. D. =.89, mean scores have ranged from 4.01 to 3.29. The mean scores for Education Expenses Factor include: Average Mean=3.65, S. D. =.86, mean score for items have ranged from 4.11 to 3.39.

Factor Analysis

A total of 125 respondents were asked questions on 32 key items related to household budgets. The reliability has been checked using Cronbach's alpha, which was computed as 0.861. Cronbach's alpha has been applied to measure the level of consistency between multiple measurements of the parameters (Hair, 2010). The Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy (MSA) for the study has been computed as 0.78. It has been found as fit for factor analysis as it has scored above the required value of 0.6 (Kaiser & Rice, 1974). The overall significance of correlation metrics have been tested with Bartlett Test of Sphericity (approx. Chi square =1432.764 and significance at 0.000), which has provided evidence for conducting Factor analysis.

Table: 3 Factors Extracted through PCA

(Factors: Determinants of Expenses, Shopping Frequency, Spending Decisions, Food Expenses, Health Care Expenses & Education Expenses)

Compo-nents	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.355	27.620	27.620	7.121	27.620	27.620	6.234	24.787	24.787
2	6.152	18.706	46.326	6.009	18.706	46.326	5.129	16.572	41.359
3	4.906	15.448	61.548	4.421	15.448	61.548	3.773	13.851	56.210
4	3.117	8.215	69.763	3.015	8.215	69.763	2.554	6.545	62.755
5	1.501	7.483	77.246	1.221	7.483	77.246	1.227	5.233	67.988
6	1.129	6.025	83.271	1.027	4.268	81.514	1.008	4.017	72.005

Extraction Method: Principal Component Analysis

From Table 3, the Eigen values of the extracted six factors with the individual and composite percentage have been tabulated. Only factors having Eigen values over and above 1, explaining closely 83.271 percent, having sufficiency (Bryant & Yarnold, 1995; Pett, Lackey & Sullivan, 2003) about the total variables have been retained. The factors have been labelled with appropriate names. Varimax rotation, an orthogonal rotation has been applied to maximize the variances for the factors.

Inferential Statistics

Inferential statistics, the numerical techniques for estimating about the studied population based on results carried out on the samples have been applied in the study to test the different null hypotheses.

Cross Tabulation

The study has employed Cross tabulation and Chi square test at 5 percent significance level to measure the association (or not) between the influence of demographics (predictors) on household budgetary allocation which has produced significant results; and have provided support to reject H_{01} (Table 4).

Table: 4 Summary Results of Cross Tabulation*

Variables		Results		
Demographics (Predictors)	Household Budgetary Allocation (Outcome)	Pearson's Chi-Square Value	Likelihood Ratio	Significance Value**
Gender	Household Budgetary Allocation	26.808	45.325	.000
Age	Household Budgetary Allocation	39.105	45.624	.012
Income	Household Budgetary Allocation	26.874	34.845	.091
Marital Status	Household Budgetary Allocation	32.158	41.328	.008

*Authors' calculations,   **p<.05

The Gender of the respondents and their household budget allocation decisions have a significant positive relation, i. e. male respondents have higher inclination towards household spending in comparison to the women respondents. The Pearson's Chi-Square value is 26.808 and the Likelihood Ratio is 45.325. Further, the significance value has been computed as .000 (p<.05), which has documented significant association between the variables; has evidence to reject H_{01}.

Respondents' age and their household budget allocation decisions have a significant positive relation, i. e. middle aged respondents, have higher tendency for spending. The increasing responsibilities for members of families influence the spending behaviour of the households. The Pearson's Chi-Square value is 39.105 and the Likelihood Ratio is 45.624. Further, the significance value has stood at .012 (p<.05), indicating presence of a significant association between the variables; has provided basis to reject H_{01}.

Income level of respondents and their household budget allocation decisions have a significant positive relation, i. e. moderately higher the income level, higher the inclination for spending. The Pearson's Chi-Square value is 26.874 and the Likelihood Ratio is 34.845. Further, the significance value has been computed as .091(p<.05), clearly indicating significant association between the variables; has evidence to reject H_{01}.

The respondents' marital status and their household budget allocation decisions are related in a way that higher the number of married respondents, higher the inclination for household spending. The Pearson's Chi-Square value is 32.158 and the Likelihood Ratio is 41.328. Further, the significance value has been calculated as .008 (p<.05), which has documented a significant association between the variables; has supported to reject H_{01}.

Cross Tabulation Results

Table 5: Household Budget Allocation & Gender

		Gender		Total
		Men	**Women**	
Budget Allocation	High	73	19	92
	Average	14	8	22
	Low	6	5	11
Total		93	32	125

Table 6: Chi Square Test

	Value	D. F.	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.808	8	0.000
Likelihood Ratio	45.325	8	0.000
Liner-by Liner Association	.322	1	0.492
No. of Valid Cases	125		

Table 7: Household Budget Allocation & Gender

		Age			Total
		26-35 years	**36-45 years**	**46-55years**	
Budget Allocation	High	27	66	4	97
	Average	9	9	1	19
	Low	4	5	0	9
Total		40	80	5	125

Table 8: Chi Square Test

	Value	D. F.	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.105	6	.03
Likelihood Ratio	45.624	6	0.197
Liner-by Liner Association	.579	1	0.772
No. of Valid Cases	125		

Table 9: Household Budget Allocation & Income Levels (INR)

		Level of Incomes				Total
		Less than 5,000	**5,001-10,000**	**10,001-20,000**	**20,001 & above**	
Budget Allocation	High	2	18	46	17	83
	Average	0	9	13	7	29
	Low	0	5	6	2	13
Total		2	32	65	26	125

Table 10: Chi Square Test

	Value	D. F.	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.874	8	**.002**
Likelihood Ratio	34.845	8	0.132
Liner-by Liner Association	0.603	1	0.765
No. of Valid Cases	125		

Table11: Household Budget Allocation & Marital Status

		Marital Status		Total
		Single	Married	
Budget Allocation	High	8	78	86
	Average	11	16	27
	Low	6	6	12
Total		25	100	125

Table 12: Chi Square Test

	Value	D. F.	Asymp. Sig. (2-sided)
Pearson Chi-Square	32.158	8	0.301
Likelihood Ratio	45.325	8	0.503
Liner-by Liner Association	.523	1	0.486
No. of Valid Cases	125		

Multiple Regression

Multiple Regression, the statistical process has been used for estimating the relationship among the variables of the study. To measure how three major heads of expenses have an impact on the household budgets, the regression has been run.

Table13: Model Summary

Model	R	R^2	Adjusted R^2	Standard error of estimate	Change Statistics				
					R^2 Change	F Change	df_1	df_2	Sig. F Change
1	.657	.623	.617	71.76	.389	157.41	1	123	.000
2	.829	.947	.763	59.24	.405	129.07	3	121	.000

From Table 13, Model 1 is the first stage when food expenses have been used as predictor and in Model 2 the remaining two predictors have been put in use. The column R has represented the values of the multiple correlation coefficients between the predictors and the outcome. When only food expenses has been used as a predictor, it has resembled the simple correlation coefficients between predictor and outcome (.657). The next column R^2 shows the proportion of variability in the outcome as has been represented by the predictors. For Model 1 its value stands as .623, implying that food expenses contributed 62.3 percent of the variation in the outcome. With the inclusion of other predictors (Model 2), this value has increased to 94.7 percent, i. e. health care and education expenses have contributed 32.4 (94.7 – 62.3) percent. The adjusted R^2 has provided an idea of how well the model has generalized and it has provided support for its validity since

the values of R^2 and adjusted R^2 have very close proximity. In the change statistics, the significance of R^2 has been tested using F-ratio for each of the blocks. Model 1 has caused R^2 change from 0 to .657, and this change caused an increase in the F-ratio to 157.41, significant (p<.05). The addition of two predictors (Model 2) has caused R^2 to increase by .324. Using R^2_{change}, k_{change}= 3-1=2, the F change has been calculated as 129.07 which has significance (p<.001).

Table14: ANOVA Results

Model		Sum of Squares (SS)	d. f.	Mean Square [SS/d. f.]	F	Sig.
Model 1	Regression Residual Total	295896.18 915073.22 1210969.4	1 123 124	295896.18 7439.61	94.267	.000*
Model 2	Regression Residual Total	818365.12 516815.90 1335181.02	3 121 124	272788.37 4271.20	103.351	.000*

Predictor: (Constant), food expenses
Predictors: (Constant), food expenses, health care expenses, education expenses
Outcome: Household budgetary allocation

Table 14 has reported the analysis of variance (ANOVA) which tests whether the model is significantly better or not i.e., the F-ratio has indicated the ratio of improvement in the model fitness ability to judge the estimation. For Model 1 the F-ratio has been computed as 94.267, (p<.001) which in the second model, has increased to 103.351, highly significant (p<.001). Therefore, it has been concluded that the Model 1 has significantly improved its ability to influence, but in Model 2 such influence has been found even more significant and has evidence to reject $H_{02,}$ $H_{03,}$ and H_{04}. In other words, expenses for food, health care and education have significantly influenced household budgetary allocation.

Discussion

Factor analysis has identified six underlying constructs which have explained the sustainability in the competitive environment. High values for the factor loadings have indicated that the extracted items have statistical significance.

Table 15: Summary Results of Factor Analysis & Descriptive Statistics

No.	Name of the Factors	No. of items	Cronbach's Alpha Values	Mean	S. D.
1	Determinants of Expenses	6	.91	4.00	.89
2	Shopping Frequency	5	.84	4.01	.74
3	Spending Decisions	5	.89	4.02	.81
4	Food Expenses	5	.87	3.84	.91
5	Health Care Expenses	4	.86	3.69	.86
6	Education Expenses	3	.75	3.65	.86

To test the association with demographics of the respondents and their perceptions about the household budgetary allocation, Cross-tabulation have been used and the results have been documented that it has statistical significance hence H_{01} is rejected. To test the influence of food, health care and education expenses on household budgetary allocation, the study has employed multiple regression and the outcome have evidenced a statistical significance. Hence, all the three null hypotheses are rejected.

Conclusion

The purpose of the study is to report the association of demographics and household budgetary allocation and to assess the impact of different expenses on the latter. On reviewing the related studies four hypotheses with their null forms; items of the interview-schedule, a conceptual model has been framed. Using Cross–Sectional research design and questionnaire the study has collected data from 125 household heads (respondents) randomly chosen which subsequently has been processed using IBM SPSS-20. The items have been tested for their validity by a pre-test before its wider execution. The reliability test (Cronbach's Alpha) and sample adequacy test (KMO and Bartlett's test of Sphericity) have also been applied. The data dimension test (Factor analysis) extracted six factors, the hypotheses have been tested using different parametric tests and based on those results it has evidence to reject all the null hypotheses or, in other words, the research hypotheses have been accepted.

The study has attempted to measure the household budgetary allocation for meeting expenses on account of food, healthcare and education; and how such earmarking has been influenced by the gender of the head of the concerned households. In course of interview the respondents have unanimously pointed out the ill-effects of galloping inflation with meagre hike in income creating a litmus test like scenario for household budgets as expenses tend to exceed the income resulting in deficit and putting stress either on savings or resultant borrowings or even both. The need for increase in the quantum of buffer stock with specific focus on improvement in the public distribution system (PDS) especially during monsoon season is the need of the hour for taming the food inflation. The increasing expense on health care is the other major cause of concern for the respondents as most of them are either unaware or reluctant to take health insurance coverage and have confessed the vulnerability and only three respondents have taken term plan to minimise the threat of eventualities although many of them are the only earning member of family. With the advent of technology and faster life style changes, the parents have divulged to give their child not only the best possible education but also training in other extra curriculum activities such as fine arts, music, sports; resulting in decease in budget allocation for other heads of expenses. Moreover, saving for financing professional courses, wedding expenses especially for girl child and even for purchasing houses for their child have secured top priority for the responding parents. Respondents have shared that their savings are largely in public provident funds, insurance policies, fixed deposits and in Sukanya Samriddhi Accounts, instead of equities or even mutual funds as they want to protect their hardcore principals even if their returns are ranging anywhere in single digits. The study has vehemently indicated how the lower middle class households struggle with their static income against the monster like expenses and in many occasions the theory of Keynes fail as the balance budget produces side effects in the form of tensions, adjustments and conflicts in households.

Limitations of the Study

The academic audience of this research should consider a few limitations before its wider generalization. Firstly, survey respondents may not be representative of the entire households of the state. Secondly, the data collection tool, interview-schedule, has been self-developed in its design and contents, rather than adapted or adopted from any other established research work. Thirdly, in the line of the objectives, the household budgetary allocation has only been taken as the outcome and other variables have been excluded from the scope of the study. Fourthly, the sample size is low due to parsimony and time constraint. Fifthly, the statistical techniques applied for data analysis has their inherent limitations, which reduce the statistical power while drawing

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inferences. Finally, the accuracy of the results may not be entirely unbiased as the study has used the statistical tests based on the responses, which could rarely be unbiased.

Practical Implications

The outcome of the study has many implications both for households as well as for policy makers. Firstly, the significant influence of demographics on the household budgetary allocation has been reported e.g., men have the tendency of higher spending than the women household head. Secondly, the results have validated how food expense has occupied significant share in the budget and the respondents during interviews have also pointed out that such expenses are increasing year-on-year (y-o-y) basis at an exorbitant rates due to inflation, poor transportation system, adulteration, hoarding and black marketing at a large scale with lack of administrative control by the Food and Civil Supply Department of the state. Thirdly, the statistical result has validated that healthcare is one of the crucial head of expenses in household budget; but, most of the respondents have excluded health insurance and even term insurance coverage, creating an alarming scenario. They have expressed their grave concern on the pathetic public healthcare system of the state which has forced them to bank upon private nursing homes and doctors resulting in a strain on their budgets. Fourthly, the prominence of education expenses for households with secondary school going children has significant influence on the budgetary allocation. The respondents have unequivocally indicated the costly education in private schools and the indispensible requirement of private tuition for their children which has a reflection in households' budget. Fifthly, the research has indicated how food price hikes imbalance the household budget and the head of household should carefully chalk out the budget with provision for inflationary effect especially during monsoon and festive seasons and such increase in budgetary allocation, if possible should be month-on-month (m-o-m) basis instead of an annual exercise. Sixthly, literature has reported that financial literacy, significantly impacts the households' precautionary savings decisions and accordingly the policy makers should arrange more financial literacy awareness campaign to bring the uninsured population within the formal insurance system and the household head should take adequate health insurance coverage like family floaters for all the members beside taking coverage with Pradhan Mantri Suraksha Bima Yojana (PMSBY) and Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY). Seventhly, literature and the respondents have revealed that income uncertainty and emergency health care has significant impact on precautionary savings behaviour; the banks may design emergency health care cashless products in collaboration with health insurers and appropriate household budget allocation is the need of the hour. Eighthly, in this transition period to cashless society, the households should be encouraged to procure food items and other essentials from retail stores and big merchants using online payments to avail discounts to the extent possible. Ninthly, as far as costly education is concerned, the parents should diligently avail the different child plans, may consider systematic investment plans (SIPs) of mutual funds and may also consider some exposure in equities. Finally, the household head should perceive the relevance of budgets by creating adequate dedicated, funds for different heads of expenses and in true sense should strike a balance between income and expenditure - planned or emergent.

Future Research Roadmap

In any academic study, roadmap for future research is its integral part, the present study is not an exception. Future researches may be attempted to a wider scale by considering a larger study population, sampling frame, greater sample size, with additional variables, for investigating the impact of inflation on household budget, saving-expenses paradox, changing pattern of expenses,

role of technology on budget, precautionary saving and budgetary allocation, comparative studies on difference in expenditure patterns between single and dual earning households, between pensioners and self-employed, between nuclear and joint households. The study has used self administered schedule instead of adopting or adapting any recognised questionnaire from abroad and in future the same may be administered in Indian context to test the concurrent validity.

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Appendix-1
Schedule
Section – A

General Profile of the Respondents

(Please put tick mark in the applicable box, as applicable)

Name of the Respondent   :
Date of Birth (DD/MM/YYYY)   :
Contact No.   :
E-Mail ID (If any)   :
Gender   :   Male   ☐   Female   ☐
Marital Status   :   Married   ☐   Unmarried   ☐
Age Group   :   18 – 25 years   ☐
                                   26 – 35 years   ☐
                                   36 – 45 years   ☐
Educational Qualification   :   Under Matriculation ☐
                                   Higher Secondary   ☐
                                   Graduate   ☐
                                   Post-Graduate   ☐
Religion   :   Hinduism   ☐
                                   Muslim   ☐
                                   Christian   ☐
                                   Buddhism   ☐
                                   Other   ☐
Caste   :   General   ☐ SC ☐ ST ☐ ST ☐ OBC ☐
Occupation   :   Service   ☐
                                   Business   ☐
                                   Self-employed   ☐
Members in your family   :   3   ☐
                                   4   ☐
                                   5   ☐
                                   5 and above   ☐
Monthly Income   :   Less than INR 5,000   ☐
                                   INR 5,001 - 10,000   ☐
                                   INR 10,001 – 20,000   ☐
                                   INR 20,001 and above   ☐
Monthly Expenses on Food   :   Less than INR 3,000   ☐
                                   INR 3,001 - 5,000   ☐
                                   INR 5,001 – and above   ☐
Monthly Expenses on Health Care :   Less than INR 1,000

	INR 1,001 - 3,000 ☐
	INR 3,001 – 5,000 ☐
Monthly Expenses on Education :	Less than INR 1,000 ☐
	INR 1,001 - 3,000 ☐
	INR 3,001 – 5,000 ☐
Monthly Saving :	Less than INR 500 ☐
	INR 501 – 1,000 ☐
	INR 1,001 – 2,000 ☐
	INR 2,001 – 5,000 ☐
	INR 5,001 and above ☐

Section-B

Perceptions about the Outlining Household Budget

Please read each of the statements carefully and indicate your level of agreement or disagreement that you think is the best describing your perception about the motivating factors for precautionary saving. Indicate your response into 5-point Likert scales as: 1=strongly disagree, 2= disagree, 3= undecided, 4= agree, 5= strongly agree in the given box.

Statements	Score
There are differences in household decision making process across cultural group.	
More cooperative household purchase decisions are directly associated with higher levels of education and income.	
Married couples show a higher tendency towards automatic decision making.	
Within store total expenditures are influenced by the pricing and promotional activities of the retailer.	
A household in which both adults have full time employed us likely to have less time to shop and therefore make fewer trips.	
There is a positive relationship between family size and shopping frequency.	
Household headed by an individual above the age of 55 are likely to shop frequently.	
The frequency of shopping to increase with accessibility to stores.	
Household current income is a major determinant of the amount it spends on foods.	
Household expenditure positively related to number of adults.	
Purchase decisions of product are driven not just by material.	
Your choice of product is influenced to great extent by choices of others.	
As income increases families education spending increases.	
Women take better decisions with regards to children education.	
Household expenditure as a better proxy for the economic status of respective household.	
Easy access to all food plays an important role in your food purchases.	
The out of pocket payments constitute the single largest component of your total health expenditure.	
Nostalgia are said to influence your tastes and preferences.	
People with lower incomes spend more of their budget on food.	

Men play a major role in shopping activity.	
Women have tended to more concerned and involved in the children's education.	
Men consider the criterion of education expenses as important element in budget.	
You use a variety of mechanism to smooth health care expenses over time.	
The presence of children is expected to influence your food expenditure.	
Consumer with more education spent more on food away from home.	
As your income rises spending on health insurance rises.	
Wealthier households are more likely to spend on health care.	
You cannot predict the next period food prices based on the current period price information.	

Section C

Overall Perceptions

The last section of this schedule deals with the summary of your holistic overview about the items stated above. You are requested to follow the response style and mark your response category accordingly.

1. Demographics have significant influence in outlining Household Budget.

    Yes ☐ No

2. Food expenses have significant influence in outlining Household Budget.

    Strongly Disagree ☐   Disagree ☐   Undecided ☐   Agree ☐   Strongly Agree ☐

3. Health care expenses have significant influence in outlining Household Budget.

    Strongly Disagree ☐   D Disagree ☐   Undecided ☐   Agree ☐   Strongly Agree ☐

4. Education expenses have significant influence in outlining Household Budget.

    Strongly Disagree ☐   D Disagree ☐   Undecided ☐   Agree ☐   Strongly Agree ☐

Appendix-2

Statistical Measurements

Table 1: Reliability Statistics

Cranach's Alpha	Cranach's Alpha Based on Standardized Items	No. of Items
.820	0.729	32

Table 2: Sample Adequacy Statistics

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.761
Bartlett's Test of Sphericity	Approx. Chi-Square	1471.439
	d. f.	248
	Sig.	**.000**

Descriptive Statistics, Factor Loadings & Communalities

Table 1: Gender			
Gender	Male	Female	**Total**
No. of Respondents	93	32	125
Percentage	**74.4**	25.6	100

Table 2: Marital Statuses			
Marital Statuses	Married	Unmarried	Total
No. of Respondents	100	25	125
Percentage	80	20	100

Table 3: Ages				
Ages	26-35 years	36-45 years	46-55years	Total
No. of Respondents	40	80	5	125
Percentage	32.0	64.0	4.0	100

Table 4: Levels of Education					
Level of Education	Madhyamik	H. S. (+2 stage)	Graduation	Post-Graduation	Total
No. of Respondents	59	35	21	10	125
Percentage	47.2	28	16.8	8	100

Table 5: Religion					
Religions	Hinduism	Muslim	Christian	Buddhism	Other	Total
No. of Respondents	113	12	Nil	Nil	Nil	125
Percentage	90.4	9.6	Nil	Nil	Nil	100

Table 6: Caste				
Castes	General	Scheduled Caste	Scheduled Tribe	Other Backward Caste	Total
No. of Respondents	42	70	13	0	125
Percentage	33.6	56.0	10.4	0	100

Table 7: Occupation				
Occupations	Service	Business	Self employed	Total
No. of Respondents	49	48	28	125
Percentage	39.2	38.4	22.4	100

Table 8: Members in the Family					
Members in the Family	3	4	5	5 and above	Total
No. of Respondents	22	102	3	0	125
Percentage	17.6	81.6	2.4	0	100

Table 9: Monthly Income (in INR)					
Monthly Incomes	Less than 5,000	5,001-10,000	10,001-20,000	20,001 & above	Total
No. of Respondents	2	32	65	26	125
Percentage	1.6	25.6	52	20.8	100

Table 10: Monthly Food Expenses (in INR)

Monthly Expenses	Less than 3,000	3,001-5,000	5,001 & above	Total
No. of Respondents	7	49	69	125
Percentage	5.6	39.2	55.2	100

Table 11: Monthly Health Care Expenses (in INR)

Monthly Expenses	Less than 1,000	1,001-3,000	3,001 & above	Total
No. of Respondents	22	87	16	125
Percentage	17.6	69.6	12.8	100

Table 12: Monthly Education Expenses (in INR)

Monthly Expenses	Less than 1,000	1,001-3,000	3,001 & above	Total
No. of Respondents	13	88	24	125
Percentage	10.4	70.4	19.2	100

Table 13: Monthly Savings (INR)

Monthly Savings	Less than 500	501-1000	1001-2000	2001-5000	5001 & above	Total
No. of Respondents	4	4	32	83	2	125
Percentage	3.2	3.2	25.6	**66.4**	1.6	100

Factor Analyses

Factor 1- Determinant of Expenses

Items	Mean	S. D.	Factor Loading	Communalities
Nostalgia and tastes and preferences	4.65	.92	.844	.802
Reference group influence in choices	4.56	.86	.822	.741
Influence of current income	4.30	.94	.795	.831
Number of adults in the households	3.62	.89	.778	.693
Proxy for the economic status	3.50	.87	.735	.688
Influence of men	3.35	.90	-	-
Total (6 items)	4.0	.89		

Factor 1 has assigned the name of Determinants of Expenses which has explained 27.620 percent of the variables and includes six items with statistically significant factor loadings ranging from .844 to .735 and Cronbach's alpha is .91.

Factor 2- Shopping Frequency

Items	Mean	S. D.	Factor Loading	Communalities
Full time employment & number of shop trips	4.35	.85	.817	.644
Frequency of shopping and accessibility to stores	4.23	.77	.781	.688
Family size and shopping frequency	4.16	.79	.763	.773
Pricing and promotional activities of the retailer	3.79	.73	.733	.720
Old age people and shopping frequently	3.56	.60	.652	.622
Total (5 items)	4.01	.74	-	-

Factor 2 has assigned the name of Shopping Frequency which has explained 18.706 percent of the variables and has included five items with statistically significant factor loadings ranging from .817 to .652 and Cronbach's alpha is .84.

Factor 3- Spending Decisions				
Items	Mean	S. D.	Factor Loading	Communalities
Influence of culture in household decisions	4.42	.90	.768	.685
Purchase decisions	4.38	.56	.750	.622
Married couples and decision making	3.96	.84	.721	.562
Purchase decisions of product	3.73	.77	.688	.753
Women take better educational decisions	3.64	.99	.660	.664
Total (5 items)	4.02	.81	-	-

Factor 3 has assigned the name of Spending Decisions which has explained 15.448 percent of the variables and has included five items with statistically significant factor loadings ranging from .768 to .660 and Cronbach's alpha is .89.

Factor 4- Determinants Food Expenses				
Items	Mean	S. D.	Factor Loading	Communalities
Lower income and food expenses	4.23	.92	.763	.771
Easy access to all food	4.03	.88	.741	.722
Children in households and food expenses	3.88	.96	.715	.706
Next period price prediction not possible	3.64	.87	.689	.692
Food away from home	3.42	.93	.672	.640
Total (5 items)	3.84	.91	-	-

Factor 4 has assigned the name of Food Expenses which has explained 8.215 percent of the variables and has included five items with statistically significant factor loadings ranging from .763 to .672 and Cronbach's alpha is .87.

Factor 5- Health Care Expenses				
Items	Mean	S. D.	Factor Loading	Communalities
Affluent households and health care expenses	4.01	.88	.802	.831
Out of pocket payments	3.98	.93	.775	.706
Mechanism to smooth health care expenses	3.48	.78	.758	.691
Spending on health insurance	3.29	.86	.693	.632
Total (4 items)	3.69	.86	-	-

Factor 5 has assigned the name of Health Care Expenses which has explained 7.483 percent of the variables and has included four items with statistically significant factor loadings ranging from .802 to .758 and Cronbach's alpha is .81.

Factor 6- Education Expenses				
Items	Mean	S. D.	Factor Loading	Communalities
Income and education expenses	4.11	.88	.765	.831
Women's concern for children's education	3.47	.93	.709	.706
Major head in household budget	3.39	.78	.633	.691
Total (3 items)	3.65	.86	-	-

Factor 6 has assigned the name of Education Expenses which has explained 6.025 percent of the variables and has included three items with statistically significant factor loadings ranging from .765 to .633 and Cronbach's alpha is .759.

Authors' Profile:

Rajat Deb, Assistant Professor, Department of Commerce, Tripura University (A Central University), Tripura, India; did M. Com., MBA and is pursuing PhD in Accounting from the same institution. UGC-NET qualified and the recipient of three Gold Medals for top ranks in UG & PG examinations; stood First in HS examination in Commerce from Tripura State Board. He has 9 years teaching experience in PG courses, is an academic counselor and project guide of IGNOU programs, life member of six academic associations and has 28 publications including the journals of IIM-K, Amity University, NMIMS, ICA, IAA, SCMHRD and others.

Jaharlal Sarkar did his M.Com. from Department of Commerce, Tripura University and has attended a number of seminars and conferences.

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