
Relevance of Precautionary Saving Re-visited

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The study has attempted to report the motivating factors of households' precautionary savings, using cross-sectional research design through a survey with 125 samples from a locality of Tripura. The data gathered has been tested for its reliability and validity before the final execution. The empirical results have documented that gender and non-gender demographics have motivated to save for emergencies; quantum of liquid funds, income uncertainty and emergency health care. Policy relevance has drawn limitations and future research roadmap has also been sketched.

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INTRODUCTION

Households' saving for different emergent situations has identified in the studies as precautionary saving (Johnson & Widdows, 1985; Carroll, 1997) and has become research agenda since long past (Leland, 1968; Sadmo, 1970; Drèze & Modigliani, 1972). Literature has advocated three issues related to precautionary saving (Greninger, Hampton, Kitt, & Achacoso, 1996) viz. classification, calculation procedures and determinants; and such saving has earmarked on liquidity basis (Bhargava & Lown, 2006; Johnson & Widdows, 1985). Households assuming higher risks by channelizing funds in risky saving instruments make more provision in emergency funds than their comparatively risk averse counterparts (Bhargava & Lown, 2006; Bi & Montalto, 2004; Ding & DeVaney, 2000; Rodriguez-Flores & DeVaney, 2007) or those having adequate dedicated funds (Bi & Montalto, 2004). Studies have validated that precautionary saving generates in two situations i. e. due to labour income risk which arises in an uncertain condition of future non-capital income (Leland, 1968; Sandmo, 1970; Drèze & Modigliani, 1972; Kimball, 1990) and for interest-rate risk due to uncertain returns on invested funds (Hahn, 1970; Sandmo, 1970).

Review of related literature has documented that studies have attempted globally on multiple determinants of precautionary savings such as setting aside 3-6 months household expenses in liquid funds (Chang, Hanna, & Fan, 1997; Johnson & Widdows, 1985), subjectivity in creating such funds (Hatcher, 2000), status of employment (Rodriguez-Flores & DeVaney, 2007), other demographics e.g.,

age, education, marital status (Bi & Montalto, 2004; Chang & Huston, 1995; Chen & DeVaney, 2001; DeVaney, Anong, & Whirl, 2007), risk literacy (Lusardi & Mitchell, 2014; Lusardi, 1998) loss of job, health emergency or unprecedented exit of earner from the households (Dew & Xiao, 2011; McKernan, Ratcliffe & Vinopal, 2009; Mills & Amick, 2010). Studies have also reported that precautionary saving holds significant share in household wealth accumulation (Caballero, 1991; Carroll & Samwick, 1998). Again, few studies have indicated that growing coverage of social security schemes have reduced the importance of precautionary saving (Summers & Carroll, 1987; Zeldes, 1989), self-employed and sales professionals save less for emergency (Skinner, 1988) and there has no association between precautionary saving and hazardous nature of occupation (Skinner, 1988; Dynan, 1993). Although studies have carried out on precautionary saving mostly in abroad having different socio-economic scenarios, but literature is scant in India in general and in Tripura in particular. This deficiency in the existing body of knowledge has detected and this study has attempted to bridge that gap by contributing in the literature. The study has confined to the randomly selected respondents of Bodhjung Nagar locality of Tripura due to parsimony and time constraint.

The present study contributes in the literature of at least in five ways. Firstly, the results of inferential statistics have reported that demographics such as gender and different non-gender demographics significantly influence households' precautionary saving decisions, in line with concurrent validities such as positive correlation with age (Delmar & Davidsson, 2000), education (Zhu, 2006; Hughes, 2006), income (Amarapurkar & Danes, 2005; Aldrich & Cliff, 2003) and marital status (Caputo & Dolinsky, 1998). Secondly, the significant association between precautionary savings and liquid funds as reported by the study has conformity with prior studies (DeVaney 1995; Hutson & Chang, 1997; Greninger, Hampton, Kitt & Achacoso, 1996). Thirdly, earlier studies (Payne, Yorgason & Dew, 2014; Painter & Vespa, 2012; Schneider & Tufano, 2011; Lusardi,

2008) have documented that financial literacy has significant influence in the households' precautionary saving decision, which has also been documented by the present study. Fourthly, the results have also indicated about significant determinants of households' precautionary saving decision include income uncertainty, which has been identified in the literature as the starting point of precautionary savings (Chen, Meilke, & Turvey, 1999; Hubbard, Skinner & Zeldes, 1995; Guiso, Jappelli & Terlizzese, 1992; Skinner, 1988). Finally, the results have also pointed out that emergency health care as one of the catalyst of precautionary savings, in line with findings of prior studies (Wroblewski, 2007; Conley, 1999).

This study aims to report the motivators of precautionary savings.

The next Section, conceptual framework, explains the theoretical perspective on which the research hypotheses have developed. The Section 3 deals with methodology, Section 4 presents the results and discussion of the results has offered in Section 5. Finally the conclusion of the study has drawn in Section 6.

CONCEPTUAL FRAMEWORK & HYPOTHESES DEVELOPMENT

The prior studies have reviewed to frame the theoretical model and based on that the research hypotheses have been developed.

Gender and Precautionary Saving

Literature has documented that women lacking confidence and prefer risk-averse savings avenues (Byrnes & Miller, 1999; Deaux & Ennsuiller, 1994), use to save largely in lower volatility instruments (Lewellen, 1975; Chow & Riley, 1992; Jianakoplos & Bernasek, 1998; Sunden & Brian, 1998), has a stronger preference for precautionary savings than men (Jelinek & Schneider, 1998). So, it has been hypothesised that:

H₁: Gender influences precautionary saving.

Non-Gender Demographics and Precautionary Saving

Literature has indicated about the influence of non-gender demographics toward precautionary savings behaviour like positive attitude by youths (Danzinger, Van der Gaag, Smolensky & Taussig, 1982; Hurd, 1987, 1990; Guariglia & Rossi, 2002; Yao, Wang, Weagley & Liao, 2011; Friedline & Song, 2013), by level of education [Davis & Schumm, 1987; Hefferan, 1982]; like graduates (Kumbhar, 2011; DeVaney, Anong & Whirl, 2007), depends on levels of income (Burbridge & Robb, 1985; Avery & Kennickell, 1991; Bosworth, Burtless & Sabelhaus, 1991; Browning, 1995; Browning & Lusardi, 1996; Lusardi, 2003; Mohammed, 2012) and on marital status (Cohn Lewellen, Lease & Schlarbaum, 1975; Xiao & Noring, 1994; Masson, Kremers & Horne, 1994). Thus, the second hypothesis has set as:

H₂: Non-gender demographics influence precautionary saving.

Liquid Funds and Precautionary Saving

Studies has documented that a number of low-income families do not create any liquidity provision to tackle unforeseen misfortunes which lead them to financial fragile and high interest debt-trap (Lusardi, Schneider & Tufano, 2011; Bianchi & Levy, 2013). Studies have also reported that households with low-income but moderate liquid funds can smoothly tackle the hardships during rainy days (Mckernan et al. 2009; Mills & Amick, 2010) and the quantum of such liquid amounts depend on household's three to six months income or expenditure (DeVaney 1995; Hutson & Chang, 1997; Greninger et al. 1996) and the of paucity of such liquid funds which has earmarked as threshold point of poverty (Brandolini, Magri & Smeeding, 2010; Gornick, Sierminska & Smeeding, 2009; Haveman & Wolff, 2004; McKernan et al. 2009). Hence it has been hypothesised that:

H₃: Holding of liquid funds influence precautionary saving.

Financial Literacy and Precautionary Saving

Financial literacy has been shown to be positively correlated with a number of important household financial behaviour's, such as precautionary savings, this places financial literacy at the Centre of a broad national discussion about consumer financial protection (Hastings, 2013) and household financial security (Lusardi, Schneider & Tufano, 2011; Klawitter, Anderson & Gugerty, 2013; Lusardi, 2008; Painter & Vespa, 2012; Payne et al. 2014). It has hypothesised that:

H₄: Financial literacy influences precautionary saving.

Income Uncertainty and Precautionary Saving

The literature has documented that the analysis of precautionary saving commences with income uncertainty (Skinner, 1988; Guiso et al. 1992; Hubbard et al. 1995) and greater uncertainty leads to higher amount of precautionary saving (Kazarosian, 1997; Lusardi, 1997; Carroll & Samwick, 1995). In contrast a study has concluded that income uncertainty has marginal impact on the precautionary saving motive (Guiso et al. 1992). Hence the study has hypothesised that:

H₅: Income uncertainty influences precautionary saving.

Emergency HealthCare and Precautionary Saving

The literature has validated the need of precautionary saving and its necessities in households' health care emergencies (Kennickell, & Moore, 2006; Bucks, Sherraden, 2005; Haveman & Wolff, 2004; Conley, 1999; Oliver & Shapiro, 1995). So, it has hypothesized that:

H₆: Emergency health care influences the precautionary saving.

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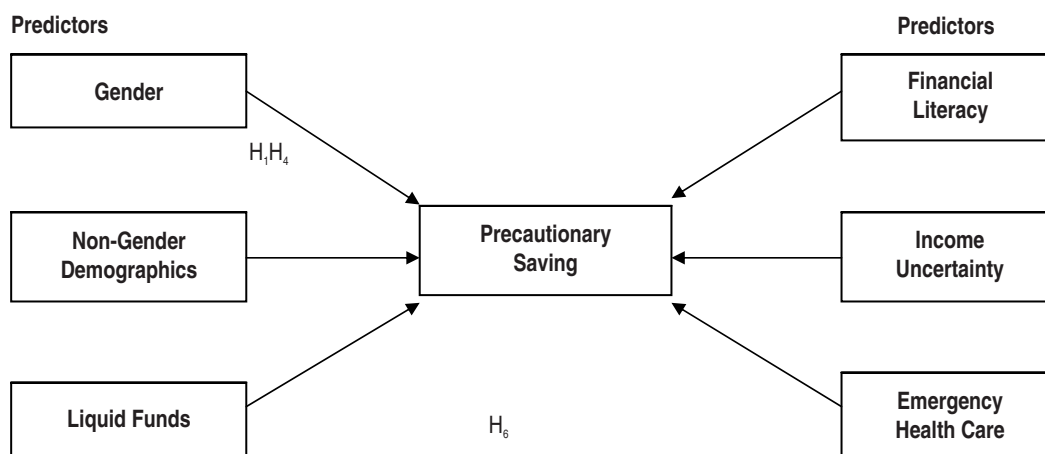


Fig. 1: Conceptual Model of Precautionary Saving of Households.

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

Methodology

Research methodology is the approach of conducting the research process, whereas research methods are those techniques and procedures which are used to acquire and analyse the data. This section has designed in the following sub heads.

Research Design

Cross-Sectional Research Design has used to assess the determinants of precautionary saving. The study is Cross Sectional (survey) as it has carried out at a particular point of time (during January-December, 2017). Survey approach has used as it intended to obtain a broad and representative overview of a situation (Fisher, 2007) as well as to produce quantitative estimates about the studied population based on the statistical tests on the samples (Pinsonneault & Kraemer, 1993).

METHODS

Schedule Development

An interview-schedule has used as a tool to data collection since people are reluctant to give truthful answers to the questions that invade their privacy (which are confidential and sensitive in nature), for

example, discussing personal finances (Churchill, 2001; Malhotra, 2005). The items in the schedule has developed in the following ways:

Firstly, A University digital library sources has accessed especially the academic e-journals of prominent publishers with the key words such as precautionary saving, emergency fund, financial planning, financial wellness, household expenditure survey and have downloaded 100 relevant papers. Thereafter those papers extensively have reviewed to generate a 57-items inventory.

In the second stage, a pre-test is carried out with 57 items based using a randomly selected sample size of 30 respondents to check for clarity of items, relevance, order and completeness as recommended by Zikmund & Babin (2012). The outcome of pre-test has reduced the number of items to 50, which is retained for the final survey. Items exceeding alpha value over and above .5 has considered for the final study. The alpha values of pre-test (28 questions on Likert scale) computed as:

.679, .687, .657, .697, .654, .655, .677, .675, .649, .657, .718, .688, .653, .699, .650, .639, .669, .637, .686, .688, .653, .658, .668, .704, .649, .709, .626, .681.

Finally, the 50-items scale developed from the pre-test has administered to a large sample. Literature has reported that a balance should be maintained between the length of the schedule and the response rate (Dillman, 1978) and the study has maintained the same.

Sampling Design

Firstly, all the households of Bodhjung Nagar having precautionary saving have assumed as the study population as it is difficult to know the exact number, the study could not use the sampling frame. It has approached randomly selected 136 respondents from the households to voluntarily participate in the study of which 125 households have given their nod. The eventual sample size falls within the Roscoe's (1975) rule of thumb, which has advocated for taking any sample size between 30 and 500 for social science research; also have supported by researchers (Tabachnick & Fidell, 2013; MacCallum, Widaman, Zhang & Hong, 1999; Green, Tull & Gerald, 1999; Bryant, & Yarnold, 1995; Kahneman & Tversky, 1972).

Data Collection Design

A. Primary Data

A cover letter containing attitudinal, behavioural, factual, demographical and closing instructions has used as suggested by Dillman, (1978). Firstly, a rapport has established with the selected respondents and the purpose of the study has briefly explained to them so as to get reliable response (Oberhofer & Dieplinger, 2014). A close ended pre-coded schedule with a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5) has used since it facilitate in coding, tabulation and in data interpretation (McDaniel & Gates, 2010; Hair, 2010). The respondents have requested to fill up the items of the schedule carefully and doubts have clarified whenever requested and they also have been assured about maintaining anonymity (Jobber,

1985; Oppenheim, 1992). To eliminate the risk of non-comprehension and ambiguity problems, on request, the study has translated the items of the schedule into vernacular language (Bengali) as suggested by Peytchev, Conrad, Couper & Tourangeau, 2010.

B. Secondary Data

Different academic and professional journals, books, conference papers, magazines, and web has accessed as secondary data sources.

Variables

The variables of the study have categorized as predictors which include selective demographics, liquid funds; financial literacy, income uncertainty, emergency health care; the outcome –precautionary saving decision and the Confounding - influence of referral group members.

Significance Level

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

Data Analysis Strategy

The data collected through schedule has further processed by using IBM Statistical Package for Social Sciences (SPSS)-20. Research questions have addressed either through simple descriptive statistics (modes, means and standard deviations) or through inferential statistics (One sample t-test, Cross tabulation, Pearson's Correlation analysis, Simple and Multiple Regression analyses). Since the primary objective of Factor Analysis has to cluster the items into few relevant factors (Mitchellmore & Rowley, 2013; Ho, 2006), the study has used Principal Component Analysis (PCA).

Choice of Tests

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

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Tests	Measurement	Variables				Purposes	Null Hypotheses
		Predictors	No.	Outcome	No.		
Independent Sample t-test	Nominal	Gender	1	Precautionary Saving	1	To know the relationships among the variables.	H ₀₁
Cross Tabulation	Nominal (Categorical)	Non-Gender Demographics	5	Precautionary Saving	1	To predict the impact of two predictors on one outcome.	H ₀₂
Pearson's Correlation	Interval	Liquid Funds	1	Precautionary Saving	1	To measure relationships between two variables- predictor and an outcome.	H ₀₃
Simple Regression	Interval	Financial Literacy	1	Precautionary Saving	1	To predict the impact of a predictor on one outcome.	H ₀₄
Multiple Regression	Interval	Income Uncertainty & Emergency Health Care	2	Precautionary Saving	1	To predict the impact of two predictors on one outcome.	H ₀₅ , H ₀₆

Rationale for Statistical Tests

Tests	Type	Rationale
Independent Sample t-test	Parametric	Interval Data, linearly related, Sample size (n)>30, sampling distribution is bivariate and normally distributed.
Cross Tabulation	Joint Probability Distribution	Random sample, independent observations, mutually exclusive rows and columns, variable categories that include all observations, large expected frequencies.
Pearson's Correlation	Parametric	Interval Data, linearly related, Sample size (n)>30, sampling distribution is bivariate and normally distributed.
Simple Regression	Parametric	Interval Data, linearly related, sample size (n)>30, sampling distribution is multivariate normally distributed.
Multiple Regression	Parametric	Interval Data, linearly related, sample size (n)>30, sampling distribution is bivariate and normally distributed.

Instrument Validation

The statistical tests has provided different types of validities such as internal (based on findings), construct (the items has measured hypotheses), content (items has been able to measure the research questions), concurrent (results correlate with prior researches) and conclusion (generalization of findings is possible based on statistical evidence). To

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

RESULTS

Descriptive Statistics

Descriptive/sample statistics summarize the raw data obtained from the samples. The study has used mode, mean and standard deviations to represent the sample data. It has reported that majority of the respondents are men (69.6 percent), married (82.40 percent), aged between 26-35 years (51.20 percent), educated up to H. S. level (44.80 percent), Hindus (64 percent), scheduled caste (49.6 percent), in service (70.4 percent), have 4 members in the family (33.6 percent), earn INR 0.01-0.020 million per month (40 percent), while save in the tune of INR 0.002-0.005 million per month (36.8 percent), deposit less than 5 per month (77.6 percent), mostly deposit in the second week (63.2 percent).

With respect to Importance of Precautionary Savings Factor, mean values are: Average Mean=3.90, S. D. =.82. Mean score for items range from 3.08 to 4.79, excluding the reversed score item negative income shocks. In regard to Demographics & Precautionary Saving Factor, mean values are: Average Mean=4.02, S. D. =.89. Mean score for the items has ranged from 3.87 to 4.21. The mean values of Uncertainty-Precautionary Saving Spiral Factor are: Average Mean=4.07, S. D. =.87. Mean score for items range from 3.94 to 4.22. With respect to Financial Literacy Factor, mean values are: Average Mean=4.04, S. D. =0.86. Mean score for items have ranged from 3.98 to 4.14. The mean scores for Financial Market Factor have: Average Mean=4.26, S. D. =.92. Mean score for items are ranged from 4.76 to 4.15. The mean scores for Personal Attitudes & Precautionary Saving Factor have: Average Mean=3.67, S. D. =.97. Mean score for items are ranged from 3.44 to 4.25 excluding reverse scored item low impenitence and relative prudence.

Factor Analysis

A total of 125 respondents have been asked questions on 28 key items related to their saving

behaviour and their strategy for sustainability. The reliability is checked using Cronbach's alpha, which computed as .741. Cronbach's alpha is used in to assess the degree of consistency between multiple measurements of a variable (Hair, 2005).

The Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy (MSA) computed as .768, exceeding the recommended value of 0.6, which indicates that the data is adequate for factor analysis (Kaiser & Rice, 1974). The overall significance of correlation metrics is tested with Bartlett Test of Sphericity (approx. Chi square=1471.439 and significance at .000) provides support for validity of the Factor analysis of the data set. A small value less than .05 of significance level is recommended suitable for the study (Kline, 1994). Eigen values are used to determine the number of factors to be extracted. Since Eigen values of 1 or greater than 1 are considered to be significant (Ho, 2006), all other factors are discarded. The Eigen value or latent root is the sum of squared values of factor loadings relating to a factor (Krishnaswami & Ranganathan, 2007). Communalities show the total amount of variance, the original variable shared with all the other variables has included. Single item factors were also excluded from the analysis from the standpoint of parsimony (Lawson-Body, Willoughby & Logossah, 2010).

From Table 1, the Eigen values which have the variances of the factors that have been extracted by using PCA method. Six factors have extracted whose Eigen value is greater than 1, as they explain nearly 88.105 percent about the total variables taken into account. This percentage of the variance has regarded as sufficient to represent the data (Pett, Lackey & Sullivan, 2003). An Eigen value of 1.00 is the most common used criterion for deciding among the factors. Varimax rotation, an orthogonal rotation which is commonly used, as it tries to maximize the variance of each of the factors in such a way that the total amount of variance accounted for has distributed over the six extracted factors.

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Inferential Statistics

Inferential statistics imply numerical techniques for drawing conclusions about the study population based on the information obtained from the randomly chosen samples from that study population.

Independent Sample t-test

To test whether respondents' gender has an influence in precautionary saving (H01), Independent Sample t-test is carried out and the following procedure has adopted. Descriptive Statistics (Means and S. D.) scores for the two sub-groups-men and women have computed in Table 2. In addition, the standard error (S.D. of sampling distribution) of men is 0.052 ($0.48501/\sqrt{87}$) and that of women has found 0.075. From Table- 3, t-test has used in order to test the hypothesis. For this data the

Levene's test has found to be statistically non-significant as ($p=.393>.05$) and the study read the top row labelled 'Equal variances assumed'. Here, two tailed value of p has computed as.03 which is less than .05 hence it may be sum up that there is a significant difference exist between men and women in their perceptions about in holding of precautionary saving. Therefore, the null hypothesis H01 has rejected, i.e. it has unlikely to have come about by random error when sampling from a population have defined by H01 and the study likely to accept the alternative hypothesis.

Cross Tabulations

To know the relationships between demographics and precautionary saving Cross Tabulations and Chi-square tests is carried out. The findings obtained has summarised in Table 4:

Table: 1 Factors extracted through PCA <i>(Factors: Importance of Precautionary Saving, Demographics& Precautionary Saving , Uncertainty – Precautionary Saving Spirals, Financial Literacy, Financial Market and Personal Attitudes &Precautionary Saving)</i>									
Components	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	6.986	29.586	29.586	6.986	29.586	29.586	5.459	23.121	23.121
2	2.925	22.390	51.976	2.925	12.390	41.976	2.430	10.293	33.414
3	2.221	19.406	71.382	2.221	9.406	51.382	2.379	10.076	43.490
4	2.135	9.042	80.424	2.135	9.042	60.423	2.653	11.237	54.727
5	1.943	4.229	84.653	1.943	8.229	68.652	1.900	8.047	62.774
6	1.561	3.452	88.105	1.334	4.259	72.911	1.242	3.194	65.968

Extraction Method: Principal Component Analysis.

Table: 2 Group Statistics of Respondents					
	Gender	N	Mean	S. D.	Std. Error of Mean
Decision about making precautionary saving	Men	87	1.368	0.48501	0.052
	Women	38	1.290	0.45961	0.075

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Table: 3 Independent Sample t-test

	Leven's test		t-test statistics					95% confidence interval of the difference	
Decision to make precautionary saving	F	Sig.	t	d. f.	Sig. (2-tailed)	Mean Diff.	S. E. Diff.	Lower	Upper
Equal variances assumed	3.35	0.70	.844	123	.400	.07834	.0928	-.105	.2621
Equal variances not assumed	-	-	.862	74.20	.392	.07834	.0909	-.103	.2594

Table: 4 Summary Results of Cross Tabulations*

Variables		Results		
Non-Gender Demographics (Predictors)	Precautionary Saving (Outcome)	Pearson Chi-Square Value	Likelihood Ratio	Significance Value**
Age	Precautionary Saving	26.874	34.845	.000
Levels of Education	Precautionary Saving	33.451	46.765	.000
Occupation	Precautionary Saving	28.665	37.157	.000
Levels of Income	Precautionary Saving	39.105	45.624	.000
Marital Status	Precautionary Saving	32.158	41.328	.000

*Authors' calculations, ** $p < .05$

The age of the respondents and their precautionary saving decisions are related in a way that lower the age, higher the tendency for precautionary saving. The increasing responsibility on the family side also influences the savings behaviour of the households. The Pearson's Chi-Square value is 26.874 and the Likelihood Ratio is 34.845. Further, the significance value is .000 ($p < .05$), which indicates that there is a significant association exist between the variables; likely provides support to reject H_{02} .

The respondents' level of education and their precautionary saving decisions are related in a way that higher the level of education, higher the tendency for precautionary saving. The findings may be attributed that since the households are getting higher education, their intention to holding of precautionary saving increases. The Pearson's Chi-Square value is 33.451 and the Likelihood Ratio is 46.765. Further, the significance value is .000 ($p < .05$), which indicates that there is a significant

association between the variables; likely provides support to reject H_{02} .

The respondents' occupation and their precautionary saving decisions are related in a way that service holders save more for emergent situations than others. The Pearson's chi-square value is 28.665 and the Likelihood Ratio is 37.157. Further, the significance value is .000 ($p < .05$), which indicates that there exists a significant association between the variables; likely provide evidence to reject H_{02} .

The respondents' income level and their precautionary saving decisions are related in a way that higher the income level, higher the inclination for precautionary saving. The Pearson's Chi-Square value is 39.105 and the Likelihood Ratio is 45.624. Further, the significance value is .000 ($p < .05$), indicates a significant association between the variables; likely supports to reject H_{02} .

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The respondents' marital status and their precautionary saving decisions are related in a way that higher the number of single respondents, higher the inclination for precautionary saving. The Pearson's Chi-Square value is 32.158 and the Likelihood Ratio is 41.328. Further, the significance value is .000 ($p < .05$), which documents a significant association between the variables, likely supports to reject H_{02} .

Pearson Correlation Analysis

On the basis of correlation analysis (Table: 5) between liquid funds of the respondents and their decision for precautionary saving has found a significant relationship ($r = .016$, $p < .05$). It is likely that the predictor extracted has significant indicator of outcome and has provided support to likely reject H_{03} . In other words, holding of liquid funds likely have an influence in the precautionary saving decision.

Regression Analysis

Regression analysis is a statistical process which has used for estimating the relationships among the variables in a study.

From Table 6 for the given data, R has a value of .511 and since there is only one predictor, this value represents the simple correlation between the predictor and the outcome. The value of R^2 is .441, which indicates that financial literacy explains 41.1 percent of the variation in precautionary saving decision. There might be other factors that could explain this variation, but this model, which has included a single predictor, can explain approximately 44 percent of the variation in the outcome. Therefore, there may be other predictors which influence the outcome.

Table 7 reports an analysis of variance (ANOVA), which tests whether the model is significantly better in predicting the outcome than using the mean as a best guess. The summary table shows the various sums of squares and the degrees of freedom associated with each. From these two values, the average sums of squares (the mean squares) can be calculated by dividing the sums of squares by the associated degrees of freedom. The F -ratio is 97.159, which is significant at $p < .05$ (since the value in the column labelled sig. is less than .05). So, it may report the model results as [$F(1, 123) = 301573.102$, $p = .000$].

Table 5: Correlations between Liquid Funds and Precautionary Saving	
Precautionary Savings	r
Holding Liquid Funds	.016*

* $p < .05$

Table: 6 Model Summary ^a				
Model	R	R^2	Adjusted R^2	Standard error of estimate
1	.511 ^a	.441	.432	60.18

^a Predictor : (Constant), Financial Literacy

Table7: ANOVA ^b Results					
Model	Sum of Squares (SS)	d. f.	Mean Square (MS) [SS/d. f.]	F	Sig.
Regression	301573.102	1	301573.102		
Residual	825780.482	123	6713.66	97.159	.000*
Total	1148984.157	124	9266		

^b Outcome Variable: Precautionary Savings

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The results has pointed out that there is less than a .05 percent chance that F-ratio and it would happen if the null hypothesis is true. So, the study may conclude that the regression model overall predicts the households' precautionary saving decisions significantly and likely may get support to reject H_{04} .

In order to examine the extent to which the income uncertainty and health care emergency affect the households' precautionary savings decision, the study has run multiple backward regression method. The data is further utilized in regression for validation. Both the factors has found to be significant and considered as predictors of the outcome.

From Table 8, Model 1 is the first stage in the hierarchy when only income uncertainty has used as predictor. Model 2 is referred when both the predictors has put in use. The column R represents the values of the multiple correlation coefficients between the predictors and the outcome. When only

income uncertainty has used as a predator, it resemble the simple correlation coefficients between predictor and outcome (.622). The next column R^2 has showed the proportion of variability in the outcome as represent by the predictors. For Model 1 its value stand as .606, this implies that emergency health care accounted for 60.6 percent of the variation in the outcome. With the inclusion of other predictor (Model 2), this value has increased to 91.8 percent. So, if income uncertainty accounts for only 60.6 percent, it may be concluded that health care emergency accounted for an additional 31.2 (91.8 – 60.6)percent. The adjusted R^2 has provided an idea of how well the model generalizes and as per norm the study would predict its value to be the same or very close to R^2 . In this model the difference is negligible (.05 percent) which reveals that the model has derived from the study population rather than a sample. In the change statistics, the significance of R^2 has tested using F-ratio for each of the blocks. Model 1 has caused R^2 changes from 0 to.606,and this change in the amount of variance raise to an F-ratio

Table 8: Model Summary

Model	R	R ²	Adjusted R ²	Standard error of estimate	Change Statistics					Durbin-Watson
					R ² Change	F Change	df1	df2	Sig. F Change	
1	.622 ^a	.606	.585	62.53	.439	172.33	1	118	.000	1.908
2	.817 ^b	.912	.903	51.86	.448	111.68	2	117	.000	

Table 9: ANOVA^a Results

Model	Sum of Squares (SS)	d. f.	Mean Square [SS/d. f.]	F	Sig.
Regression	372251.43	1	372251.43		
Model 1 Residual	871578.11	123	7086	96.587	.000*
Total	1119857.25	124			
Regression	785215.20	2	392607.60		
Model 2 Residual	927812.15	122	8014.85	107.185	.000*
Total	1713027.35	124			

a. Predictor: (Constant), Income Uncertainty

b. Predictors: (Constant), Income Uncertainty, Emergency Health Care

c. Decision to made precautionary Saving

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of 172.33, which is significant with a probability less than .001[since the study has one predictor(k) and sample size=125].

The addition of new predictor (Model 2) has caused R^2 to increase by .306. Using R^2_{change} , $k_{\text{change}} = 2-1=1$, the F_{change} is calculated as 111.68 which is again significant ($p < .001$). This increase indicates about the difference cause by adding new predictor in Model 2. The Durbin-Watson statistic shows whether the presumption of independent errors is justifiable and in the model it has computed as 1.908, which is close to 2, has met the assumption.

Table 9 reports the analysis of variance (ANOVA) which has tested whether the model is significantly better in predicting the outcome or not. Specifically, the F-ratio represents the ratio of the improvement in prediction that results from fitting the model, relative to the inaccuracy which might exist in the model. For Model 1 the F-ratio is computed as 96.587, which is most unlikely to have happened by chance ($p < .001$). For the second model, the value of F has increased to 107.185, which is also highly significant ($p < .001$). The study draws the conclusion that the Model 1 has significantly improved the ability to predict the outcome variable, but the Model 2 (with extra predictor) is even better (as the F-ratio was more significant) and likely it has get support to reject H_{05} & H_{06} , i.e., the research hypotheses has accepted. In other words, income uncertainty and emergency health care influence the precautionary saving of households.

DISCUSSION

Factor analysis has identified six underlying constructs which has explained the determinants of households' precautionary savings. High values for the factor loadings and the communalities have indicated that the items extracted are statistically significant. PCA has also facilitated data reduction for the study. Table 10 presents the summary of the Factor analysis and Descriptive Statistics.

The outcome of Independent sample t-test has validated in favour to probably reject the first null hypothesis (H_{01}) that gender of the respondents has an influence households' precautionary saving decision and it has statistical significance. The association (i.e., different from no relationship) with non-gender demographics of the respondents and their decision to hold precautionary saving has tested using Cross-tabulations and the results has documented that it has statistical significance hence the study likely to reject H_{02} ; in other words, alternative hypothesis has accepted. The association between liquid funds and precautionary saving has tested using Pearson's Correlation and the result has documented that it has statistical significance; hence it likely to reject H_{03} . To measure the strength of relationships between financial literacy (predictor) and the decision for precautionary saving (outcome), the fourth hypothesis (H_{04}) has tested using Simple Regression method and based on the finding the study has evidence to probably reject H_{04} .

Table10: Summary Results of Factor Analysis & Descriptive Statistics

Sl. No.	Extracted Factors	Included Items	Cronbach's Alpha Value	Mean Value	S. D. Value
1	Importance of Precautionary Saving	5	.89	3.90	.82
2	Demographics and Precautionary Saving	6	.84	4.02	.89
3	Uncertainty-Saving Spiral	5	.87	4.07	.87
4	Financial Literacy	3	.81	4.04	.86
5	Financial Market	4	.90	4.26	.92
6	Personal Attitudes and Precautionary Saving	5	.77	3.67	.97

The fifth hypothesis has tested using Multiple Regressions to measure the strength between income uncertainty, emergency healthcare and the decision to hold precautionary saving, and based on the findings the study has likely rejected the null hypotheses. To sum up, the findings has shown that number of factors which motivated the respondents to make precautionary saving.

CONCLUSION

The study has undertaken to unearth the attributes of households' precautionary saving. Adopting Cross-sectional research design, primary data has collected by survey (interview-schedule)during January-May, 2016 from randomly selected 125 respondents which, subsequently has processed through IBM SPSS-20.The data set has tested for its validity, reliability and sample adequacy. The data dimension test (Factor analysis) has extracted six factors viz. importance of precautionary savings, demographics and precautionary saving, uncertainty-savings spiral, financial literacy, financial market and personal attitudes and precautionary saving. The hypotheses of the study has been tested using different parametric tests and based on the results it has likely get evidence to reject all of them, or in other words, the research hypotheses likely have found to be true.

The study is not flawless and it duly acknowledges the same. Firstly, sample respondents might not be the proxy of the whole study population. Secondly, in the line of the objectives, only impressing factors for holding of precautionary saving has considered and other variables have excluded from the scope of the study, which has confined the generalization of the findings. Thirdly, the choice of Bodhjung Nagar locality of West Tripura as study area due to parsimony and time constraint might be another shortcoming of the study to generalize the findings. Fourthly, it has considered a lower sample size and the validity of the results rely on the responses, which perhaps may not be flawless. Finally, the different statistical techniques which have used have

their own limitations which might restrict the generalization of the outcome of the research.

The results of the study have shown that demographics significantly influence the precautionary savings. As the study has documented that gender has significant impact. As income and education levels have positive correlation with precautionary savings which, may be used by banks and other financial institutions for designing more short term liquid instruments to attract the potential savers (customers).The results has reported that financial literacy, significantly impact the households' precautionary savings decisions and accordingly the policy makers should arrange more financial literacy awareness campaign to bring the unbanked population within the formal banking system and to improve their customer bases as well as bottom lines. Moreover, the findings have also reported income uncertainty and emergency health care have significant impacts on precautionary savings behaviour; the banks may design emergency health care cashless products in collaboration with health insurers which may attract more inflow of liquid cash equivalents. The households may use the study report in drawing their household financial planning by creating adequate dedicated funds for emergent situations as its importance has highlighted in the study.

In future, researches may be attempted in a larger scale by considering a larger study population, sampling frame and greater sample size covering households from entire parts of Tripura to validate the influencing factors of household precautionary savings. Further, comparative studies between multi-dimensional short term banking products, across cities, districts and states may also be carried out. Research may address the impact of religious affiliation, influence of referral groups, caste traditions on precautionary savings. Moreover, perception studies may be attempted having research questions covering loopholes of short term saving instruments in the context of emergency saving funds.

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