Border Fencing and Saving-Spending Pattern: Evidence from Agartala

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Abstract

The study has motivated to assess the impacts of border fencing on the saving-spending patterns. Reviewing the related literature it has framed three hypotheses and adopting a cross-sectional study design with Convenience sampling technique, 112 respondents have been chosen and a survey has been conducted in Akhaura land customs station locality of Indo-Bangla border area of Agartala. The interview-schedule prior to the survey has been pre-tested with randomly chosen 30 respondents for assessing its reliability and validity. Significant statistical results have supported to refute all the null hypotheses and it has concluded selective demographics impact savings; construction of fencing has affected socio-economic status and saving-spending patterns of the borderland population. It has acknowledged few limitations, indicated policy implications and has sketched the roadmap for future research.

Keywords: Border fencing, savings, survey, inferential statistics.

JEL classification: C83, E26, G02, H31.

1. Introduction

Literature has validated in delve studies have so far been attempted on the informal cross-border trade (hereafter ICBT) in its scope and dimensions [e.g., wildlife trade in different parts of the world due to lean border monitoring (Haas & Ferreira, 2015), agricultural products (Streloke, 2018), movements of varying ranges of products from China to Hong Kong (Wan et al. 2016) and between India and Bangladesh (Pohit & Taneja 2003; Sikder & Sarkar, 2005)]. The prominence of ICBT in the concerned countries' economies have also been documented (Neef, 2002; Egbert, 2006) even though in its essence it has been referred as the 'excluded trade' from the scope of the general administration (Thuen, 1999), notwithstanding it has been carrying out with the social interactions with parties involved (Castells & Portes, 1989) and in parallel to the formal trade (Laatz & Klima, 1995). Interestingly, ICBT has been embedded with formal trade (Round, Williams & Rodgers, 2008), taking place without formal documentations (Estrin & Prevezer, 2010), rather on mutual trusts (Portes & Haller, 2005); has transformed as a source of livelihood (Neef, 2002) and has been identified as an avenue for profit-making brisk business (Duchene & Neef, 1998). Historically, ICBT has been taking place in an 'open market' having no legal basis for prolonged period (Laidler & Lee, 2014), evading taxes (Lesser & Moise-Leeman, 2009; Titeca & Kimanuka 2012) and lengthy official formalities (Afrika & Ajumbo, 2012), fuelled by multiple economic policy aspects (Yu, 2004), substantial price differences of necessities and electronic goods (Chan & Chong, 2013) and even curbing the galloping inflation (Chan, 2012) along with strong kinship network accessibility (Aker et al. 2014). Further, inasmuch the ICBT has remained unreported, tantamount to smuggle or grey market, where illegal products have been traded (Tiemann, 2005), hence researchers have inadequately addressed the issue (Maruyama & Trung, 2010). Scholars have been in consensus and have indicated its few inherent features e.g., the predominance of women (Titeca & Kimanuka, 2012; Brenton, Gamberoni & Sear, 2013), variety of trading

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products especially food staffs, garments and electronic goods (Lesser & Moise-Leeman, 2009) and even though substantial number of participants have been economically relatively better off, breaking the fallacy of being underprivileged (Brenton, Gamberoni & Sear, 2013) but, highly vulnerable to multiple challenges including physical torture and sexual exploitations (Saana Consulting, 2015).

Breaking the stigma of 'land lockedness' and moving to 'land linkedness' (Maiti, 2002; Dutta & Bayes, 2004), the North East Region (NER) has likely to explore the huge potential of trade with the South East Asian countries (Das, 2000; Islam, 2011; Gogoi, 2014). Interestingly, The Indo-Bangla formal trade from Tripura has been quite different in terms of commodity compositions and directions in compared to other states of the NER (Dutta, 2014), even though the export basket of both the countries have been remained almost similar (Basu & Datta, 2007); but, that of Tripura and Bangladesh unlikely has been remained similar and favourable (Guha & Mahapatro, 2016). Scholars have acknowledged the gravity of parallel informal trade of the NER with neighbouring countries i.e., Bangladesh, Myanmar and Bhutan (Das, 2000; Bezbaruah, 2007). Literature has validated the ICBT has been carried out in twin manners viz., bootleg smuggling and technical smuggling, where the former has indicated smuggle of small quantum of goods e.g., sugar (Garry Pursell, 2007) by a large number of people especially women while the latter has implied different variants of corruptions like under-invoicing and paying bribes to concerned custom officials (Chakraborty, 2009). Coincidently, as the current study has attempted to assay the impacts of border fencing on saving-spending pattern of the respondents, it has addressed the erstwhile economic benefits which had been deduced from the bootleg smuggling. Literature has conceded physical state enclosure has become crucial for protecting the sovereignty and to curb the cross-border infiltrations (Doty, 2007; Salter, 2008; Latham, 2010) notwithstanding it has unlikely to become the panacea (Banerjee, 2010). The Indo-Bangla border fencing has reflected the global common border demarcations phenomenon such as larger trends of enclosure, integrated check posts and joint border vigil (Bigo, 2007); and such fencing has holistic impacts engulfing socio-economic-cultural-political and bilateral relations (van Schendel, 2005; Pant, 2007; Jones, 2009), even though the fencing has been sporadic (Datta, 2000). The journey of informal to more formalized trade resulting policy executions like border fencing and creation of one stop border posts have yielded with mixed outcomes e.g., significant decrease in the employment rates of unskilled and semi-skilled manual labourers in African continent (Tyson, 2018), human right violations (Noorani, 2003), has become lean circumvent for trespassers (Shashikumar, 2009) in Indo-Bangla border areas even though, optimistically scholars have been argued the bilateral regional, demographic and social prolonged pending issues would likely be resolved after the completion of fencing (Roy, 2012).

Marketing and Economics literature has conceded households as rational decision making units (Becker, 1965; Blattberg et al.1978) as the quantum of their current incomes and spending on food have been positively associated (Houthakker & Taylor, 1970; Prais & Houthakker, 1971) notwithstanding in varying degrees with the presence of children (Benus, Kmenta & Shapiro, 1976). Further, household decisions have also been influenced by other demographics such as age, family structure, education and employment levels (Sinha, 2012; Hou & Ma, 2013). The paradox of household income-consumption-saving and house prices have been studied in delve and scholars have indicated the house price fluctuations have significant influence on the household savings (Engelhardt, 1996) and consumption behaviours (Bostic, Gabriel & Painter, 2008). Household spending on the life insurance has been positively correlated with income levels (Nesterova, 2008) but inversely with inflation level (Outreville, 1996); whereas that of for health insurance has positive correlation with multiple demographics including income levels (Chakrabarti & Shankar, 2015) and tax incentives (Kumar, 2014). The importance of educating Indian girl children has been validated by scholars (Chanana, 2007; Government of India, 2008) and the uniqueness of Sukanya Samriddhi Yojana-a dedicated scheme for girl child launched in 2015 under the tag line beti bachao beti parao (save and educate girl child) have also been reported in the context of Tripura (Deb, 2016a). Literature on Indo-Bangla cross border trade and border fencing have been attempted extensively e.g., [economic and trade relations (CPR, 1995; Acharya & Marwaha, 2012), trade related joint ventures

(Bhattacharyya & Pal, 1998), trade in services (Rahman, 2000), informal trade (Pohit & Taneja, 2003), causes and remedies of trade imbalances (Rahman, 2005), cross-border problems (Das, 2006; Raju, 2016), trade patterns applying the purchasing power parity theory (Alam et al. 2009), border fencing and community responses (Bhattarai, 2013), challenges and solution of cross border trade (Rather & Gupta, 2014; CUTS International, 2014), fencing and changing security challenges (Ghosh, 2011; Dabova, 2014; Saddiki, 2016), developing production network (De & Majumder, 2014) and skewed cross-border trade patterns of NER (Guha & Mahapatro, 2016)]. The strand of studies have exhibited that notwithstanding multiple facets of the bilateral trade and border demarcations have been studied, but literature likely has been in deficit in addressing the impacts of border fencing on the saving-spending pattern of the impacted population and the current research has motivated to close the identified research gap based on the empirical evidence.

The contribution of the study towards literature likely has to be stated at least in four ways. Firstly, the study probably the first one in Indian context which has assessed the impacts of border fencing on saving-spending patterns of the affected population and has conceded significant impacts of border fencing based on empirical evidence. Secondly, it has validated the significant influence of demographics on saving decisions, in line with literature but has not traced any aggressiveness by youth, in contrast with few studies (Kasilingam & Jayabal, 2009). Thirdly, it has documented significant changes in the socio-economic status of the affected people especially women who have been forced to change their livelihood from bootleg smuggling to formal avenues such as by enrolling under the Mahatma Gandhi National Rural Employment Guarantee Act (MGMNREGA) scheme. Fourthly, it has reported how the excessive spending on foods, garments and luxuries during pre-fencing timeline has been reduced substantially. Furthermore, post constructions of fencing the respondents have changed their spending in multiple purposes such as on the life and health insurance premiums, children education and on real estate. Finally, it has validated the art of disciplined personal finance as respondents have been saving in formal channels and borrowing by accessing banking services instead of exclusively borrowings from the multiple informal channels.

The study has motivated to assess the impacts of Indo-Bangla border fencing on the saving-spending patterns of the adjunct population of Akhaura land customs station area of Agartala.

The reminder of the paper has been designed as in Section 2 hypotheses have been set, research methodology has been elaborated in Section 3, statistical results and discussion of those results have been presented in Section 4, in Section 5 the conclusion of the study, in Section 6 study limitations, in Section 7 practical implications of the findings and finally in Section 8 the future research directions have been presented.

2. Hypotheses

The study has reviewed the related literature to frame the hypotheses for executing the study.

2.1 Demographics and Savings

2.1.1 Gender

Scholars have documented gender has varying degrees of influence on saving decisions e.g., women likely to save more for post-retirement due to longer longevity (Huberman, Iyengar & Jiang, 2007; Deb & Chavali, 2009) in risk averse instruments (Byrnes & Miller, 1999; Deo & Sundar, 2015); while men have saving preference for retirement and children (Berggren Birkeland, 2013; Deb, 2016). Oppose to these in three north-eastern Indian states viz. Nagaland, Mizoram and Meghalaya no such gender influence have been traced (Filipiak & Walle, 2015) while few researches have contradicted and have conceded women have less inclination towards saving (Fisher, 2010).

2.1.2 Age

Aggressive saving attitudes by Indian youth have been reported in literature (Kasilingam & Jayabal, 2009) while globally safer instruments have been preferred by older people (Hurd, 1990; Guariglia & Rossi, 2002).

2.1.3 Marital Status

Household joint saving decisions have become new research agenda (Bateman & Munro, 2005; de Palma et al. 2011) for specific purposes such as for retirement corpus (Johannisson, 2008; Nelson, 2014), retirement timings (Dew & Yorgason, 2010) and even simply for opening a bank account (Cole, Sampson & Zia, 2009).

2.1.4 Income Levels

Literature has pointed out high income individuals have lower saving tendencies but have more diversification in designing saving portfolios (Browning & Lusardi, 1996; Lusardi, 2003). Moreover, income uncertainty (Hochguertel, 2003) and marginal propensity to save (Bime & Mbanasor, 2011) have significant impacts on household savings.

2.1.5 Education Levels

Literature has validated positive impacts of education levels on saving decisions (Lusardi & Mitchell, 2014; Calcagno & Monticone, 2015). Further, financial literacy also has significant positive influence on household savings (Jariwala, 2013; Deuflhard, Georgarakos & Inderst, 2015, Deb, 2016b). So, it has been hypothesized that:

H1: Demographics significantly influence saving decisions.

2.2 Fencing and Social Impacts

The planning for Indo-Bangla border fencing has been started in early 1960s when the then Assam government had insisted to depot Bangladeshi people (Hazarika, 2000; Joseph & Narendran, 2013) and eventually in 1986 India has started the fencing work (Datta, 2000), as a part of its border management strategy to protect its sovereignty (McDuie-Ra, 2012). The gravity of Indo-Bangla ICBT has been conceded in literature (Pohit & Taneja, 2003; Das & Pohit, 2006; Chakraborty, 2009) and the construction of fencing has been treated as another economic barrier for the borderland people which they had to overcome (Sammadar, 1998) even though bilateral formal trade has increased after the formation of the South Asia Free Trade Area (SAFTA) in 2004 (Bhattacharyay & De, 2005). Scholars have reported every year substantial number of Bangladeshi people illegally have been migrating to India for socio-economic and cultural purposes (Panda, 2008) which have created social problems including smuggling and have necessitated for construction of the border fencing (Shamshad, 2013). Accordingly, it has set the hypothesis as:

H2: Border fencing significantly influences the socio-economic status.

2.3 Border Fencing and Household Spending

Research has reported household incomes have been split into spending on food, grocery, clothing, education, transportation, healthcare, life insurance and entertainment-amusement including saving, in line with multiple discrete continuous extreme value (MDCEV) model (Bhat, 2005) and its extension (Pinjari & Bhat, 2010). A positive association between expenditure on food and family size has been documented with corresponding decrease in the utilities and other housing spending with given amount of income levels (Ferdous et al. 2010). The spending on expensive clothing, higher education, luxurious items, delicious foods and transportation likely to enhance with double source household incomes (Thakuriah & Liao, 2005; Ferdous et al. 2010); while the decision to buy a car has also been influenced by presence of children (Bhat & Sen, 2006). In contrast, few studies have concurred high income households likely to spend in less proportions on healthcare, utilities, food, personal care and on transportation; rather have higher tendency towards multiple saving instruments (Dynan, Skinner & Zeldes, 2004). Moreover, spending on healthcare, child education, nutrition and food likely to have depended on which of the spouses have control over the incomes (Duflo, 2003) and in patriarchal society like in Tripura men have dominance in the household decisions. Studies have indicated substantial hike in fuel prices likely to have negative impacts on household transportation spending resulting changes in vehicle compositions and on car pooling along with two-wheeler accessibility (Li, von Haefen & Timmins, 2008; Bento et al. 2009). The strand of studies have indicated household spending has been depended on income levels and construction of Indo-Bangla border fencing in Akhaura land customs (LCS) locality likely to have significant impacts on the saving-spending patterns of the adjunct population and accordingly the present study has hypothesized that:

H3: Border fencing significantly influences saving-spending decisions.

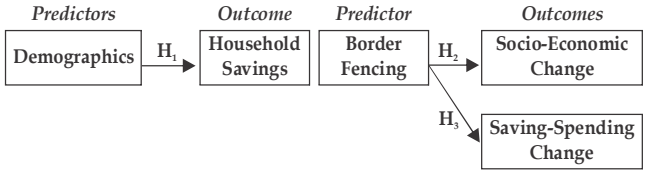

Fig. 1: A Conceptual Model of Indo-Bangla Border Fencing Impacts Study

In Figure 1, a conceptual model has designed wherein demographics (predictors) likely to have significant influence on the household saving decisions (outcome). Furthermore, Indo-Bangla border fencing (predictor) would probably to have brought significant changes in the socio-economic status as well as saving-spending patterns (outcomes) in compared to the period when such fencing was not constructed.

3. Methodology

The overall approach followed for conducting the study has been termed as methodologies which have incorporated the following sub-sections:

3.1 Research Design

It has adopted Cross-Sectional study design and the survey has been executed during February-August, 2018. The study design has been followed to access its inherent benefits such as ease in quantifications (Pinsonneault & Kenneth, 1993; Fisher, 2010).

3.2 Methods

Data collection and analysis technique has been referred as a method which has been split as under.

3.2.1 Schedule Development

Since respondents have been reluctant in answering personal finance related questions (Charchil, 2001), it has adopted a self-administered interview-schedule to unearth the impacts of border fencing on saving-spending pattern. The schedule has been framed in few steps viz. firstly, by applying few relevant words around 129 research papers, 6 study reports and 12 expert opinions published in four English business newspapers have been downloaded. Secondly, by reviewing the materials 60-items inventory in nominal scale have been prepared. Thirdly, the tool thereafter has been assessed by a pre-test with 30 randomly selected respondents for assaying its order and language, in tune with literature (Zikmund & Babin, 2012). Based on the Cronbach alpha score benchmark of .5 and above (Nunnally, 1978) 54 items have been retained. Finally, the survey has been conducted.

3.2.2 Sampling Technique

The adjunct population of Akhaura LCS of Indo-Bangla border of Agartala has been assumed as study population. The enumerator has conducted the survey in the Joypur locality and has randomly chosen 112 respondents, i.e., by applying Convenience (non-probability) sampling technique. The sample size has been oscillating within the adequate range of 30 and 500 as social scientists have recommended (Roscoe, 1975; Isreal, 2013).

3.2.3 Data Collection Design

3.2.3.1 Primary Data

The schedule has five sections, Section I has comprised of 12 questions addressing general and demographic details, Sections II and IV have 14-pairs nominal type questions each for assaying the perceptions about impacts of fencing on socio-economic aspects before and after construction of the fence. Similarly, Section III & V have 13-pairs nominal type items each addressing the impacts of fencing on saving-spending pattern before and after the construction of fencing. The enumerator has used a cover letter containing user-friendly instructions to answer the questions and items, in line with the advices of the scholars (Dillman, 1978) and has translated the items into local language (Bangla), has explained the technical terms, whenever requested to arrest the risk of non-comprehension (Peytchev et al. 2010). Moreover, he has assured the respondents about strict adherence with data collection ethicality.

3.2.3.2 Secondary Data

The primary source has been included the original research papers accessed from an Indian central university digital library INFLIBNET Soudh Sindhu list of subscribed journals and the papers published by prominent publishers such as Sage, Emerald, Springer, Elsevier and Wily. The secondary sources have been included expert opinions and study reports. Tertiary sources has covered Google Scholar, Research Gate and Social Science Research Network (SSRN) which have been duly accessed for assaying the strand of studies on the research problem.

3.2.4 Data Analysis Strategy

For data processing and analysis it has applied IBM-Statistical Package for Social Science (SPSS)-20. Further, Microsoft Excel & Strata have also been partially run.

Table 1: Study Variables*

Predictors	Outcomes	Extraneous
Demographics	Saving	Peer-Group Influences
Border Fencing	Socio-Economic Changes	
	Saving-Spending	

*authors' compilation

The study parameters have been presented in Table 1 where predictors likely to have influence on the outcomes when the extraneous variable has been controlled.

3.4 Significance Level

The significance level (α) for statistical tests has set at 5% i.e., 95% confidence level has been presumed.

3.5 Statistical Tests

The preference and rationality for statistical tests have been summarized in Tables 2 & 3 respectively.

Table 2: Choice of Statistical Tests*

Tests	Variables						Objectives	Null Hypotheses
	Predictors			Outcomes				
	Name	Measurement	No.	Name	Measurement	No.		
Ordered Regression	Demographics	Nominal (2 or more types of Categorical) Nominal (Categorical)	5	Savings	Nominal (Categorical)	1	To predict the saving decisions based on the value of five predictors.	H01
Dependent Paired sample t-test	Border Fencing	Nominal (2 types of Categorical)	2	Socio-Economic Changes, Savings-Spending	Nominal (Categorical)	1	To Compare the mean of the differences between two related groups on the same dependent variable.	H02, H03

Table 3: Assumptions Hold for Selected Statistical Tests**

Tests	Type	Rationale
Ordered Regression	Parametric	Outcome has been measured on continuous level (interval data), two predictors each are measured on continuous level (interval data), linearly related, independence of observations, sampling distribution has been normally distributed with sample size (n)>30, there is no multicollinearity problem as well as any significant outlier with the data set.
Paired Sample Dependent t-Test	Parametric	Nominal Data, linearly related, Sample size (n)>30, sampling distribution is bivariate and normally distributed.

**authors' compilation

3.6 Research Validities

Research validity has been referred as a right measure, i.e., the truthfulness of the findings (Hashim, Murphy & O'Connor, 2007) about the extent of the capability of a research instrument which has intended to measure the research questions (Robson, 2011). Different types of research validities have been tested e.g., the internal (based on inferential statistical results), construct (data collection tool i.e., the interview-schedule and the hypotheses have been set to measure the research question), contents (items have addressed the study objectives), concurrent (findings have correlated with literature) and conclusions (sample based statistical results have generalized to the study population).

4. Findings & Interpretation

4.1 Descriptive Statistics

Respondents' general information has been collected in nominal scale and have been summarised in mode. It has reported lion's share of the respondents are men (88.4 percent), in the age group of 35-34 years (47.3 percent), married (67.86 percent), educated up to matriculations (69.6 percent), general in caste (84.8 percent), self employed (51.8 percent), having monthly income in the tune of INR .010001-.025 mn (57.1 percent), total monthly spending in the tune of INR .009001-.02 mn (48.2 percent), monthly savings INR up to .01 million (50.9 percent), monthly spending for food staffs INR .005 mn (52.7 percent), monthly healthcare spending up to INR .001 mn (50.9 percent) and monthly spending on education up to INR .001 mn (64.3 percent).

4.2 Inferential Statistics

Appropriate numerical techniques have been applied to test the null hypotheses for estimating the probable behaviour of the studied population.

4.2.1 Ordered Regression

Ordered logistic regression has been used to predict the statistically significant impacts of the predictors on an ordinal outcome, i.e., to test H01. Scholars have conceded that if the assumptions of the ordered logit model are met, then all of the corresponding coefficients (except the intercepts) should be the same across the different logistic regressions, other than differences caused by sampling variability hence referred to as the parallel lines or parallel regressions assumptions (Williams, 2006).

Iteration 0: log likelihood = -370.60264
Iteration 1: log likelihood = -358.605
Iteration 2: log likelihood = -358.51248
Iteration 3: log likelihood = -358.51244
Iteration 4: log likelihood = -358.51244

No. of observations = 112
LR $chi^2(4)$ = 28.65
Prob > chi^2 = 0.0000

Log likelihood = -198.357

Table 4: Ordered Logit Estimates*

Savings	Coefficient	SE	z	p>|z|	95% CI	
Gender	.0167	.0009	18.55	.000	.01910	.01523
Age	.1645	.0127	12.95	.000	.1423	.1945
Marital status	.1057	.0145	7.28	.001	.02783	.0268
Income Levels	.2478	.0143	17.32	.000	.0245	.0892
Education Levels	.0811	.0077	10.53	.000	.0198	.07830

*primary data

From Table 4, in the output above, at iteration 0, a null model, i.e., the intercept-only model has been fitted. It then has moved on to fit the full model and has stopped the iteration process once the differences in log likelihood between successive iterations have become sufficiently small. The final log likelihood (-358.51244) has been shown again, which would be used in comparisons of nested models. The Log likelihood of the fitted model has been used in the Likelihood Ratio Chi-Square test to assess whether all the predictors' regression coefficients in the model have been simultaneously zero and in tests of nested models. The Likelihood Ratio (LR) in the Chi-Square test has referred that at least one of the predictors' regression coefficient is unlikely equal to zero in the model. The number in the parenthesis has indicated the degrees of freedom of the Chi-Square distribution used to test the LR Chi-Square statistic and has been defined by the number of predictors in the model. The LR Chi-Square statistic can be calculated by -2*(L (null model) – L (fitted model)) = -2*((-212.683) – (-198.357)) = 28.652. Prob > Chi^2 has been referred the probability of getting a LR test statistic as extreme as, or more so, than the observed under the null hypothesis; the null hypothesis is that all of the regression coefficients in the model are equal to zero. It has implied the probability of obtaining this chi-square statistic (28.65) if there is in fact no effect of the predictor variables. The small p-value from the LR test, <.05, has provided evidence to conclude that at least one of the regression coefficients in the model is not equal to zero (Long & Freese, 2006; Naderi, 2002). The coefficient column has implied that for a unit increase in the predictors how much corresponding change would taken place on the outcome. The first predictor gender would likely to increase in the z-score in favour of savings by .0167 points. Similarly, saving would be increased by .1645, .1057, .2478 and .0811 points respectively for a unit increase in the remaining four predictors. The standard interpretation of the ordered logit coefficient is that for a one unit increase in the predictor, the response outcome level is expected to change by its respective regression coefficient in the ordered log-odds scale while the other variables in the model are held constant. The SE has referred the standard errors of the individual regression coefficients. They have been used in both the calculation of the z test statistic and the confidence interval of the regression coefficient. The next columns, z and p>|z| have been referred as the test statistics and p-value, respectively, for the null hypothesis that an individual predictor's regression coefficient is zero given that the rest of the predictors are in the model. The test statistic z has indicated the ratio of the coefficient to the standard error (SE) of the respective predictor. The z value has followed a standard normal distribution which has been used to test against a two-sided alternative hypothesis that the coefficient is not equal to zero. The probability that a particular z test statistic is as extreme as, or more so, than what has been observed under the null hypothesis has been defined by p>|z|. The z test statistic for the predictor gender has been computed as (.0167/.0009) 18.55 with an associated p-value of 0.000. The study has set the alpha level to .05, hence likely fail to reject the null hypothesis and has to conclude that the regression coefficient for gender has not been found to be statistically different from zero in estimating the saving behaviour, given remaining predictors in the model. The z test statistic for the predictor age (.1645/.0127) has been computed as 12.95 with an associated p-value of .000. Hence it would reject the null hypothesis and has to conclude that the regression coefficient for age has been found to be statistically different from zero in estimating the saving behaviour given remaining predictors in the model. Similarly, the z test statistic and associated p-values for the remaining three predictors have been computed which have indicated likely to reject the null hypotheses and the study probably to conclude that the regression coefficient for these three predictors-marital status, income levels and education levels have been found to be statistically different from zero in estimating the saving behaviour given remaining predictors in the model. The final column, 95% Confidence Interval (CI) for an individual regression coefficient given the other predictors are in the model. For a given predictor with a level of 95% confidence, the study would conclude that, it has been 95% confident that the true population regression coefficient would lie in between the lower and upper limit of the interval.

Table 5: Pseudo R-Square*

Cox and Snell	.473
Nagelkerke	.561
McFadden	.649

*primary data

Table 6: Pseudo R-Square*

Model	-2 Log Likelihood	Chi-Square	Sig.
Current Model	488.750	78.179	0.720
General Model	443.673		

*primary data

From Table 5, the Pseudo R2 has referred as McFadden's pseudo R-squared which have estimated from the Ordered logit model has a high level of goodness of estimates and the predictors used in the model have described a large proportion of changes in the outcome. The goodness of fit statistics has indicated that the model is fitted much better than the location only model. Hence, the model with 2 factors in logit link has been treated as a good model, as scholars have concurred (Yatskiv& Kolmakova, 2011).

From Table 6, the rationality for the hypothesis of equality of parameters in all the categories of the estimated models has been computed. Considering the significance level of the Chi-square statistic in parallel regression test, it has assumed that the value of the status parameters for all answer groups are the same and fixed and so the estimation of the ordered logit model has been strongly based, in line with literature (Long & Freese, 2014).

Table 7: Indicators of Goodness of Estimates*

Statistic	Chi Square	Significance Level
Pearson	480.509	.347
Deviance	394.601	.995

*primary data

From Table 7, the Goodness of Estimates has incorporated Pearson and Deviance tests with the null hypothesis of good estimation of the data by the model, so the Chi-square statistic computed by these tests should confirm the validity of the null hypothesis, in line with advices of the scholars (Oksuzler, 2008). Considering the significance level of calculated Chi-square, the data has been estimated properly by the model. Based on the significant results the study has likely to conclude about the reliability of the model. Finally, the findings of the Regression test have been correlated with literature as far as the influence of these predictors on the outcome has been concerned (Lusardi, 2003; Deb & Chavali, 2009).

4.2.3 Dependent Paired Sample t-Test

To compare the mean difference (rather difference between means as for independent t-test) of the respondents' perceptions about the socio-economic status before and after the border fencing construction as well changes in saving-spending behaviours before and after fencing, it has applied Dependent Paired sample t-tests. 14-paired items of Sections-II & III for addressing the former one and 13-paired items of Sections-IV & V for the latter have been compared to test H02 & H03 respectively.

Table 8: Paired Samples Statistics (For Socio-Economic Status)*

Pair	Items	Mean	N	Std. Deviation	Std. Error Mean
1	Illegal trade was the main source of livelihood. (B)	1.24	112	.430	.041
	Quantum of illegal trade has reduced substantially. (A)	1.26	112	.440	.042

*primary data

Table 8 has reported the Descriptive Statistics, for the 1st pair the mean difference for before fencing (B) has been computed as 1.24 and that of after fencing (A) as 1.26. The standard error of mean differences has been computed as (SE=s/$\sqrt{}$ n) the standard deviation (s) of the samples divided by square root of the sample size (n) which have been calculated as .041 and .042 respectively. Adopting the same procedures for rest of the pairs' descriptive statistics have been worked out.

Table 9: Paired Samples Test (For Socio-Economic Status)*

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	SD	SE of mean	95% CI of the difference				
				Lower	Upper			
Pair 1	-.018	.615	.058	-.133	.097	-.307	111	.0426

*primary data

From Table 9, the first column has represented the mean difference between the socio-economic status of the respondents before and after the border fencing for 1st pair item of Sections II & III, which has calculated as -.018. The 2nd and 3rd columns have represented standard deviations and standard error of means. The test statistic't' has been computed by dividing the mean by the SE of mean resulting as -.307. The degrees of freedom (df) have been calculated as 111 (n-1) as the same respondents have shared their perceptions about the items before and after the border fencing constructions. The rationality for applying the df has to compute the exact probability that a given value of 't' probably to occur if the null hypothesis is likely to be true (that is to say, there is no difference between mean values before and after fencing construction scenarios). The probability has been presented in final column titled as 'sig', which, by default has implied two-tailed probability since the study has not fixed any direction of the movement of the group differences. The computed sig. value likely has been emerged as significant (p=.0426, p<.05) and it has probably to conclude that respondents' perceptions about socio-economic changes have more significant influences in the post fencing construction scenario than pre fencing construction period. The 95% confidence interval (CI) for mean differences has indicated the boundary limits within which the true mean values probably to lie i.e., within -.133 and .097. Similarly, the sig. values of remaining 13-paired items have been calculated as (.046, .048, .044, .016, .045, .0480, .036, .044, .049, .647, .038, .034 and .042). The findings have pointed out significant probability values between the mean differences of the perceptions before and after the construction of border fencing except for 11th pair which has asked about the preferred saving instruments. Finally, based on the majority of the significant results it has likely to reject H02 and has to conclude that border fencing has significantly influenced the socio-economic status. To test H03 it has repeated the aforesaid procedures and the descriptive statistics and paired sample t-test results for the first pair have been exhibited in Tables 10 & 11 respectively.

Table 10: Paired Samples Statistics (For Socio-Economic Status)*

Pair	Items	Mean	N	Std. Deviation	Std. Error Mean
1	Spending on food was mostly exorbitant. (B)	1.24	112	.419	.039
	Spending on food items have fallen substantially. (A)	1.24	112	.430	.041

*primary data

From Table 10, the descriptive statistics, the last column the standard error of mean for first pair of item (food expenses) has been computed as .039 and .041 respectively before and after the fencing construction. In corollary the values for remaining 12 pairs have been computed.

Table 11: Paired Samples Test (For Socio-Economic Status)*

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	SD	SE of mean	95% CI of the difference				
				Lower	Upper			
Pair 1	.000	.615	.058	-.115	.115	.000	111	.046

*primary data

From Table 11, the computed sig. value likely to has emerged as significant (p=.042, p<.05). Similarly the sig. values for rest of the 12-pairs have been calculated as (.032, .048, .048, .447, .034, .044, .045, .038, .047, .048, .633, .021 and .040). Interestingly, for 11th pair item which has asked whether the practice of borrowing from mahajans (informal lenders) has witnessed any changes after the construction of fencing has produced an insignificant value (p=.063, p>.05). Based on these it has likely to reject the H03 and has to conclude that border fencing has significantly influenced the saving-spending decisions of the borderland population.

Most of the respondents in course of personal interviews have divulged some interesting facts notwithstanding initially they were reluctant to entertain the enumerator on the presumption he has been collecting data on behalf of the government. Inasmuch the enumerator being a local resident, has been succeeded in convincing them as it was an academic study and they were finally agreed to participate voluntarily. Thereafter he has approached 120 respondents of which 8 have unfortunately turned down his request resulting the eventual sample size has been fixed at 112. Notwithstanding the participants have given their consent to responses, but a few of them initially were hesitating to share their saving details but, the enumerator has assured them about his strict adherence to data collection and analysis ethicality, and has successfully convinced them that individual responses would be merged in the total and in no way the responses would be accessible to others; moreover, these would be kept under lock and key. The prima facie negative attitudes about personal finance aspects were expected as literature has reported how respondents try to avoid their personal finance related questions hence personal interviews have been identified as a better tool for unearthing the truth (Mack & Ryan, 2006). The majority of the respondents have unequivocally expressed how their income levels, living standards and saving-spending patterns have been significantly impacted in a negative manner after the border fencing. The traders have complained about substantial downfall in their revenues and resulted profits since the Bangladeshi customers no longer visit their outlets. The women participants have aggressively alleged

that their desire to become self-dependent have been ruined as they have been bound to depend partially on their husbands and other male members of their families and only for few months in a year they have been working as a labourer under MGMNREGA scheme. The land disputes have also been identified as a major issue after the construction of the fencing. Further, they have informed their spending on expensive foods, luxuries and garments have been reduced significantly; but, post-fencing they have been spending on their children's education, healthcare; have enrolled under life insurance schemes, have started saving for retirements, in gold and in other formal avenues even though saving in chit fund schemes have also been highlighted. Surprisingly, the borrowings from informal sources have been continued even after the construction of the fencing and simultaneously many of them have been planning to construct their homes hence approaching banks for home loans.

5. Conclusion

The study has attempted to assay the impacts of Indo-Bangla border fencing on saving-spending patterns of the borderland population of the Akhaura land customs station locality of Agartala, the capital city of Tripura. Through extensive review of prior studies it has framed three hypotheses and a conceptual model for executing the study. Adopting cross-sectional research design with survey strategy and applying Convenience sampling technique data has gathered from 112 respondents. The interview-schedule has been pre-tested with randomly chosen 30 respondents for assessing the appropriateness of the words and order of the items before the execution of the final survey. The results of Kaiser-Meyer-Olkin (KMO) (for sample adequacy) and Bartlett's Test of Sphericity (matrix is not an identity matrix if having significant chi square output) have indicated the reliability (a good measure) and validity (a right measure) of the schedule respectively. The results .699 and .695 have comfortably exceeded the threshold limit of .6, as suggested by scholars (Kaiser & Rice, 1974). Ordered Regression has been applied to assess the impacts of selective demographics on household saving decisions and significant results have indicated likely to reject H01 and it has to accept the research hypothesis. The impacts of border fencing on the socio-economic status and on the saving-spending patterns have been tested by running Dependent pair sample t-test where the respondents' perceptions on the stated items have been assessed before and after the fencing construction situations. It has compared the mean differences of the pre and post fencing scenario and has gathered significant evidence based on which it has likely to reject H02 and H03 i.e., in other words, the corresponding research hypotheses probably be accepted. The findings of the study have indicated few interesting aspects apart from the significant impacts of selective demographics on the saving behaviour of the sample respondents. The socio-economic impacts of Indo-Bangla border fencing in the life of the affected population of Akhaura LCS have revealed macroeconomic policy issue which could be tested in other border areas of the country. On the flip side, from the respondents' perspective, it has pointed out substantial decrease in the informal trade volume after the construction of fencing which has negatively impacted the household financial behaviour, a common phenomenon as witnessed in other parts of the world. The women likely been adversely affected mostly inasmuch they have been forced to restrain from the informal trade and have become dependent on the male members of their families for their livelihood. The fencing has also influenced the saving-spending avenues as most of the respondents have concurred post-fencing period significant changes have been taken place in their household finance especially in their spending behaviours. They have acknowledged more disciplined spending for healthcare, children's education and the like rather luxurious spending in pre-fencing era. As far as saving behaviour has been concerned, the respondents have been accessing formal financial services including life insurance notwithstanding informal sources have also being accessed.

6. Study Limitations

The academic audience should consider the following limitations before reaching conclusions. Firstly, it has conducted the study with a single objective, limited hypotheses and few variables; within a confined geographical location and with relatively smaller sample size. Secondly, academic papers, study reports and expert opinion published in English has only been reviewed hence materials on other languages have been excluded from the scope of the current research. Thirdly, instead of

adopting or adapting any data collection tool it has framed a self-administered interview-schedule. Fourthly, the survey has been carried out in 2018 even though the construction of fencing was completed few years back hence the threat of telescoping-a tendency of the respondents' over or under reporting unlikely to remained zero (Lynn, et al. 2004). Fifthly, the influence of the social-desirability bias (Crowne & Marlow, 1960) – a probability of the respondents to reply as expected by the enumerator has unlikely be entirely ruled out. Sixthly, the inferential statistical tools have their own inherent limitations hence the results likely be partially biased. Finally, instead of applying latest versions of SPSS and any advanced statistical softwares like R, E-views and Strata it has used IBM-SPSS version 20.

7. Practical Implications

The study has practical implications for a number of stakeholders. Firstly, the borderland people may use the report for redesigning their household budgets with more emphasis on healthcare, life insurance coverage, children's education and for housing. Moreover, the importance of having formal avenues of household savings such as bank products and gold has been highlighted. Secondly, the fencing affected population should plan to earn their livelihood by legal forms rather exclusively depending on illegal sources such as smuggling, as indicated by the study. Thirdly, borderland women may use the report in choosing their livelihood from multiple legal sources in addition to MGMNREGA rather bootleg smuggling. The other formal avenues e.g., domestic help, daily labourer in farming and in construction sector may be explored. Fourthly, the government officials may use the report for chalking out the rehabilitation and employment schemes for the affected population in collaboration with central government departments such as Skill India Mission for parenting job related and skill based trainings to the unemployed people. Fifthly, the officials of banks and post offices through agents may arrange financial literacy training programs for disseminating the importance of formal saving along with highlighting the ill-effects of informal saving instruments such as saving in chit funds and borrowing from mahajons at exorbitant interest rates. Finally, the deployed border security force (BSF) personnel should closely vigil the borders and should prevent any sort of infiltration and ICBT so that the peace and prosperity of the locality could be maintained. The local administration should be in constant touch with the BSF and local people to avoid any sort of law and order problems. The importance of border fencing and a conducive environment for smooth cross border formal trade as reported in the study should be maintained.

8. Future Research Scope

The current study has drawn a future research roadmap. Firstly, the excluded variables such as impacts of border fencing on ICBT and on infiltrations may be studied extensively in future. Secondly, future research agendum may be to assess the saving-spending patterns after imparting the financial literacy training to the fencing affected people and the results may be compared with the present study for measuring the impacts of financial literacy training. Thirdly, by extending the current study, future research endeavour may be intra-state comparison of border fencing on the stated research topic for assessing the gravity of the impacts. Fourthly, the impacts of financial advices on the household savings (Vlaev et al. 2015) and on retirement corpus (De Nardi, French & Jones, 2016) may be studied on border fencing affected people for measuring the results, any deviations from similar type of studies carried out with different samples from non-fencing areas. Fifthly, the influence of self-efficacy i.e., the self belief of achieving the accumulated target funds (Bandura, 1997) without any professional advices and or training may be assessed in future. Finally, the gender impacts on the household saving decisions may be compared with the borderland people of Tripura with that of other states of the NER for measuring the gap, if any.

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