Cross-buying as a challenge in emerging markets: a study of the effect of technology adoption on cross-buying intentions

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Abstract: The primary focus of this study is to understand whether the banking customers who are more likely to adopt new technologies will increase their likelihood to buy more products and services from same provider. This aim was achieved by examining the effect of technology adoption by banking customers on their cross-buying intentions for financial services. Data were collected using structured questionnaire and analysed adopting structural equation modelling (SEM). A positive strong association was found between technology adoption and cross-buying intentions. Technology adoption was measured through familiarity, innovativeness and stance to new technologies. The results stress the importance of increasing usage and popularity of electronic channels among banking customers for encouraging cross-buying. The originality of the paper lies in the fact that this study goes one step further from previous research by examining the direct relationship between technology adoptions by banking customers on their cross-buying intentions.

Keywords: cross-buying; cross-selling; financial services; technology adoption.


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1 Introduction

Due to deregulation and liberalisation of financial services, the traditional boundaries between banking, insurance and securities market has been blurred, hence, resulted in convergence of financial services (Claessens, 2009; Singhal and Vij, 2006; Yeager et al., 2007). The banks are all keen to become retail financial service provider by cross-selling a variety of products, from insurance to mutual funds, to their large customer base. This inclination has prompted a series of mergers and acquisition. Undoubtedly, there are numerous benefits of cross-selling:

- enhanced customer retention as customer switching costs increase with multiple relationships (Marple and Zimmerman, 1999; Reinartz et al., 2008; Srivastava and Shocker, 1987)
- reduced expenses on customer acquisition (Reichheld and Sasser, 1990; Vyas and Math, 2006)
- pricing advantage over competitor (Reichheld and Sasser, 1990)
- long-term relationship with customers (Reinartz and Kumar, 2003)
- lower risk and liability exposure due to firm’s knowledge of its customer base (Ngobo, 2004)
- lowers customer’s resistance to cross-buy due to the knowledge of delivery processes of their current service provider (Ngobo, 2004)
- help to build customer loyalty (Gorman, 2007).

But transforming ‘cross-selling’ into ‘cross-buying’ is the major problem. Identifying cross-selling opportunities is one thing, making them happen successfully is quite another as it is not easy to make customers to cross-buy different services from the
same provider. It becomes more complicated for service industries like banking industry because of the tendency of maintaining multi-service provider relationship among banking customers (Ngobo, 2004).

The same is also evident in Indian banking industry. In India, the cross-buy ratio, i.e., the average number of products used per customer with their main bank was 2.2, much lesser than the global average of 4.0 (Shah et al., 2010). Though the opportunities of cross-selling, in India, are tremendous then what coming in between leveraging these opportunities? In the words of P.T. Kuppuswamy (Chairman and CEO, The Karur Vysaya bank):

“Cross-selling happens only when we thoroughly understand the banking needs of the customer. Banks are not influencing buyers’ purchasing decisions while they shop. This is happening because they are not providing their counter staff with relevant information to cross-sell as well as adequate training/ awareness to enable employees to quickly and easily cross-sell the company’s full line of products.” (Kamath et al., 2003)

Some researchers have similar views like the bankers on the low cross-buying, such as McDarby (2007) stated that sometimes cross-buying fails because it is too focused on seller’s desires rather on the customer’s needs. Thus, the reasons behind low cross-buy ratio may be various. But previous researches have exhibited that one of the basic requirements of leveraging the benefits of cross-selling is wider customer acceptance to cross-buy different products or services from same provider (Polonsky et al., 2000). And to make cross-selling effective it is necessary to analyse the customer database and then offer the right products and services with a personal approach (Laksamana, 2012).

Nevertheless, there have been no empirical studies to explore the effect of technology adoption among banking customers on their cross-buying intentions in India. There are various other factors that have been explored by many authors in different-different context. For instance, image was studied by Ngobo (2004), Soureli et al. (2008), Hong and Lee (2012); effect of marketing instruments were studied by Verhoef et al. (2001), Verhoef and Donkers (2005), Liu and Wu (2007); corporate reputation was studied by Liu and Wu (2007) and Jeng (2008) payment equity was studied by Fan et al. (2011), relationship value was studied by Mäenpää (2012).

The primary focus of this study is to understand whether the banking customers who are more likely to adopt new technologies will increase their likelihood to buy more products and services from same provider. This aim has been achieved by examining the effect of technology adoption of banking customers on their cross-buying intentions for financial services. More specifically, the present study represents an attempt to resolve the following questions:

- Does technology adoption of banking customers lead their cross-buying intentions for financial services from their main bank?
- Can Customers’ adoption of technology be explained by their familiarity with technology, innovativeness and stance to new technologies?

To provide answer to these questions, authors have proposed a model based on existing literature and tested it empirically using appropriate tools and technique.
2 Literature review

2.1 Cross-buying in financial services

Majority of financial institutions have been claimed to practice one or another type of cross-selling (Benoist, 2002; Jarrar and Neely, 2002; Ngobo, 2004). As a result, in last decade we have witnessed an increasing number of research efforts in this domain. Review of the relevant literature reveals that the principal focus of cross-buying research in financial services has been exploring the drivers of cross-buying. For instance, Ngobo (2004) examined the effects of customers’ evaluations of service experience; repurchase intentions and their perception of switching costs on cross-buying intentions in two service industries. His study concluded that previous experience or the state of current relationship with the service provider is not the good indicator of cross-buying intentions. Customers consider some other factors, such as switching costs, perceived convenience and image conflicts too when they intend to cross-buy. Liu and Wu (2007) found the contrasting result regarding convenience. They studied locational convenience, one-stop shopping convenience, firm reputation, firm expertise and direct mailings as influencing factors of customer retention and cross-buying and found the direct effect of all these constructs except locational convenience.

Soureli et al. (2008) studied perceived value, satisfaction, image, trust as factors affecting cross-buying intentions. Their study revealed that cross-buying intentions of banking customers are directly influenced by trust and image of bank, whereas they found no direct relationship between perceived value, satisfaction and cross-buying intentions. Many authors have attempted to study cross-buying from relationship management perspective. Padmavathy et al. (2012) identified the dimensions of customer relationship management effectiveness (i.e., organisational commitment, customer experience, process-driven approach, reliability and technology orientation) and its relationship with behavioural outcomes, such as satisfaction, loyalty and cross-buying. They found not all the dimensions affect customer satisfaction and loyalty, whereas cross-buying was found to be positively influenced by both, satisfaction and loyalty among Indian retail banking customers. Liang and Chen (2009) supported that customer commitment has a positive influence on relationship breadth (or cross-buying) in online context while studying the effects of online relationship marketing on online firm–customer relationships.

Few authors have also examined the direct and indirect effects of relationship quality on cross-buying, such as Carlson and Tung (2011) studied the relationships between customer loyalty, relationship quality and cross-buying behaviour. Their study revealed that customer loyalty has a strong influence on cross-buying intentions, whereas relationship quality has a marginal effect. Liu and Wu (2008) investigated the moderating effect of product category similarity and complexity on the relationship between relationship quality and cross-buying. Their study also suggested that the number of products purchased from other service providers has a negative effect on cross-buying.

 Whereas, most of the cross-buying literature has been focused on individual customers, the study conducted by Mäenpää (2012) has explored the cross-buying behaviour of business customers. This author has studied qualitatively the drivers of cross-sectoral cross-buying behaviour of small and medium enterprises (SMEs) for two financial services: banking and insurance. The results showed that SME customer prefer to use separate and independent provider for their banking and insurance needs.
In this research, we shall be primarily concerned with the effects of technology adoption on the cross-buying intentions of retail banking customers, providing, therefore, a more key facet into the research family that seeks to determine the antecedents of cross-buying.

2.2 Technology adoption

Existing literature on technology adoption in banking industry can be divided into two segments; technology adoption by customers and technology adoption by employees. The interest of our study is technology adoption by banking customers only. Technology adoption has been studied widely in all fields of banking, whether it is internet banking (Amin, 2007; Hosein, 2009; Suki, 2010) or mobile banking (Al-Jabri and Sohail, 2012; Riquelme and Rios, 2010) or ATMs (Natarajan et al., 2010; Wan et al., 2005) or telebanking (Al-Ashban and Burney, 2001).

Few authors have also studied the barriers in adoption of technology, Rotchanakitimmuai and Speece (2003) studied qualitatively the barriers to internet banking adoption and found trust to be major barrier, others included organisational barrier and legal support issues. Similarly, Munusamy et al. (2012) had identified difficulty to operate, hassle to use, unreliable, perceived risk and high connection fees as perceptual barriers to adopt internet banking.

Further another research family belonging to technology adoption is known for using the popular technology acceptance model (TAM) developed by Fred Davis and Richard Bagozzi (Bagozzi et al., 1992; Davis, 1989). For instance, Lin et al. (2007) studied the TAM model in e-stock context; Al-smadi (2012) integrated TAM with theory of planned behaviour and studied the internet banking adoption. Fonchamnyo (2013) used this model to study the e-banking adoption; Many researchers have adopted this model and added new constructs including compatibility (Agarwal and Prasad, 1998a, 1998b), task-technology fit (Dishaw and Strong, 1999), cognitive absorption, playfulness, self-efficacy (Agarwal and Karahanna, 2000), peer Influence (Chau and Hu, 2002), perceived cost, social influence, system quality (Kleijnen et al., 2004) in their study. If we closely examine the literature on technology adoption in banking industry, we will find that most of the studies concluded that the electronic delivery channels of banking are under-used by different group of customers (e.g., Amin et al., 2008).

The review of existing literature resulted in a significant gap related to the ignorance of the role of technology in cross-buying. Undoubtedly, technology plays a great role in consumer buying behaviour. It also affects the cross-buying as only tech savvy people will go to cross-purchase a credit or debit card. The present study aims to fill this gap by studying the effect of technology adoption on cross-buying intentions of banking customers.

The rest of this paper is organised as follows. We first develop our conceptual model and associated research hypotheses that address the relationships between technology adoption dimensions and cross-buying intentions. We then describe the sample and measures employed in the study. We follow by reporting the empirical research results. Finally, we conclude by identifying study limitations and proposing future research directions.
3 Proposed model and hypotheses

This study has measured technology adoption through three dimensions, familiarity, innovativeness and stance to new technologies. Apart from in numerous available measures, the authors are inclined to choose these three factors as the dimensions. The argument for the same lies in some insights based on Rogers’ theory of innovation. According to this theory, before the decision regarding the adoption or rejection of innovation phase, an individual satisfy his/her curiosity through learning about the innovation and seeks information about it which is nothing but gaining the familiarity with innovation. After this knowledge stage, the individual shapes his or her attitude (stance) towards innovation and this lead to actual decision stage (Sahin, 2006). Further, Rogers’ categorised the adopters on the basis of innovativeness defining it as “the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system” (Rogers, 2003, p.22). This is indicating that the degree of innovativeness indicates the degree of adoption.

Review of literature also suggests that these factors are known to have significant impact on technology adoption (e.g., Bhattacharjee, 2002; Chang et al., 2005) but these studies are based on the different online context.

Familiarity with technology: Familiarity captures one’s knowledge and experience with a product or technology (Dimitriadis et al., 2011). It has been studied as an influencing factor of brand and e-commerce adoption (Bhattacherjee, 2002; Gefen et al., 2003; Wu et al., 2008).

Stance to new technologies: Stance to new technologies refers to a person’s general attitude towards new technologies (Dickerson and Gentry, 1983). Kim and Prabhakar (2002) found a positive relationship between stance to new technologies and adoption of internet banking. In a study related to another electronic channel, i.e., ATMs authors compared ATM cardholders with non-cardholders and found that attitude towards ATM technology was one of the variables significantly differentiating the two groups (Swinyard and Ghee, 1987).

Innovativeness: Innovativeness is defined as a consumer’s tendency to try or be the first to buy new products and services (Goldsmith and Hofacker, 1991). Many researchers have proved that innovators are the early adopters of new technologies (Donthu and Garcia, 1999; Limayem et al., 2000; Blake et al., 2003; Chang et al., 2005). Subroto and Sanjoy (2006) observed innovativeness as one of the predictor of converting internet non-users to internet users and to online buyers.

The proposed model has been shown in Figure 1. Although, there can be some other alternative model too based on theories but the authors found the proposed model as the best-fit due to the context in which the study has been conducted (i.e., Rajasthan). In Rajasthan, the low literacy rate and the attitude of people are one of the major barriers to technology adoption and this reasons made us to choose such constructs that bring a clear-cut picture of respondents’ technology adoption. Additionally, the proposed model is serving as replica to alternative models.
Further link between technology adoption and cross-buying was suggested on the basis of review of literature. Although, there is a lack of studies focusing on the direct linkages between technology adoption and cross-buying yet some indirect effects helped us in developing the prepositions. For instance, the study conducted by Hitt and Frei (1999) proved that there is a significant difference between the incremental product purchases by the regular customers and those who have adopted the PC (personal computer-based home banking) banking. But their study is not providing a clear picture regarding the effect of technology adoption on cross-buying as they have studied only one electronic delivery channel, i.e., online banking.

H0: Technology adoption by banking customers does not affect their cross-buying intentions for financial services.

H1: Technology adoption by banking customers positively influences their cross-buying intentions for financial services.

4 Research methods

4.1 Measures development

This study involves one endogenous construct namely cross-buying intentions and one exogenous construct technology adoption that has been measured through three latent constructs; familiarity with IT, Stance to new technologies and Innovativeness. All the measures were adopted from previous published works. Three items for ‘familiarity’ construct were adopted from Griffin et al. (1996). Measures of ‘Stance to new
technologies’ were adopted from Kim and Prabhakar (2002), Swinyard and Ghee (1987) and Dickerson and Gentry (1983). ‘Innovativeness’ items were borrowed from Donthu and Gilly (1996), Goldsmith and Hofacker (1991), Oliver and Bearden (1985) and the indicators of cross-buying intentions were taken from Tam and Wong (2001), Foster and Cadogan (2000) and Polonsky et al. (2000). For all measures, a seven-point Likert scale of agreement was used (1 being strongly disagreed and 7 being strongly agreed). It is reported by many researchers that reliability is maximised with seven response categories (Finn, 1972; Nunnally, 1978; Ramsay, 1973; Symonds, 1924).

4.2 Sample and data collection

A sample of 425 banking customers of Rajasthan was approached to take part in this study using non-probability quota sampling. This sampling technique was used due to convenience reasons. Another reason is that quota sampling helps in reducing high sampling errors and in obtaining fairly accurate results with respect to the sample representativeness (Aaker et al., 1998; Chisnall, 2001). The quota based on age and gender of respondents was established according to the proportional distribution in the target population (i.e., banking customers of Rajasthan). To collect data, we used structured questionnaire and send through either electronic mail or collected responses through telephonic survey. Prior to data collection, pilot survey was conducted on a small sample of ~30 banking customers and the suggestions were collected and implemented after discussion with the experts of marketing field. Total 191 usable responses were collected using the modified questionnaire and this information collected in the form of data was processed for further investigation.

4.3 Data analysis using SEM

SEM is a statistical technique for testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions (Pearl, 2000). SEM combines two models: the structural model showing potential causal dependencies between endogenous and exogenous variables, and the measurement model showing the relations between latent constructs and their indicators.

4.3.1 Measurement model

We conducted a second-order confirmatory factor analysis (CFA) to test the adequacy of the measurement model using IBM AMOS 19.0 to analyse the covariance matrix. The analysis focused on one second order latent constructs, i.e., technology adoption; three first order latent constructs viz., familiarity (FAM), innovativeness (INN) and stance to new technologies (STAN); and 17 observed variables. We used maximum likelihood estimation as it is considered to be the most appropriate with large samples under the assumptions of multivariate normality (Jöreskog and Sörbom, 1982). CFA provides quantitative measures of the reliability and validity of the constructs (Jöreskog and Sörbom, 1989). As numerous fit statistics consider different aspects of fit, it has been recommended that researchers should report multiple fit statistics in SEM studies (Thompson, 2000). For this reason, five indices were used to assess the degree to which
the data fit the model: the ratio of chi-square to degree of freedom (CMIN/DF), the root mean square error of approximation (RMSEA), adjusted goodness of fit index (AGFI), the standardised root mean square residual (SRMR) and comparative fit index (CFI). The measurement model was found to have an adequate fit to data as the fit statistics corresponded reasonably well with those found in the literature, as shown in Table 1 (Bagozzi and Yi, 1988; Hu and Bentler, 1999; Hair et al., 2006). It shows that it is a plausible representation of the causal structure (Bentler, 1980).

<table>
<thead>
<tr>
<th>Fit indices</th>
<th>χ²</th>
<th>p-value</th>
<th>χ²/df ratio</th>
<th>GFI</th>
<th>AGFI</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>CFI</th>
<th>NFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>163.47</td>
<td>0.002</td>
<td>1.421</td>
<td>0.908</td>
<td>0.877</td>
<td>0.047</td>
<td>0.012</td>
<td>0.966</td>
<td>0.894</td>
</tr>
<tr>
<td>Suggested Values</td>
<td>&gt;0.05</td>
<td>&lt;3</td>
<td>&gt;0.90</td>
<td>&gt;0.80</td>
<td>&lt;0.06</td>
<td>&lt;0.08</td>
<td>&gt;0.95</td>
<td>&gt;0.90</td>
<td></td>
</tr>
</tbody>
</table>

Additionally, the proposed measurement model showed that all regression weights were significant (p < 0.001). Although the χ² test is significant, the other indices indicate an acceptable fit. In terms of goodness of fit, reliance on χ² test as the sole measure of fit is not recommended because of its dependence on sample sizes (Bearden et al., 1982). Therefore, it is desirable to examine other measures of fit not as sensitive to sample size (Bagozzi and Edwards, 1998). Overall, the results demonstrated that the data had good model fit, thus enabling the evaluation of the structural model to proceed.

The next step was examining the reliability and validity of the constructs for the measurement model. Secondly, the overall fit of the structural model and the structural parameters were examined to determine whether the data supported the proposed model and hypotheses.

4.3.2 Reliability and validity

Efforts were made to maximise the reliability and validity of the scale. All introduced first and second-order constructs were found to be reflective since the manifest items are highly correlated and the meaning of the constructs would not change if an individual item was removed (Jarvis et al., 2003). To examine the reliability of scale, we used Cronbach’s alpha and composite reliability (CR) to check the internal consistency of constructs which has said to be more reliable as it is not affected by the number of indicators used in the construct (Chin, 1998a, 1998b). All the alpha value exceeded the threshold value of 0.70 (Nunnally, 1978) and all the CR values exceeded the suggested value of 0.60 (Bagozzi and Yi, 1988). To test the construct validity of each scale, assessment of convergent and discriminant validity have been suggested (Churchill, 1979). Convergent validity was examined through factor loadings and average variance extracted (AVE). Factor loadings for each items of all underlying constructs were statistically significant and were >0.60. AVE was found greater than or equal to suggested value of 0.50 except one construct of cross-buying in which it was marginally lower, hence establishing convergent validity (Hair et al., 1998).

Thus, reliability and validity measures were acceptable for all the constructs and has been shown in Table 2.
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#### Table 2: Summary of confirmatory factor analysis

<table>
<thead>
<tr>
<th>Items</th>
<th>Description</th>
<th>Cronbach’s Alpha</th>
<th>Factor loading</th>
<th>Composite Reliability</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAM1</td>
<td>I have experience in using the electronic channels of banking</td>
<td>0.87</td>
<td>0.90</td>
<td>0.78</td>
<td>0.69</td>
</tr>
<tr>
<td>FAM2</td>
<td>I know very well to handle the electronic channels of banking</td>
<td></td>
<td>0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAM3</td>
<td>Generally, I am familiar with the use of electronic channels of banking</td>
<td></td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INN1</td>
<td>I like to try new and different things</td>
<td>0.84</td>
<td>0.71</td>
<td>0.73</td>
<td>0.52</td>
</tr>
<tr>
<td>INN2</td>
<td>I am among the last among my friends who buy a new product</td>
<td></td>
<td>0.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INN3</td>
<td>I like to experiment with new ways of doing things</td>
<td></td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INN4</td>
<td>I like taking risk when I buy something</td>
<td></td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INN5</td>
<td>Usually, I am among the first ones who try new products</td>
<td></td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAN1</td>
<td>I feel comfortable using technology</td>
<td>0.83</td>
<td>0.74</td>
<td>0.73</td>
<td>0.50</td>
</tr>
<tr>
<td>STAN2</td>
<td>One has to be very cautious when using new technologies</td>
<td></td>
<td>0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAN3</td>
<td>I do not like things that are automated or depend on new technologies</td>
<td></td>
<td>0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAN4</td>
<td>I prefer to handle my money affairs without using any electronic medium</td>
<td></td>
<td>0.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAN5</td>
<td>I prefer the comfort of technology to the personal face-to-face service</td>
<td></td>
<td>0.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CB1</td>
<td>I have intentions to buy more products from main bank</td>
<td>0.79</td>
<td>0.69</td>
<td>0.63</td>
<td>0.49</td>
</tr>
<tr>
<td>CB2</td>
<td>There is a possibility of purchasing additional products from main bank</td>
<td></td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CB3</td>
<td>I intend to choose the main bank for future purchases</td>
<td></td>
<td>0.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2  Summary of confirmatory factor analysis (continued)

<table>
<thead>
<tr>
<th>Items</th>
<th>Description</th>
<th>Cronbach’s Alpha</th>
<th>Factor loading</th>
<th>Composite Reliability</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB4</td>
<td>I would like to increase the volume of business with main bank</td>
<td>0.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAM</td>
<td>Familiarity</td>
<td>0.88</td>
<td>0.60</td>
<td>0.72</td>
<td>0.54</td>
</tr>
<tr>
<td>INN</td>
<td>Innovativeness</td>
<td></td>
<td></td>
<td></td>
<td>0.71</td>
</tr>
<tr>
<td>STAN</td>
<td>Stance to new technologies</td>
<td></td>
<td></td>
<td>0.87</td>
<td></td>
</tr>
</tbody>
</table>

4.3.3 Structural model

According to the results, all the important indicators of the model fit were above the accepted value. The overall fit indices for the proposed structural model were $\chi^2 = 163.46$ with 115 degrees of freedom, $p = 0.002$, AGFI = 0.877 with RMSEA = 0.047, CFI = 0.966, TLI = 0.959, GFI = 0.908 and CMIN/DF = 1.421. The value of $R^2$ stood at 0.73, indicating strong relationship between technology adoption and cross-buying, as shown in Table 3.

The structural model has been shown in Figure 2.
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Table 3  Structural relationship results: direct relationship

<table>
<thead>
<tr>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology adoption → Cross-buying intentions</td>
</tr>
</tbody>
</table>

This findings support our hypothesis that cross-buying intentions of banking customers is positively influenced by their technology adoption. This finding appears to be an extension to the previous findings that the cross-buying of the online banking customers and cross-buying of regular customer are significantly different (Hitt and Frei, 1999). Providing answer to our second research question; analysis reveals that familiarity, innovativeness and stance to new technologies are good determinants of technology adoption as it explained 69% of variance in familiarity, 52% of variance in innovativeness and 50% of variance in stance to new technologies. Moreover the relationship was statistically significant (at 0.001 probability level) and in the hypothesised direction.

5 Findings and implications

This study goes one step further from previous research, as it examined the direct relationship between technology adoption of banking customers on their cross-buying intentions, the relation which has not been tested empirically in previous researches. The overall conclusion of this study is that cross-buying intentions of banking customers are not deprived from the influence of technology just like it has changed the way people bank. The main contribution of this study is the identification of this remarkable relationship between the technology adoption level and cross-buying of financial services, in the field of bank marketing literature. This finding is consistent with the literature that adoption of PC banking influences the cross-selling (Hitt and Frei, 1999). But the previous research found the weak influence, whereas results of this study confirmed the strong positive effect of technology adoption on cross-buying intentions of banking customers (r² = 0.73).

Results showed that banking customers are familiar with the electronic channels of banking. Experience of using e-channels mainly enhances the familiarity of customers with technology. These findings are also aligned with the Global Consumer Banking Survey 2012 conducted by Ernst and Young organisation. They found that internet banking is the most preferred banking channels among the Indians for simple transactions, whereas for complex transactions they prefer branch visit over the internet banking. The argument for this can be that the choice of banking channel depends upon the specific need of the customer at a time. But, in general, online banking is the most popular channel among customers (Ernst & Young, 2012). Further results suggested that most respondents are innovative to try new and different things. Some respondents also get ready to take risk when they buy new products or services. Due to the characteristics of innovativeness, banking customers are more likely to cross-buy financial products or services as it contributes the maximum variance (i.e., 76%) in model. After innovativeness, stance to new technologies contributes the highest variance (i.e., 51%) which shows that people’s attitude towards technology also affects the cross-buying intentions. In relation to stance to new technologies, we found somewhat mixed results.
though customers are aware regarding the cybercrimes; they feel insecure to perform transactions through electronic channels. At the same time, it encourages them to cross-buy. The reason behind this insecurity may be the rising cybercrimes such as phishing, spam or identity theft. According to the findings of internet security Threat Report by a private computer security firm, nearly 11 lakhs identities were stolen in India due to data breach in 2011 (Shastri, 2012).

The results also revealed that stance to new technologies is the most important determinant of technology adoption as the standardised factor loadings for this factor was highest at 0.87 among all three factors. It is peoples’ attitude towards technology only which made their perceptions regarding the associated risk, ease of use and relative benefits of using the various technological channels of banks.

Finally, possibility of purchasing additional products indicator variable had the highest standardised factor loadings, suggesting the strength of variable in measuring cross-buying intentions.

Further the variables that are accounting the maximum variance in customers’ cross-buying intentions include customers’ familiarity with and experience of using the electronic channels of banking. Nowadays, especially the young customers are increasingly using the electronic channels of banking. Other variables include the customers who are the first one to try new products or services have high intentions to cross-buy, the comfort level of using technology and the awareness about the technological issues also affects greatly. It indicates that as technology has become a part of our day-to-day life, people are feeling comfortable with technology and the awareness about technology issues is also increasing.

On the basis of the insights provided through this study, following suggestions can be given to bank managers:

- Bank peoples should try to encourage the use of electronic channels by making customer more familiar and comfortable regarding the use of technical means, e.g., people can be given with the option of choosing language while performing transaction through ATMs.
- At the same time, they can organise some workshops in which they can demonstrate the various features and usage of the electronic channels. It will help them in increasing the technology adoption and changing the perceptions of adult customers about technology.
- They should make their websites interactive as well as secure in such way that it itself direct people about the steps to be taken to perform any transaction and security measures to be taken, e.g., like ATMs, can they do something to provide step-by-step procedure in internet banking context.
- Strategies for increasing cross-selling should be correlated with electronic channels so that customers get the easier medium to cross-buy products and services also.
- They can think upon exploring the new technological channels for cross-selling and they can also adopt different marketing strategies for cross-selling via off-line and online channels.
The relationship manager at bank should have good technical knowledge so that the technology should be the facilitator, not a hindrance in maintaining the relationships with the customers. He should ensure that the right products should be delivered through the most-preferred and appropriate channels.

6 Future scope

This research provides an interesting avenue to the marketing researchers by adding one more significant antecedent and driver to cross-buying intentions of customers. Future studies can focus on studying the various effects of technology, such as effects of a particular electronic channel usage on their cross-buying. This study can be carried further to investigate the effects of technology adoption on customers’ actual cross-buying behaviour by utilising company database or using longitudinal study.

Finally, this research provides limited generalisation due to some limitations. First, this research is limited to all the financial products and services provided by retail banks to individual customers. Secondly, this research provides the attitudinal data not the actual transaction data of customers with their main or focal bank. Thirdly, the obtained data provides the information about the banking experience of customers with their main provider or their general banking experience and does not provide any specific information about their relationships with other banks or competitors because in banking industry, customers maintain contact with multiple service providers. Finally, the technology adoption measures include personal or psychographic measures, one can include the effect of environmental factors, such as, frauds, identity theft, etc.

References


Cross-buying as a challenge in emerging markets


**Bibliography**


