Why do consumers resist digital innovations? An innovation resistance theory perspective

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Purpose: Despite the efforts of governments and firms, consumer resistance toward digital innovations in the retail finance space continues to manifest rather visibly. Yet, the causes of consumer resistance towards innovations such as online procurement of financial products continue to remain under-explored. The present study attempts to address this gap by examining barriers that may constitute Indian consumers' resistance to buying financial products marketed digitally, using insurance as an exemplar. Precisely, the study measures five classic innovation resistance theory (IRT) barriers constituting consumers' resistance towards procuring digitally marketed insurance and examines the influence of consumers' demographic characteristics, measured through age and gender.

Design/methodology/approach: The conceptual model, resting on the theoretical proposition of IRT, was tested using data collected from 420 smartphone users. Given that the data did not satisfy the multivariate assumptions of normality, homoscedasticity, and linearity, artificial neural network approach was used for analysis. The analysis served as the basis for determining the relative importance of the five barriers in influencing consumer resistance.

Findings: The results indicated that the image barrier was the most influential barrier impacting consumer resistance, followed by usage, tradition, risk, and value barriers. Moreover, as revealed by the values of correlations, the direction of influence was positive. Notably, the relationship of all barriers except tradition with consumer resistance was found to be non-linear.

Originality: The study makes a novel contribution in two ways – one by extending IRT to a new area, i.e., resistance to buying financial products online, thereby further enhancing its applicability, and second by exploring consumer resistance to e-procurement of life and non-life insurance, which to the best of the authors' knowledge, has not been examined so far despite the established exigency.

Keywords: Artificial neural network; consumer resistance; digital marketing; financial products; functional barriers; psychological barriers

1. Introduction

Insurance is a very advantageous product since it plays a significant role in driving economic development (Ilyas & Rajasekaran,2022). In India, insurance is considered a

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premium sector that has registered noticeable growth over the years (IBEF, 2022). In fact, insurance has been highlighted as a sunrise sector in India, with a lot of growth potential (Dutta, 2020). Several changes have been witnessed in the insurance sector in India at the regulatory level during the past two decades, such as deregulation, market liberalization, and the establishment of the Insurance Regulatory and Development Authority (Ilyas & Rajasekaran, 2020). As a result of these developments, the insurance sector in India, comprising both life and non-life insurance, has grown significantly in density and penetration. Yet, recent reports suggest that India's insurance penetration rate is relatively low compared to the global average (Statista Research Department, 2022). There are multiple reasons behind this relatively slow insurance growth in India, some of which are understood, and others need further examination.

A review of the available literature in the area reveals that scholars have examined the insurance sector in India to try and understand not only what drives its growth but also the nature of its operations and potential reasons behind its sluggishness. For example, Yadav and Sudhakar (2018) noted that income was a key determinant of demand for life insurance in India. With regard to operations, past studies observed that insurers still rely on an exclusive network of intermediaries to handle frontline interactions (e.g., Kaesler et al., 2020). It has also been observed that despite the development of several forms of distribution channels in the recent past (Roy & Roy, 2022), there is an issue of reach due to which the sector has not been able to realize its true potential. Taking note of this, recent studies have raised a call for enhancing the visibility of the sector (Chakraborty & Das, 2022).

Basis the preceding discussion, the present study observes that India needs to work extensively on under-penetration and inadequate insurance penetration in urban and rural geographies by increasing reach, access, and availability. Offering a potential solution, this study posits that increasing the volume of insurance through digital platforms might be an effective way of reaching India's vast and geographically dispersed population, thereby increasing the reach, access, and penetration of insurance. This suggestion is based on the fact that past studies have lamented that the Indian Insurance market continues to be primarily driven by the offline agent channel, with online sales contributing only an estimated 16% of overall premiums (Poddar et al., 2019). Even in this low share, the majority is contributed by renewal premiums, with offline sales largely contributing to first-time insurance sales (Poddar et al., 2019). Other studies have also noted that compared with other sectors that have leveraged technology, digital innovations, and the Internet for quite

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some time across the world, the insurance industry has lagged (e.g., Sundjaja & Komala, 2019). Given that digital insurance platforms are innovations that offer an opportunity for insurers to reposition themselves, stay relevant, increase revenue, and save on operating and distribution costs (Accenture, 2022), the lack of a quick transition to digital insurance platforms is an issue that needs to be addressed and remedied immediately.

Although recent reports have discussed supply-side issues in the form of continued reliance on traditional legacy distribution channels and slow rate of digitalization by insurance firms (Kapoor, 2022) as impediments to the growth of the digital insurance market in India, the present study contends that the insurance industry could be lagging in leveraging digital technology due to demand-side bottlenecks as well. The study argues that one of the key bottlenecks in this regard is the unwillingness of consumers to buy insurance policies through digital platforms or pay their premiums online. This position is aligned with the recent studies that have noted resistance manifested by consumers towards the use of digital innovations in the financial space, such as mobile wallets and banking (e.g., Laukkanen, 2016; Talwar et al., 2021). To explain further, studies on diffusion of innovation, recent as well as seminal, have observed that the failure rate of innovations is relatively high, and one of the key reasons behind such failure is the lack of adoption by consumers (e.g., Heidenreich & Kraemer, 2016; Tansuhaj et al., 1991). Existing scholarship has further observed that consumers' lack of adoption of innovations is driven by their resistance, which is an outcome of various barriers they may have towards the concerned innovation (P. Laukkanen et al., 2008; Talke & Heidenreich, 2014). However, a comprehensive review of the literature reveals that consumer resistance to digital innovations in general and financial products, in particular, is less studied (Talwar et a,l. 2020). In fact, research on consumer resistance to financial products available through innovative digital platforms is very narrow and limited to a few digital financial products such as mobile banking and mobile wallets (e.g., Kaur et al., 2020; Talwar et al., 2021; Laukkanen, 2016). Specifically, there is no literature examining barriers constituting consumers' resistance toward digital insurance/online insurance. Given the criticality of insurance in individuals' financial security and the economic development of countries, this gap in understanding of consumer resistance to digital insurance needs to be addressed expeditiously. The study of consumer resistance is also significant for practice and the scientific community, as the failure of innovations to diffuse has tremendous implications for organizational well-being and competitive standing (Kuester & Hess, 2009).

The present study proposes to address this gap by drawing upon the theoretical framework of innovation resistance theory (IRT; Ram & Sheth, 1989), which rests on two broad groups of barriers - , functional and psychological - constituting consumer resistance. The choice of IRT is justified by the fact that it has been employed effectively in recent studies to examine consumer resistance in different contexts, such as drone delivery (Khalil et al., 2022), online travel agencies (S. Talwar, Dhir, et al., 2020) and so on. To elaborate, the present study aims to examine how the three functional barriers (usage, value, and risk) and two psychological barriers (tradition and image) conceptualised by Ram and Sheth (1989) impact consumer resistance towards digital insurance. Specifically, the study proposes to examine two research questions: **RQ1:** What is the relative strength of each IRT barrier's influence on consumers' resistance toward buying life and non-life insurance online? **RQ2:** Which broad class of barriers, i.e., functional versus psychological, is relatively more influential in its impact on consumers' resistance toward buying life and non-life insurance online?

The present study collected cross-sectional data from 420 smartphone users living in urban areas in India to answer the proposed research questions. The data was analyzed using the artificial neural network (ANN) approach.

By exploring consumer resistance to digital financial products represented by insurance, the research will add a new dimension to the existing literature and provide actionable strategies for managers to help them encounter the adverse effects of consumer resistance. Analysis of the factors driving non-adoption can provide the firms developing and marketing digital financial products valuable insights for incorporating features that can attract consumers and lower their functional and psychological barriers.

The rest of the study is structured as follows: Section two presents the background literature, Section three discusses the theory and research model, Section four presents the data, methods, and results, Section 5 presents the discussion of results, and Section six presents the implications, limitations, and future research areas.

2. Background literature

2.1. Digital marketing and sales

The advent of the World Wide Web and the subsequent technological advancement has provided modern-day consumers access to various media channels that enable them to communicate freely with firms and other consumers (Lemon & Verhoef, 2016). These digital media channels (e.g., social media platforms, search engines, emails, and so on) have

supported digital marketing growth. Firms can better engage with potential customers to sell their products and services (Kim et al., 2019). Digital marketing may be defined as "a sub-branch of traditional marketing that uses modern digital channels for the placement of products and primarily for communicating with stakeholders, e.g., customers and investors, about a brand, products, and business progress" (Simply Digital Marketing, 2012).

Tiago and Veríssimo (2014) have noted that with the migration of real-world relationships to a more nebulous, virtual world, there is a change in consumers' behavior that has made it unavoidable for firms to realign their marketing strategies in the context of the digital domain. Digital marketing investments are also rising because, in addition to cost-effectiveness and reach, digital marketing also offers easier measurability of results compared to traditional marketing methods (Hennig-Thurau et al., 2010). Firms providing retail financial services and products to consumer investors and small businesses have joined the bandwagon. They have included the digital interface as an integral sales strategy.

Although digital helps firms gain a competitive edge in B2B and B2C settings, the opportunities it presents come with challenges and issues (Leeflang et al., 2014), particularly in marketing and selling financial products using digital social media platforms. In the context of any product or service offered to consumers, marketers and service providers are interested in knowing more about two key factors. First, why do people buy? Knowing why consumers have adopted a particular product or service can help managers promote loyalty and design their sales pitch to convince potential users. Second, why do people not buy? Knowing why people are not buying a particular product or service is crucial in increasing adoption. One of the challenges in using digital marketing is the consumers' resistance to adopting or accepting products marketed using digital platforms, mainly social media. It presents a more severe problem in the case of financial products, particularly investments, where trust is a crucial factor. Retail investors may feel uncomfortable investing through an online interface.

2.2. Consumer resistance to digital innovations

An innovation is "an idea, practice, or object perceived as new by a consumer or other units of adoption" (Rogers,1995). Innovation or consumer resistance may be described as resistance towards any innovation based on the perceived threat to the status quo and the existing beliefs (Ram & Sheth, 1989). It has also been described as the intention to forestall using any new technology (Saga & Zmud, 1994). Marketing literature has described it as a negative attitude to new offerings (Heidenreich & Spieth, 2013). Until recently, innovation diffusion research focused on the causes and motives of their adoption (Rogers, 2003). The

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factors that caused consumers to resist the innovations were not considered overtly (Heidenreich & Spieth, 2013). However, in the wake of the pioneering findings of Ram and Sheth (1989), researchers and managers started realizing that the study of positive adoption behavior did not quite wholly explain the reasons behind non-adoption/ consumer resistance (Bhattacherjee & Hikmet, 2007; van Offenbeek et al., 2013). However, the research on resistance, particularly related to the Internet and mobile technology, started picking only in 2007.

As consumer resistance research increased, researchers have also tried to study it in diverse areas like food production technology (Zheng et al., 2019), green innovation (Claudy et al., 2010), and organic food buying behavior (Tandon et al., 2021). However, most studies have been mainly focused on mobile banking (Chemingui & Lallouna, 2013; Cheng et al., 2014; Hosseini et al., 2016).

A comprehensive review of past studies has revealed that the delay in adopting any innovation is linked to retail consumers' resistant behavior (Hosseini et al., 2016). Marketing financial products are as it is a difficult task. To market them through social media becomes even more challenging. Still, it must be done because, as discussed above, every firm must recognize the digital aspect of the customer interface. The issues with financial products are legal and regulatory aspects and safety and timeliness issues (Lugmayr, 2012). While using digital marketing for promoting financial products, attention must be given to the analysis of consumers and assessing the usefulness of activities related to marketing and information services (Lombardi et al., 2011). Further, a framework for social media marketing of financial products would require a focus on the social media tools and channels that can be used, assessing the explicit requirements for these products, measurement of marketing effectiveness, and quality of information (Lugmayr, 2012).

3. Theory and research model

3.1. Innovation Resistance Theory

Innovation resistance theory has discussed innovation resistance in terms of different barriers that impede the acceptance of any innovation. The theory has identified usage, value, and risk barriers as the functional and tradition and image barriers as the psychological barriers to innovation. This theory is the most used in resistance literature. Ram and Sheth (1989) suggest that among functional barriers, the usage barrier is related to the need for more innovation compatibility with existing habits. In comparison, the value barrier is related to innovation's value compared to its substitutes. The risk barrier relates to

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the perceived risk associated with a given innovation. Regarding the psychological barriers, the tradition barrier represents resistance when innovation is out of sync with consumers' values, norms, and experiences. Finally, image barriers refer to personal views about the difficulties associated with using new technologies.

3.2. Research Model

The current study proposes to measure the extent of influence of the five IRT barriers on consumers' resistance toward buying financial products online, as captured through their barriers toward digitally marketed insurance policies in both life and non-life areas. The study also proposes to examine the influence of consumers' demographic characteristics, measured through age and gender, on their resistance to buying insurance policies online. The proposed relationships are presented in Figure 1.

Insert Figure 1

3.2.1. Barriers to Digital Procurement of Financial Products

Consumer resistance has been less studied compared to the adoption of products in the online and offline space. Accumulated literature on consumer resistance is primarily limited to the Internet or mobile banking (Cheng et al., 2014; Elbadrawy & Aziz, 2011), online shopping (Lian & Yen, 2013), and mobile shopping (Nel & Boshoff, 2019), IS implementation (Lapointe & Rivard, 2005) or technology adoption in general. For instance, Antioco and Kleijnen (2010) examined psychological and functional barriers to adopting technologies characterized by incompatibility and uncertainty. Lian et al. (2012) revealed that value and image barriers were significant in online shopping in different product categories. Lian and Yen (2013) showed that value and tradition barriers were the primary cause of resistance to online shopping for a cosmetic company's products. Zheng et al. (2019) developed a resistance framework to explain resistance to food processing technology.

Mani and Chouk (2017) examined resistance to smart and connected products using a smartwatch to reveal that the product and consumer characteristics were essential dimensions of resistance. Mani and Chouk (2018) extended IRT by including technological vulnerability, ideological and consumer barriers) to develop a model for digital technologies. Other prior scholars have examined resistance to salesforce automation (Cho & Chang, 2008), the use of mobile sales assistants (Spreer & Rauschnabel, 2016), green innovations (Claudy et al., 2010; Norzaidi et al., 2012), and healthcare (Gurtner, 2014).

To our knowledge, consumer resistance has not been examined in the case of financial products marketed through digital platforms. However, some prior scholars have examined resistance to mobile or Internet banking. Cheng et al. (2014) studied resistance to mobile banking in China in reference to consumer and innovation characteristics. They found perceived risk to be the key factor influencing consumers' resistance to mobile banking. The study also revealed that social influence and perceived complexity positively correlated with perceived risk, and trust was negatively associated with perceived risk. Abbas et al. (2017) showed that innovation and consumer characteristics like emotion, motivation, price, complexity, social influence, and self-efficacy were statistically significant predictors of consumer resistance to smartphones. Kuisma et al. (2007) also discussed the factors that have caused consumers to resist mobile banking. Kleijnen et al. (2009) examined consumer resistance in its three significant aspects: rejection, postponement, and opposition. Zhou (2011) also examined the antecedents of the intention to use mobile banking in terms of consumers' initial trust and perceived usefulness. P. Laukkanen et al. (2008) studied resistance to internet banking in Finland. They found that postponers, opponents, and rejectors responded differently in the context of the five barriers proposed by innovation resistance theory, except for the risk barrier. Risk perception for internet banking was high across all three categories of non-adopters. The value barrier was found to have the lowest effect on all three groups.

Similarly, a recent study on mobile payment systems found that the intentions to use these systems were negatively associated with value, usage, and risk barriers (Kaur, Dhir, Singh et al., 2020). Other studies on mobile payment systems, mainly mobile wallets, also reported various barriers that increased consumer resistance to using them or decreased their intentions to adopt them. For instance, Leong et al. (2020) revealed the positive influence of four barriers: tradition, usage, value, and risk on resistance toward mobile wallets. Scholars have noted the existence of resistance in retail investors' investment decision-making Seth et al. (2020).

Although there are no prior findings to support the influence of IRT barriers on consumer resistance to buying financial products digitally, as represented by insurance policies in the present context, the existing evidence related to Internet banking, mobile banking, and other innovations, in general, provides us sufficient basis to expect usage, value, risk, tradition, and image barrier to influence consumer resistance toward buying financial products digitally.

4. Data, Methods, and Results

4.1 Data

Data for the analysis was collected through an online survey in India. The questionnaire for the survey was developed by adapting pre-validated scales used by prior studies. The participants were recruited through screening questions regarding the preferred mode of procuring insurance policies during the COVID-19 pandemic. Only the respondents who chose 'the offline mode only' were invited to complete the survey. The screen question enabled recruiting respondents who resisted buying insurance online despite the need for social distancing and contactless transactions during the pandemic.

The measures for usage barrier were measured through a scale adapted from T. Laukkanen et al. (2007), the value barrier was measured through a scale adapted from Elbadrawy and Aziz (2011), T. Laukkanen et al. (2007), and T. Laukkanen, Sinkkonen, Kivijarvi, et al. (2007), risk barrier was measured through scale adapted from T. Laukkanen et al. (2007), T. Laukkanen, Sinkkonen, Kivijarvi, et al. (2007) and Hongxia et al. (2011), tradition barrier was measured through scale adapted from Mahatanankoon and Vila-Ruiz (2007), image barrier was measured through scale adapted from T. Laukkanen et al. (2007), and T. Laukkanen, Sinkkonen, Kivijarvi, et al. (2007) and consumer resistance was measured through scale adapted from Leong et al. (2020).

Of the 420 complete responses, 41.90% (176) were from female respondents. With regard to age, 35.24% (148) were between 26 and 35 years, 30% (126) were between 36 and 45 years, 28.33% (119) were between 46 and 55 years, and 6.43% (27) were 56 years and above in age.

4.2 Methods

The present study aimed to examine the association between the identified independent and dependent variables. In such studies, the common choice is to use either covariance or variance-based structural equation modeling, depending on the study's sample size, data characteristics, and objectives. The most important consideration, as discussed by recent studies (e.g., Talwar et al., 2021), is whether the data satisfies the four criteria of normality, linearity, homoscedasticity, and the absence of multicollinearity. After examining the data under the present study for these four characteristics, it was found that it did not satisfy the multivariate assumption of normality, homoscedasticity, and linearity. Hence, in consonance with the recent studies that have utilized ANN for examining consumer and investor behavior (e.g., M. Talwar et al., 2021) when the data characteristics rendered it

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unsuitable for structural equation modelling, the present study also used the same method for data analysis.

4.3 Results

4.3.1 Data diagnostics

To begin with, the data was examined for normality and homoscedasticity. After that, multicollinearity, linearity, common method bias (CMB), validity and reliability were evaluated better to understand the nature of the data under the study and determine its suitability for analysis.

One-Sample Kolmogorov-Smirnov Test was used to examine the distribution of the data. The asymptotic significance value for all constructs was less than 0.05, indicating that they are non-normally distributed. Next, a scatter plot of residuals was plotted to evaluate the data for homoscedasticity. Visual inspection of the plot, as presented in Figure 2, indicated that the data is heteroscedastic.

Insert Figure 2

To examine the absence of multicollinearity data, tolerance and variance inflation factor (VIF) were calculated in consonance with prior studies (M. Talwar, Talwar, et al., 2020; S. Talwar, Dhir, et al., 2020). As indicated in Table 1, all VIF values were less than the recommended threshold of 5, and the tolerance values were more than 0.1. Thus, multicollinearity was not an issue in this study.

Insert Table 1

The present study evaluated the linearity of the data under the study by generating the ANOVA output. The dependent variable, consumer resistance, had a non-linear association with all barriers except tradition. This confirmed that ANN was a suitable method for analyzing data under the study. Next, the Harman single-factor test was used to examine the data for CMB, as suggested by recent studies (Dhir et al., 2021; Kumar et al., 2021). The results revealed that one factor explained only 42.89 % of the total variance, which is within the recommended threshold of 50%. Thus, the data under the study does not have the issue of CMB.

Finally, the validity and reliability of the study measures were examined. In this regard, Cronbach's alpha and composite reliability (CR) values for all the constructs were calculated and found to be higher than the recommended cut-off of 0.70 (Hair et al., 2020), which confirmed the reliability of the instrument (Table 2). Also, average variance extracted (AVE) values were computed to assess convergent validity. Since all values exceeded the

cut-off of 0.5, the convergent validity of the measures was established. Similarly, discriminant validity was confirmed because the square roots of AVEs were higher than the pair-wise correlations (Table 2).

Insert Table 2

4.3.2. Results of ANN analysis

The study generated multiple models through ANN analysis by dividing the data into training and validation data. The predictive accuracy of these alternative models was evaluated using the root mean square errors (RMSE) values. The values, as given in Table 3, confirm that the models have high accuracy.

Insert Table 3

Finally, sensitivity analysis was conducted to generate the normalized importance of each barrier in terms of its influence on the outcome variable, i.e., consumer resistance toward procuring insurance policies online. As presented in Table 4, the image barrier had the maximum influence, followed by the usage barrier. Risk and tradition barriers had a similar influence, whereas the minimum influence was that of the value barrier.

Insert Table 4

5. Discussion of results

The present study examined IRT barriers as antecedents of consumer resistance to online buying life and non-life insurance. Specifically, the study addressed two research questions. To respond to **RQ1,** which inquired about the relative strength of the influence of each IRT barrier on consumers' resistance toward buying life and non-life insurance online, data collected from 420 smartphone users were analyzed using the ANN method. The analysis results indicated that the image barrier was the most influential, followed by usage, tradition, risk, and value barriers (Figure 3). Furthermore, the direction of influence is positive, as shown in Table 5 (based on each barrier's correlation with resistance exhibited in Table 2). The relationship between all barriers except tradition and consumer resistance is non-linear (Table 5).

Insert Figure 3 and Table 5

The highest relative influence of the image barrier implies that consumers have a very negative image of buying insurance policies online since they feel that it is difficult, complicated, and requires much work, such as uploading relevant documents, going through a tedious verification process, and so on. Though no prior study has investigated consumer

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resistance toward buying insurance policies online, the present study's finding that the image barrier is a significant barrier in the online environment aligns with prior results in different contexts, such as online shopping (e.g., Lian et al., 2012).

The relative influence of the usage barrier on consumer resistance toward buying insurance online is the highest after the image barrier. This indicates that Indian consumers experience usage barriers in perceiving a distinct lack of ease of use of the online portals to buy insurance policies despite being smartphone users. Also, they feel that buying insurance policies online is inconvenient, time-consuming, and unclear. As in the case of the image barrier, no prior study has investigated consumer resistance toward buying insurance policies online; the finding of the present study that usage barrier is a significant barrier in the online environment aligns with prior results in different contexts such as mobile-based payments (e.g., Kaur et al., 2020; Leong et al., 2020).

The relative influence of tradition and risk barriers on consumer resistance toward buying insurance online is almost similar. Herein, the influence of the tradition barrier implies that consumers prefer buying insurance policies offline to engaging in face-to-face communication and using physical forms of payment. In comparison, the influence of the risk barrier suggests that fear of making mistakes, entering wrong information, incurring some unreasonable or fraudulent charges, and exposing personal information to a third party while buying insurance policies online cause consumers to have resistance. Fear of device failure or internet connection failure may also cause consumers to resist buying insurance online. The results indicating the positive influence of tradition and risk barriers on consumer resistance align with prior studies in varied contexts (e.g., Leong et al., 2020; Lian &Yen, 2013). Finally, the influence of the value barrier is the least of the five barriers. The positive impact of value barrier on consumer resistance is in concordance with prior studies that have found a positive association of value barrier with resistance or a conversely negative association with intentions (e.g., Kaur et al., 2020; Leong et al., 2020; Lian et al., 2012).

To answer **RQ2,** which inquired about the broad class of barriers, i.e., functional versus psychological, which was relatively more influential in its impact on consumers' resistance toward buying life and non-life insurance online, the average effect of the barriers grouped under functional (usage, value, and risk) and psychological (tradition and image) was calculated. As displayed in Figure 4, the results indicated that the consumers have higher psychological barriers than functional barriers toward buying life and non-life insurance online. This implies that psychological conflicts arising from consumers' existing

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beliefs (Kleijnen et al., 2009) play a more dominant role than their perception that buying insurance products online requires significant changes in their habits (Ram & Sheth, 1989). Both categories of barriers are a cause for concern since prior studies have revealed that they can lead to consumers' rejection of innovations (e.g., Heidenreich and Spieth, 2013; S. Talwar, Talwar, et al., 2020).

Insert Figure 4

6. Implications, Limitations, and Future Research Areas

6.1. Theoretical implications of the study

The study has various theoretical implications that can help encourage research in the area. First, the study extends IRT to a new area, i.e., resistance to buying financial products online. The study further enhances this seminal theory's applicability, which has been used in various contexts in the past (Kaur, Dhir, Ray, et al., 2020; Khanra et al., 2021). At the same time, by extending IRT to explain consumer resistance toward buying financial products online, the study provides a credible understanding of the potential reasons/barriers that can prevent the success of various digital innovations and initiatives. Next, the study contributes at a methodological level by applying the artificial neural network (ANN) approach for the first time to compare the differences in the relative influence of barriers on consumer resistance toward the financial product. Since consumer behavior is complex, the association between independent and dependent variables may not always be linear. Due to this, ANN could prove to be an effective method of data analysis for future researchers examining adoptive/non-adoptive behaviors in the area. Finally, the study explains the behavior of Indian consumers in the digital context, an area that has attracted much media and regulatory attention in the past.

6.2. Managerial implications of the study

The present study's findings are helpful for firms in the financial services sector trying to drive the sales of their life and non-life insurance products online. The image barrier is the most critical barrier that increases consumer resistance, indicating that these firms should engage in campaigns to improve consumers' image and perception regarding purchasing insurance policies online. Similarly, since individuals have high usage barriers to buying insurance policies online, firms should pay specific attention to simplifying the process and the interface. In addition, they can also place self-help videos to guide individuals through the process such that they do not find it challenging to buy insurance through the online portal. At the same time, since individuals feel it is unsafe to buy insurance online because

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of transaction failure and privacy fears, firms in the sector should have robust IT infrastructure and prominently communicate the safety features on their portals.

Furthermore, since firms would be saving many physical costs by promoting online procurement of insurance policies, they should offer some benefits or discounts on the premium paid online compared to when paid offline. Finally, since psychological barriers are more dominant than functional ones, the government and the concerned regulatory bodies can play a crucial role in creating a general environment that promotes a pro-digit mindset amongst consumers. In the specific context of India, where this study is based, such detailed knowledge of barriers to buying policies online and paying premiums, in the same manner, can be of great use to the life and non-life insurance industry, which is poised for the next level of growth, accelerated by the increased depth of financial inclusion, geographical outreach, and government initiatives. Notably, the government's policy initiatives to reach out to the uninsured and socio-demographic aspects, such as increased middle-income groups, education, awareness about the need for protection, and retirement planning, are expected to increase insurance penetration. The use of digital mode for insurance, if and when adopted by people to buy insurance, can help firms and the government immensely in achieving the targeted numbers.

6.3. Limitations and Future Research Areas

The present study is based on cross-sectional data collected from urban Indian consumers. Due to this, the findings may not be generalizable to consumers in other countries or have different demographics, such as Indians living in rural areas. Future studies can test these barriers in different geographies and compare the results with the present study's findings. In addition, the present study measured only the five classic IRT barriers to understand consumer resistance to buying financial products online. There could be multiple other barriers that may contribute to consumer resistance. Future studies can extend the present study's model to incorporate other barriers that can provide a deeper understanding of consumer resistance toward buying financial products marketed digitally/sold online. Further, since consumer behavior is at the heart of this discussion, with the question being of adoption/non-adoption, future researchers can utilize seminal theories that conceptualize technology acceptance behavior, such as technology acceptance theory (TAM; Davis, 1989).

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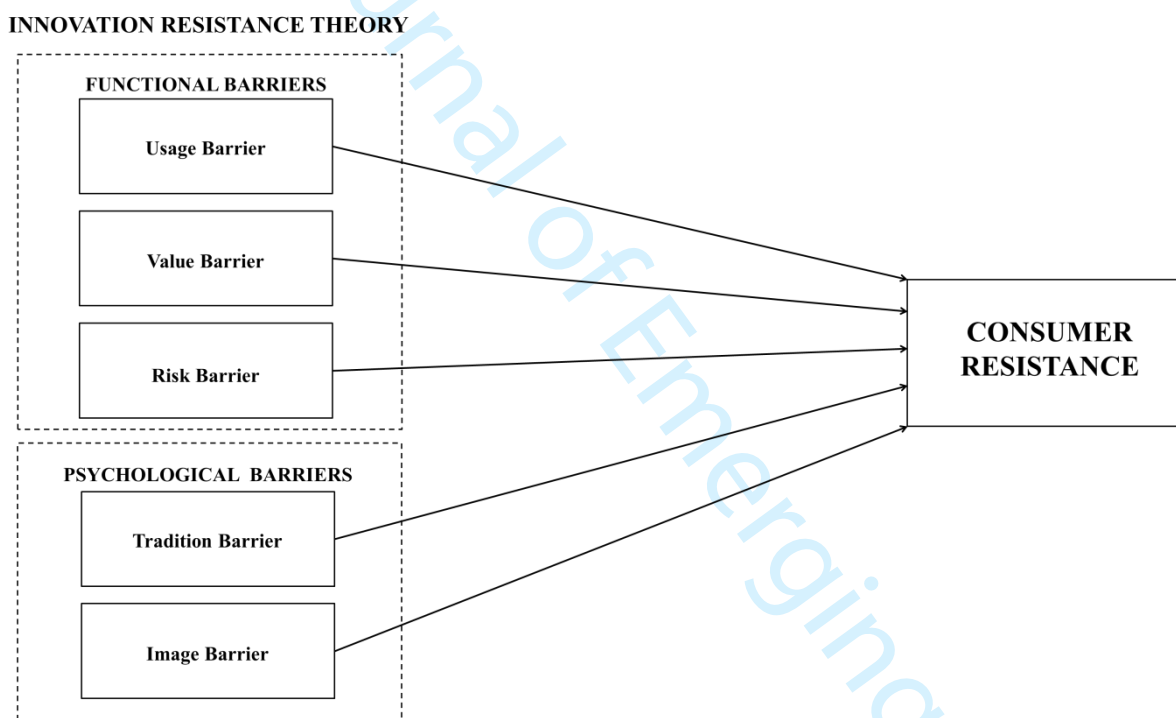
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Figure 1: Research model

INNOVATION RESISTANCE THEORY

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Figure 2: Scatter plot of residuals

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Figure 3: Normalized relative importance of each barrier

International Journal of Emerging Markets

Figure 4: Relative influence of functional versus psychological barriers

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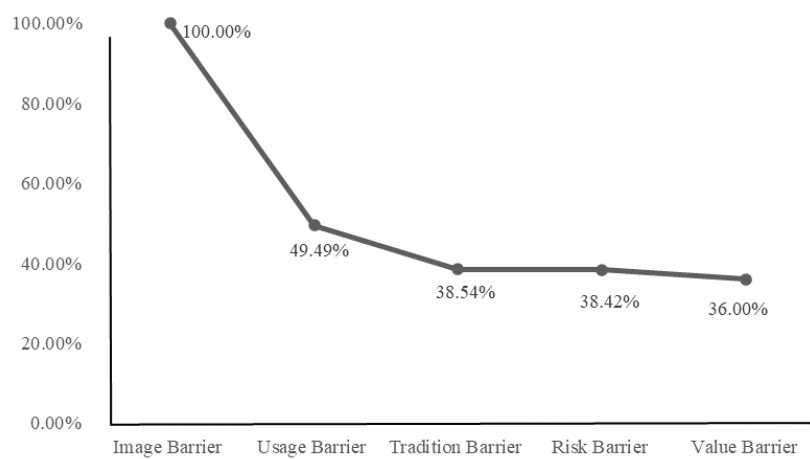
Table 1: Multicollinearity diagnostics

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.258	.138		1.875	.061		
UB	.239	.044	.272	5.399	.000	.379	2.639
VB	.217	.053	.211	4.103	.000	.364	2.746
RB	.109	.038	.118	2.884	.004	.573	1.746
TB	.126	.044	.110	2.852	.005	.650	1.538
IB	.251	.053	.220	4.739	.000	.446	2.240

a. Dependent Variable: Consumer resistance (COR).

Table 2: Reliability and validity measures

	α	AVE	CR	UB	VB	RB	TB	IB	COR
UB	0.92	0.52	0.93	**0.72**					
VB	0.86	0.60	0.86	0.74	**0.77**				
RB	0.90	0.71	0.92	0.58	0.58	**0.84**			
TB	0.82	0.57	0.85	0.51	0.54	0.37	**0.75**		
IB	0.81	0.50	0.82	0.65	0.66	0.58	0.53	**0.71**	
COR	0.88	0.64	0.90	0.70	0.69	0.57	0.52	0.66	**0.80**

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Table 3: Predictive accuracy of alternate models

	Random_state	N_Training	RMSE_Training	N_Validation	RMSE_Validation
0	72	294	0.1637	126	0.1997
1	36	294	0.1659	126	0.2003
2	68	294	0.1620	126	0.1991
3	129	294	0.1631	126	0.2031
4	13	294	0.1671	126	0.2000
5	298	294	0.1686	126	0.1980
6	117	294	0.1584	126	0.1967
7	298	294	0.1686	126	0.1980
8	274	294	0.1632	126	0.2004
9	29	294	0.1643	126	0.1966
Mean			**0.1645**		**0.1992**
SD			**0.0032**		**0.0020**

Table 4: Normalized relative importance of each barrier

	UB	VB	RB	TB	IB
0	0.1526	0.1077	0.1027	0.1256	0.2669
1	0.1269	0.1064	0.1010	0.1002	0.3646
2	0.1496	0.1241	0.1172	0.1406	0.2439
3	0.1495	0.0945	0.1215	0.1250	0.2622
4	0.1337	0.1069	0.1300	0.1059	0.3437
5	0.1365	0.1302	0.1197	0.1274	0.3483
6	0.1672	0.0900	0.1302	0.0893	0.2636
7	0.1365	0.1302	0.1197	0.1274	0.3483
8	0.1888	0.0784	0.0785	0.0964	0.2416
9	0.1381	0.1078	0.1278	0.1142	0.3059
mean	0.1479	0.1076	0.1148	0.1152	0.2989
Normalized relative importance	49.49%	36.00%	38.42%	38.54%	100.00%

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Table 5: Direction of influence and nature of the relationship

Barriers	Direction of influence	Nature of relationship
Image Barrier	Positive	Non-linear
Usage Barrier	Positive	Non-linear
Tradition Barrier	Positive	Linear
Risk Barrier	Positive	Non-linear
Value Barrier	Positive	Non-linear

Figure 1: Research model

INNOVATION RESISTANCE THEORY

FUNCTIONAL BARRIERS

Usage Barrier

Value Barrier

Risk Barrier

PSYCHOLOGICAL BARRIERS

Tradition Barrier

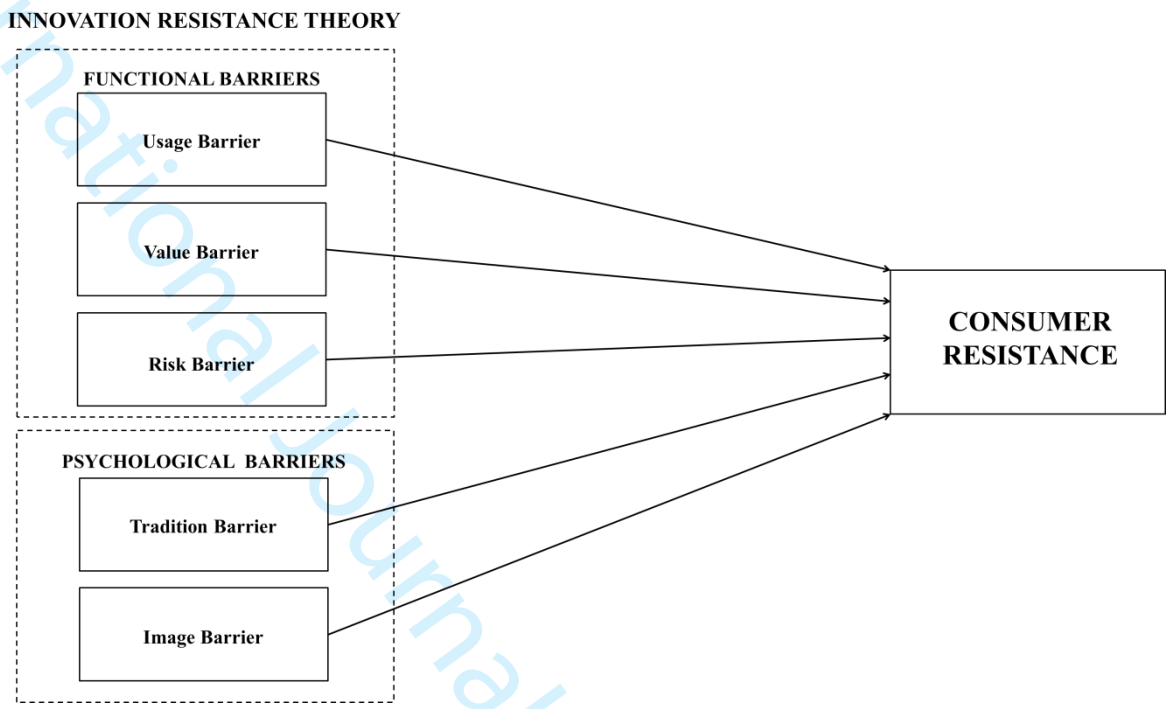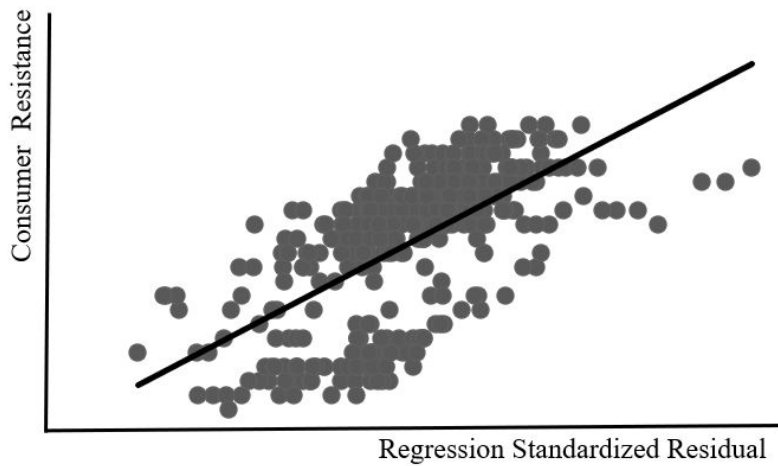Image Barrier

CONSUMER RESISTANCE

Figure 2: Scatter plot of residuals

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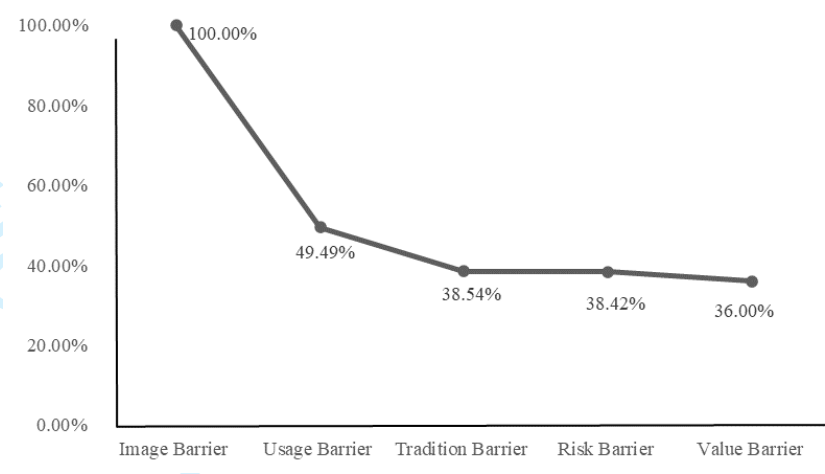**Figure 3**: Normalized relative importance of each barrier

Figure 4: Relative influence of functional versus psychological barriers

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RB	0.9	0.71	0.92	0.58	0.58	**0.84**			
TB	0.82	0.57	0.85	0.51	0.54	0.37	**0.75**		
IB	0.81	0.5	0.82	0.65	0.66	0.58	0.53	**0.71**	
COR	0.88	0.64	0.9	0.70	0.69	0.57	0.52	0.66	**0.80**

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3	0.1495	0.0945	0.1215	0.1250	0.2622
4	0.1337	0.1069	0.1300	0.1059	0.3437
5	0.1365	0.1302	0.1197	0.1274	0.3483
6	0.1672	0.0900	0.1302	0.0893	0.2636
7	0.1365	0.1302	0.1197	0.1274	0.3483
8	0.1888	0.0784	0.0785	0.0964	0.2416
9	0.1381	0.1078	0.1278	0.1142	0.3059
mean	0.1479	0.1076	0.1148	0.1152	0.2989
Normalized relative importance	49.49%	36.00%	38.42%	38.54%	100.00%

Table 5: Direction of influence and nature of the relationship

Barriers	Direction of influence	Nature of relationship
Image Barrier	Positive	Non-linear
Usage Barrier	Positive	Non-linear
Tradition Barrier	Positive	Linear
Risk Barrier	Positive	Non-linear
Value Barrier	Positive	Non-linear