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Analysis of Online Shopping Behavior of Millennials in the Indian Market Context

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Abstract
The study explores the complex world of Indian millennial's online shopping habits, paying particular attention to perceived risk factors and their impact. Given how quickly e-commerce is expanding, it is critical to comprehend the variables influencing consumers' online purchasing decisions. The purpose of the study was to examine how Indian youth's intentions to shop online were influenced by perceived risk dimensions, particularly Financial & Convenience Risk (FCR), Perceived Trust (PT), and Product & Delivery Risk (PDR). The research process entails a thorough examination using a range of statistical methods. Using validated scales and systematic data analysis methods such as multiple regression, confirmatory factor analysis (CFA), correlation analysis, and structural equation modeling (SEM), a sample of 563 respondents was surveyed. The study produced important new information about how young Indian consumers' perceptions of risk and their online purchasing habits relate to one another. The results show that intentions to shop online are highly influenced by perceived trust, which emerges as a dominant predictor. On the other hand, it was found that FCR and PDR were risk factors that had a negative correlation with young people's intent to purchase online. The study demonstrates how these factors are interrelated and how important a role they play in influencing customer behavior in the online market. By illuminating the complex relationships between perceived risk characteristics and online buying behavior unique to the Indian adolescent demographic, this research adds to the body of knowledge already in existence. These findings have ramifications for e-commerce platforms and marketers as well. They provide insightful information for developing tactics that target risk perceptions, build consumer confidence, and customize experiences to cater to India's growing online consumer base.

Keywords: Online shopping behavior, perceived risk, Millennials, E-commerce, Consumer behavior, Risk dimensions, online shopping trends, Digital marketplace

Introduction

According to Statista statistics, the Indian e-commerce market has grown significantly in the last ten years, from USD 14 billion to 84 billion between FY2014 and FY21, with a noteworthy Compound Annual Growth Rate (CAGR) of 29.2%. This expansion has been driven by several variables, such as favorable demographics, rising disposable income, better internet quality, lower internet service costs, and aggressive market penetration tactics used by top e-commerce companies. Notably, the main driver of this increase has been the Business to Consumer (B2C) sector. With so many people in India adopting the digital age, internet buying has become a common practice. The literature on online buying behavior in India, however, is still mostly concerned with adoption intentions or specific variables influencing users' intentions to purchase online, despite the considerable attention from academics and business researchers. Studies yet noticeably lack a thorough study that combines the key risk factors influencing current users' behavioral intentions. Our research gap emphasizes how urgently our study must address these important issues. This study aims to quantify the precise influence of each risk factor on behavioral intentions by integrating the main risk aspects that have been confirmed by earlier research into a unified framework. One of the main contributions of the aforementioned study work is the development of an Indian youth-specific model of online purchasing intentions by combining and validating important risk characteristics and trust into a single construct.

Literature Review

Owing to the promising stage of the Indian e-retail sector, a comprehensive analysis of the many aspects of perceived risk linked to online buying is highly desirable. The study's findings will provide e-retail businesses with important information that will help them understand the important risk aspects that young Indian users perceive. These insights might then be applied to customize their service offerings so that they are more focused on the needs of the customer. (Masoud, 2013) Many e-retailers have adopted aggressive expansion techniques, which have made a significant number of young consumers ready to adopt the online buying trend. (Lele, 2018), A foundational knowledge will be provided by the upcoming study, which aims to identify specific risk factors that these young users consider significant. E-marketers will benefit from this understanding since it will allow them to more successfully hone their marketing tactics and build a devoted clientele. (Miyazaki & Fernendez, 2001)

References to research on Indian consumers' online buying habits were found in the review of the body of literature. These studies looked at things like the intentions behind adoption and things that help or impede the adoption process. (Lian and Yen, 2014), However, the researcher also identified specific gaps in this body of work that the next study aims to fill. Through an in-depth exploration of many risk characteristics, this study hopes to significantly advance the body of knowledge already available on the topic.

Table 1 Summary of Present Literature

Literature Type	Indicative List Outcomes	Outcomes
Secondary Reports	1. BCG-Google Report 2019 2. RazorPay Report on ECommerce Market 2020	Impact of various aspects on customer centricity, latest trends in e-shopping, role of various demographic factors
Various Reports by Governmental Agencies	1.Competition Commission of India (CCI) Report 2020 2.IBEF Report on Indian E-Commerce industry 2020	Understanding evolution of e- commerce industry in India, governmental policies, major reforms, and government's view on managing this sector.
Seminal Models	Theory of Reasoned Actions by Fishbeinand Ajzen (1975), Technology Acceptance Model (TAM) by Davis (1989), Online Shopping Adoption Model Koufaris (2003) and Zhou et al. (2007)	Understanding of key constructs, theoretical advancement
PhD Thesis	Lele (2018), Singh (2017), Sujatha (2018), Urvashi (2018)	In-depth analysis of research framework, methodology, statistical tools and conclusions
Peer Reviewed Journals (176 papers)	Tran (2020), Hansen et al. (2018), Yu et al. (2018), Lian and Yen (2014), Forsytheet al.(2006), Doolin et al. (2005), Cha et al. (2019), Yeung et al. (2010), Miyazaki & Fernendez (2001), Masoud (2013)	Previously validated constructs, relationships and major conclusions

Source: Literature Review

Hypothesis

H11: Financial & Convenience Risk (FCR) does act as a determinant of behavioral Intentions (BI)
H10: Financial & Convenience Risk (FCR) does not act as a determinant of behavioral Intentions (BI)
H21: Perceived Trust (PT) has an impact on behavioral intentions (BI).
H20: Perceived Trust (PT) has no impact on behavioral intentions (BI).
H31: Behavioral Intention (BI) is influenced by Product & Delivery Risk (PDR)
H30: Behavioral Intention (BI) is not influenced by Product & Delivery Risk (PDR)
Where,
FCR = Financial and Convenience Risk, PT= Perceived Trust, PDR=Product and Delivery Risk, and BI= Behavioral intentions.

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Research Methodology

This section provides a summary of the research strategy that was used, the research design that was developed, and other important factors about the sample plan, sampling division, intended survey method, and survey instruments. The specifics of the various considerations in research methodology are provided below.

Table 2 summary of the research methodology

Parameter	Option Selected	Rational
Type of research	Applied Research	Research is based on validating previously used constructs in a single framework in Indian context.
Universe/Population	Online shoppers in India, falling in 15-27 age group (105 million) as per 2020 estimates	Market Reports show that majority of Indian online shoppers are in the sub-35 age bracket and this population remains active users for the next 25 years
Sampling Technique	Non-probability convenience sampling	Faster, cost-effective, and targeted approach for surveying the intended sample respondents
Sample Adequacy	Min. 385 respondents	Calculated using Cochran's formula for sample accuracy. Population of 105 million, 95% confidence level, and 5% margin of error
Margin of Error	5%	Prescribed and accepted threshold
Confidence Level	95%	Prescribed and accepted threshold
Data Collection Method	Survey Method	As the research aims to measure respondents' opinions to draw meaningful conclusions
Data Collection Tool	Questionnaire	Utilizing Likert scale to measure respondent opinions and views
Sample	563 respondents	Cochran's formula and threshold: Sample size should be at least 10X of no. of items in revised Scale.

Results and Analysis

Reliability Analysis: The sample was evaluated for build and overall instrument reliability. The 40-item test exceeded Nunally's (1967) suggested cutoff point of 0.7 with a high-reliability score of 0.953. Except for Delivery Risk, which had a slightly lower value of 0.658, all variables in the construct showed dependability scores above 0.7. Despite this divergence, Delivery Risk was nonetheless added for additional examination due to its importance in the online shopping system.

Description of the Sample: 587 respondents were interviewed for the study, and data was gathered using paper questionnaires and Google Forms. 24 entries that were found to be duplicates or incomplete were removed, leaving 563 respondents' data appropriate for the final analysis. An explanation of the sample it was found that 58.1% of the 563 respondents were men and 41.9% were women based on the data collected. Most (80.6%) were single, and 76% of them lived in cities. 25.4% of earners made more than 8 lakhs a year, while 57.5% of earners came into the 4-8 lakhs yearly income range. 86% of the population identified as Hindu, 6% as Muslim, and 5% as belonging to another religion. 71% of those in the field of education graduated, and 25.8% pursued postgraduate work. Among the age group, 30.3% were 23–25 years old, and 37.4% were 19–22 years old.

Inferential Statistics: Under the Chi-Square Test Statistics, 7 relationships were proposed (non-existent association of demographic variables such as age, income, gender, occupation, etc. with the online shopping experience). The relationship of gender, and occupation with online shopping experience was found to be statistically significant.

Table 3: Chi-Square Test Summary

Variable	Chi Square Value	Df	P Value	Comments
Gender	23.425	3	.000	Association Proved
Age	15.912	9	.069	No Association
Education	3.396	6	.758	No Association

Occupation	17.564	9	.041	Association Proved
Residing Area	2.131	3	.546	No Association
Marital Status	7.230	3	.065	No Association
Income	8.946	9	.442	No Association

It was found that a respondent's age, education level, place of residence, income, and marital status had no bearing on their online shopping experience. It was shown that there were two statistically significant correlations between online purchasing experience and gender and occupation. Standard Residual Level post hoc analysis (at p value = 0.05) was performed to identify the main categories that contributed to the connection.

Correlation Analysis: Correlation analysis between independent variables (Financial and Convenience Risk, Perceived Trust and Product & Delivery Risk) with dependent variable (Intentions) was performed to test the research objectives and hypotheses proposed.
Table 4 : Correlation analysis

		FCR	**PT**	**PDR**
BI	Correlation Coefficient	**-.359****	0.791**	**-0.483****
	Sig. (2 – tailed)	.000	.000	.000

FCR= Financial & Convenience Risk, PT= Perceived Trust, PDR= Product & Delivery Risk, and BI= Behavioral Intentions
The analysis revealed negative correlations between both risk dimensions (PDR and FCR) and Intentions, with correlation coefficients of -0.483 and -0.359 respectively. Conversely, Perceived Trust exhibited a notably stronger positive correlation with Intentions, with a correlation coefficient of 0.791. These findings suggest that online shoppers' behavioral intentions are adversely affected by Financial and Convenience Risk as well as Product and Delivery Risk. However, a user's Perceived Trust in the e-shopping system positively influences their behavioral intentions.
Multiple Regression Test: Under the regression model, the impact of Financial & Convenience Risk, Perceived Trust, and Product & Delivery Risk on Intentions was tested. The summary of results and findings of the test are discussed below:

Table 5: Results of Multiple Regression Analysis

Variable	**Unstandardized Coefficients**		**Sig**	**Comments**
	B	**Std. Error**		
(Constant)	.628	.126	.000	
FCR	**.019**	.025	**.451**	Found insignificant due to p-value above 0.05
PT	**.704**	.027	**.000**	A significant impact on Intentions was proved
PDR	**.149**	.028	**.000**	A significant impact on Intentions was proved

The regression model examined the influence of three predictors (FCR, PT & PDR) on the outcome variable (INT). It was evident that PT demonstrated the greatest impact on intentions (b=0.704, p=0.00), followed by PDR (b=0.149, p=0.00). Conversely, the third predictor, FCR (b=0.019, p=0.451), was deemed insignificant in affecting Intentions. This suggests that PDR and PT serve as determinants of a user's behavioral intentions toward using online shopping, while FCR does not

significantly impact these intentions.

Confirmatory Factor Analysis (CFA): The Confirmatory Factor Analysis (CFA) model comprised 14 items across three variables (FCR, PT, and PDR) derived from previous Exploratory Factor Analysis (EFA) and Discriminant validity tests. Critical parameters for the CFA model, such as degrees of freedom [df] = 214.8, Chi-Square= 71, and, $p < .000$, exceeded the expected thresholds, signifying a strong fit. The model's fitness was assessed through various indices: CMIN/df = 3.0, Comparative Fit Index [CFI] = .965, Root Mean Square Error of Approximation [RMSEA] = .06, Goodness-of-Fit Index [GFI] = .951, Adjusted GFI (AGFI) = 0.927, Normed Fit Index (NFI) = 0.949, and Incremental Fit Index (IFI) = 0.965.

The model's fitness was evaluated based on multiple criteria. The GFI value of 0.951 surpasses the threshold of 0.9 established by Hair et al. (2006), indicating a satisfactory fit. Additionally, the NFI value of 0.949 and the CFI value of 0.965, both exceeding 0.90 as suggested by Hu and Bentler (1999), signify a good fit. Furthermore, the RMSEA index at 0.06 falls below the acceptable threshold of < 0.08 according to Hair et al. (2006). In summary, all evaluated indices meet the criteria for a good fit, indicating the model's alignment with established standards of goodness-of-fit.

Structure of Equation Model: To explore structural relationships, a multivariate statistical tool is used, which is named as Structural equation modelling. It combines factor analysis, multiple regression analysis and path analysis to explore structural relationship between measured variables and latent constructs. The model demonstrated notable performance across various indices: CMIN/DF at 4.3, within acceptable levels per Hu and Bentler (1999). Key indicators such as NFI (0.904), CFI (0.924), and IFI (0.924) exceeded the threshold (>0.9) set by Hair et al. (2006), signifying a substantial model fit. Although GFI slightly fell below the threshold at 0.896, AGFI stood at 0.86, above the acceptable limit of 0.8, and was included in the model. Despite RMSEA nearing the upper threshold limit at 0.078, it remained within the acceptable range (<0.08). Collectively, these outcomes indicate a commendable fit for the measurement model within the Structural Equation Model context.

Path Analysis & Hypotheses Testing: Based on EFA results and emerging factor stricture, it was proposed that, three factors FCR (Financial and Convenience Risk), PT (Perceived Trust), and PDR (Product and Delivery Risk) would act as determinants of an existing user's intension to shop online.

The proposed hypotheses and results of path analysis are as follows,

Table 6: Path testing by using SEM

Hypothesis	CR Value	P Value	Results
FCR --> BI	-6.2	0.0	ACCEPTED
PT --> BI	14.3	0.0	ACCEPTED
PDR --> BI	3.54	0.0	ACCEPTED

H11: Financial & Convenience Risk (FCR) does act as determinant of Behavioral Intentions (BI)

H10: Financial & Convenience Risk (FCR) does not act as determinant of Behavioral Intentions (BI)

Based on the path analysis calculations, the statistical significance of the relationship between FCR and Behavioral Intentions was established (CR=-6.2, P=0.0). As per the hypothesis testing threshold outlined by AL-Majali and Nik Mat (2011), a CR value exceeding 1.96 or falling below -1.96, along with a P-value lower than 0.05, supports hypothesis acceptance. In this scenario, as both CR and P-value meet the criteria,

H11 is ACCEPTED, affirming the relationship between FCR and Behavioral Intentions. Conversely, H10 is REJECTED, suggesting a lack of significance in its proposed relationship.

H21: Perceived Trust (PT) has an impact on behavioral intentions (BI).

H20: Perceived Trust (PT) has no impact on behavioral intentions (BI).

The second hypothesis proposed Perceived Trust (PT) to have a direct impact on behavioral intentions. This relationship was statically validated as PT (CR=14.3, P=0.0) was found to be within the prescribed threshold by AL-Majali and Nik Mat (2011). H21 is ACCEPTED and H20 is REJECTED,

H31: Behavioral Intention (BI) is influenced by Product & Delivery Risk (PDR)

H30: Behavioral Intention (BI) is not influenced by Product & Delivery Risk (PDR)

The third hypothesis considers the combined effect of product and delivery risk on a user's behavioral intentions. With

(CR=3.54, P=0.0), the relationship was found to be statistically significant. It proves that the perceived concerns of a user in terms of product specifications or delivery do impact his/her intention to shop online. H31 is ACCEPTED and H30 is REJECTED.

Table 7: Summary of Hypothesis Testing

Tests	Results	Hypothesis 1 FCR & BI	Hypothesis 2 PT & BI	Hypothesis 3 PDR & BI
Correlation	FCR (r = 0.359), PT (r=0.791) and PDR (r= - 0.483) were found significantly correlated with intentions	H11: Accepted H10: Rejected	H21: Accepted H20: Rejected	H31: Accepted H30: Rejected
Multiple Regression	PT (b=0.704, p=0.00), PDR (b=0.149, p=0.00) were found significant While, FCR (b=0.19, p=0.451) was found to have insignificant impact on intentions	H11: Rejected H10: Accepted	H21: Accepted H20: Rejected	H31: Accepted H30: Rejected
CFA & SEM	FRC (CR=-6.2, P=0.0), PT (CR=14.3, P=0.0) & PDR (CR=3.54, P=0.0) found to have direct & significant impact on behavioral	H11: Accepted H10: Rejected	H20: Accepted H21: Rejected	H30: Accepted H31: Rejected

FCR= Financial & Convenience Risk, PT= Perceived Trust, PDR= Product & Delivery Risk, and BI= Behavioral Intentions
Correlation analysis revealed strong associations between the three predictors and Intentions. Perceived Trust exhibited a highly positive correlation (r=0.791), while the risk dimensions - FCR (r=-0.359) and PDR (r=-0.483) showed highly negative correlations with Intentions. Multiple regression highlighted significant impacts of Perceived Trust and Product and Delivery Risk on the variance of the outcome variable, whereas FCR had a minimal effect on intentions.
Confirmatory Factor Analysis (CFA) validated the emerged structure, displaying favorable indicators for a good model fit. Structural Equation Model (SEM) analysis, employing path analysis, evaluated the dimensions' impacts on behavioral intentions, confirming significant effects from all three proposed determinants (FCR, PT, and PDR). The significant impact of Perceived Trust (PT) and Product & Delivery Risk (PDR) was validated by all three statistical tests (correlation, multiple regression, and structural equation model). Hence H21 and H31 are ACCEPTED and H20 and H30 are REJECTED. In the case of Financial and Convenience Risk (FCR), the proposed relationship stood statistically significant as per correlation analysis and structural equation model. However, this relationship was insignificant as per multiple regression analysis. Since many previous researchers found SEM to be better in terms of causal model explanation, H11 is ACCEPTED and H10 is REJECTED.

Findings

Insignificant Impact of Three Risk Dimensions on Intentions

It was determined that the risks of privacy, performance, and time were not important in determining how young Indian internet buyers would behave. Respondents did not believe that these factors were crucial in determining their intentions for usage.

Perceived Trust Emerged as the Strongest Predictor

Numerous statistical analyses revealed that Perceived Trust was the most important factor in determining individuals' inclinations to shop online. When creating impressions about e-commerce platforms, trust was a key factor.

Negative Correlation between Age & Online Shopping Experience:

In contrast to older respondents, younger participants showed a higher level of online buying experience, indicating a faster adoption of new technology. This knowledge could direct specifically designed marketing campaigns for the senior population.

Positive Correlation between Occupation & Online Shopping Experience

Particularly among students, working professionals, and housewives (with 1-2 years of experience), occupation showed a noticeably favorable connection (r=0.368) with respondents' online buying experience. This information could help e-marketing firms create focused advertising campaigns to increase online sales for particular occupational groups.

Combined Effect of Financial & Convenience Risk

The study's findings demonstrated that participants were unable to distinguish between potential financial risks and annoyances associated with online buying, underlining the combined influence of convenience and financial risk. For e-commerce businesses, addressing both factors simultaneously in marketing and customer service initiatives may be crucial.

Conclusions

According to the study, consumers' main concerns are managing problems on e-commerce sites and possible financial losses. This particular study implies that users' perceptions are influenced by concerns about both financial risks (loss of money or misuse of financial data) and hassles (taking time to set up the system or ordering complicated items) during the shopping process. The study discovered that two risk factors were merged into one. Young Indian internet buyers have serious concerns about things like delivery time, product faults, and mismatches (particularly in clothes). Disparities in user expectations and real product quality may increase the feeling of risk and influence consumers' decisions to shop online. Even though privacy concerns are a predictor in the research framework, the factor structure that resulted from the EFA implies that young Indian shoppers give them little weight. The shoppers seemed unconcerned about potential privacy breaches or losing control over their personal information. The competition between the leading participants in the e-shopping business in India has caused strain on the current delivery networks, notwithstanding the industry's rapid expansion. The need for improved delivery standards—including faster delivery times, higher-quality services from delivery staff, and guaranteeing product safety during transit—was emphasized by the respondents.

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