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The Growth of Online Retailing in India

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ABSTRACT

Industrial experts have agreed that India's small-scale industries are intensely competitive due to globalization, domestic economic liberalization, and digitization. The purpose of this quantitative correlational study was to evaluate the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. The theoretical foundation for this research study was the theory of planned behavior, and the unified theory of acceptance and the use of technology. The research questions examined India's online retailing growth due to transaction costs, customer satisfaction, and customer trust. The study used a quantitative correlational research design. The data collected by the survey research method were analyzed with the software package IBM SPSS. The results indicated that customer satisfaction and transaction cost are significant predictors and can explain 59% (adjusted R2 = .589) of the variance in online retailing growth in India. The previous research had not empirically verified the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. The recommendation was to include environmental factors and to increase sample size in future research. Closing the gap may contribute to a positive social change by preparing small business owners to compete against online retail growth by understanding which factors affect the growth of online retail in India. With online shopping support, small business owners can implement measures to retain and attract customers of specific demographic groups.

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Keywords: Online Retailing, E-commerce Growth, Online Retail Factors, Customer Satisfaction, Online Transaction Cost

Introduction to the Study

The purpose of this quantitative correlational study was to evaluate the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. The research questions were designed to examine online retailing growth in India due to transaction costs, customer satisfaction, and customer trust. Transaction cost is the cost to the customer for shopping from the online version of a store. Customer satisfaction indicates the fulfillment that customers derive from shopping online. Customer trust in online shopping suggests the customer's confidence in the online store. Closing the gap may contribute to positive social change by building a stable environment for small businesses in developing countries like India. Information systems management (ISM) refers to the use of technology-based tools and processes to manage information used in businesses and organizations. The ISM analyzes e-commerce data to influence e-commerce growth.

Problem Statement

Small-scale industries in India are in an intensely competitive environment due to globalization, domestic economic liberalization, and digitization of sector-specific protective measures [1]. Per the Micro, Small, and Medium Enterprises Development Act of 2006, the Indian small-scale industry can be categorized into manufacturing and service industries. The small-scale manufacturing industry has an investment of less than five crore Indian rupees, and the small-scale service industry has an investment of less than two crore Indian rupees [2]. The general management problem is that India's small-scale industry sector has reduced growth due to intense competition from large- and medium-sized domestic and multinational online retail companies [2]. There is a need to understand the development of online retailing in India.

Due to the digitization and fast growth of online retailing, many business owners in the brick-and-mortar business have realized that maintaining a robust digital presence is necessary to compete globally across the manufacturing and service sectors [3]. Customers in India are becoming more aware and comfortable with online shopping. The millennials in India prefer online shopping and have an online purchasing power, accounting for about 39% countrywide, including segments such as hotel and taxi booking [4]. The specific management problem is that online retailing's growth, due to lower online transaction costs and favorable online customer satisfaction scores, has hurt small businesses' success without an established online presence [5]. Per the India Market Research Bureau (2018), e-commerce retail was expected to grow from $39B in 2017 to $120B in 2020. At the same time, the traditional retail market has shrunk.

Purpose of the Study

The purpose of this quantitative correlational study was to evaluate the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. Digitization and online retailing growth are affecting small businesses in India [5]. In some countries, like the United Arab Emirates, the essential elements of stagnant to modest growth can be value-added costs, fear of fraud, and lack of education, culture, and customer satisfaction [6]. Many other factors need to be monitored to understand the growth and the social effects of the online retailing growth on small businesses.

In his study, observed that India's mobile telephony has had a statistically significant growth effect. E-commerce systems have grown prominently across the world, and India, with its software

eminence in the 2000s, is amongst the leaders in low-cost and efficient e-commerce services [7]. Online retailing has grown in recent years due to easier internet access. Monitoring additional factors that affect online retailing growth may help predict growth and mitigate the impact on small businesses.

Research Questions and Hypotheses

Three independent variables were derived from the literature review. The revenue increase from online retail defines the growth of online retailing in India. I used a set of three independent variables to predict the growth of online retailing in India. The prediction accuracy decreases if more dependent variables are added [8]. One assumption was that the independent variables were linear with the dependent variable, which was validated via analysis. The data types of three independent variables (transaction cost, customer satisfaction, and customer trust) are interval, and those values were used in the Multiple Linear Regression (MLR) model.

Transaction Costs

Transaction costs are incurred in online transactions similar to most economic transactions. Policing and quality enforcement costs affect customers' perception of trust and cost increase. The perception of online retailing's higher and hidden transaction costs can affect customer behavior and intention.

Customer Trust

Some strategies help build a trust relationship with online customers in countries like India. Similarity and seller expertise substantially impact relational mediators and word of mouth was critical, which expanded on the concept of customer trust is vital [9]. Online retailers also need to establish trust with the local governments for ease of business. Additionally, customer trust is essential for the Business to Business (B2B) and Business to Government (B2G) relations.

Customer Satisfaction

Customer satisfaction is measured from postpurchase product evaluation, usually a gap between product or service perception and product or service expectation [10]. Such definitions of customer satisfaction have motivated other researchers to study customer satisfaction in developing countries, with seven well-defined hypotheses establishing relationships with the aspects of usability, usefulness, and customer satisfaction from online retailing. Some recent researchers have tried to understand how customer satisfaction affects online purchase spending.

The research questions (RQs) and hypotheses for this study were as follows:

RQ1: What is the relationship between online retail transaction costs and the growth of online retailing in India?

H10: There is no relationship between online retail transaction costs and online retailing growth in India.

H1A: There is a relationship between online retail transaction costs and the growth of online retailing in India.

RQ2: What is the relationship between customer trust in online shopping and the growth of online retailing in India?

H20: There is no relationship between customer trust in online shopping and the growth of online retailing in India.

H2A: There is a relationship between customer trust in online shopping and the growth of online retailing in India.

RQ3: What is the relationship between customer satisfaction from online shopping and the growth of online retailing in India?

H30: There is no relationship between customer satisfaction from online shopping and online retailing growth in India.

H3A: There is a relationship between customer satisfaction from online shopping and the growth of online retailing in India.

Theoretical Foundation

Amongst the theories, only GST, the TPB, the TRA, and the UTAUT were essential to address the factors affecting individuals adopting online shopping [11]. Drawing on the diffusion of innovations theory (DOI) and the TPB, normative social influence has affected online shopping in China [12]. The TRA predicts peoples' behavior based on their attitudes and intentions [13]. Figure 1 shows the theoretical model.

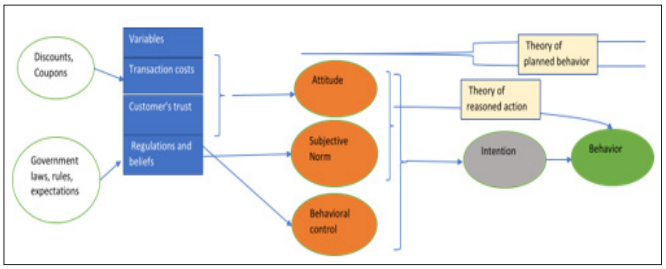

Figure 1: A Theoretical Model

I chose the TPB and the UTAUT as the foundational theories to apply for the research hypothesis. Compared to other behavioral or technology adoption theories, with the TPB, one can explain online retailing adoption at an individual level. The TPB contains the required technological, social, and behavioral foundations to construct a predictive model and derives online retail growth relationships. The variables and constructs are shown in Figure 2.

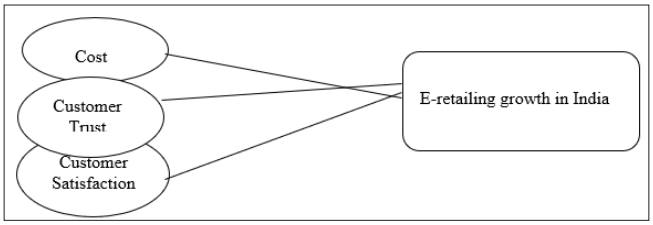

Figure 2: Research Framework Derived from the Literature Review

The research framework showed the variables studied concerning the growth of online retailing in India. Studies by concluded that Likert-type items are scales that can be inferred as equal intervals [14,15]. The literature revealed that online retailing growth negatively impacts the traditional small business retailer. The relationship between online retail growth and conventional small businesses is not explicitly shown in the research framework diagram.

Nature of the Study

The goal of this research was explanatory from the RQs, the hypotheses, and the research philosophy. If the research goal is explanatory rather than exploratory, then a quantitative methodology is suitable [16]. Whereas the research method reflects the dominant approach to conceptualizing and carrying out the research, the research design pertains to the specific research framework applied to plan and is implemented in a given research study. The research design was correlational. Researchers analyze data statistically to answer RQs and verify testable hypotheses [17]. The study population included participants of different demographic measures, such as gender, income, profession, and origin. The study's reliability was tested with Cronbach's alpha.

The scope was a cohesive view of influential factors for online retailing growth in India, focused on only India and retail industries. I did not plan to conduct a pilot survey. The research results may lack generalization as the study was scoped to India. The prediction factors were derived from the literature review and did not cover all the factors affecting India's online retailing growth.

Small businesses form the economic support structure for most of the low- and middle-class self-employed Indians. Understanding the growth patterns of online retailing may help prepare small business owners to compete with online retailers [18].

Significance of the Study

Small businesses form the economic support structure for most of the low- and middle-class self-employed Indians. Understanding the growth patterns of online retailing may help prepare small business owners to compete with online retailers [18]. The purpose of this study was to evaluate the relationship between transaction costs, customer trust, and customer satisfaction in online shopping with the growth of online retailing in India. Closing this gap may contribute to positive social change by building a stable environment for small businesses' success.

stated that identifying critical success variables in the consulting community is highly subjective due to the empirical evidence of implementation in various environments [19]. In comparing identified essential factors of the literature with those of the existing literature, the study approach was correlational. In surveying and quantitative analysis, I may contribute to a positive social change by preparing small business owners to compete and survive.

Significance to Theory

Understanding the growth patterns of online retailing will help prepare small business owners to compete [18]. The study included an underresearched area of how the factors transaction cost, customer satisfaction, and customer trust may relate to India's online retailing growth. The study result can help fill the knowledge gap of creating a predictive approach to analyzing the online retailing growth and using the system to help small business owners prepare for the competition from online retail.

Significance to Practice

stated that identifying critical success variables in the consulting community is highly subjective due to the empirical evidence of implementation in various environments [19]. In comparing identified critical factors in the literature with those of the existing literature, the study approach was correlational. In surveying and quantitative analysis, this research may enhance the decision framework for small business owners, government regulators, and the online retail providers to compete, grow, and survive.

Significance to Social Change

The purpose of this study was to evaluate the relationship between transaction costs, customer trust, and customer satisfaction in online shopping with the growth of online retailing in India. Closing this gap may contribute to positive social change by building a stable environment for small businesses' success.

Literature Review

Background of the Study

signified the importance of small-scale industries by citing that if a nation ignores its small-scale industries, it has a negative impact on the nation's economy [18]. Along those same lines, as early as 2008, Bodla and Verma brought attention to how India's small-scale industry sector has reduced growth due to intense competition from large- and medium-sized online retailing domestic and multinational companies. Moreover, provided observations that small companies in India need to compete in an online environment at a macro- and micro-level. In addition, provided information about how small-scale industries in India find themselves in an intensely competitive environment due to globalization, domestic economic liberalization, digitization, and dilution of sector-specific protective measures. also shared how online retailing was growing fast, and many business owners realized that maintaining a robust digital presence was necessary to gain consumer loyalty and compete in the global economy [1,3,5].

concluded that the success of electronic commerce (e-commerce) is a multipronged approach to systems integration and management and focuses on digital processes. Furthermore, observed that India's mobile telephony has a statistically significant growth impact. mentioned that Kirana stores in India traditionally offered location accessibility to customers. In a similar vein, provided relevant information about some of the factors affecting online retailing growth in the United Arab Emirates. Finally, defined e-commerce transaction costs to include travel time, transportation cost, shopping time, quality inspection, and other convenience expenses [6,7,20-22].

focused specifically on the Mysuru (Mysore) district's general perception as a comparatively developed region in Karnataka [23]. In contrast, as a relatively underdeveloped region, Raichur residents are aware of online retailing. added to the vitality of the concept of customer trust by claiming that similarity and seller expertise was found to have a substantial impact on relational mediators; word of mouth was also critical [9].

studied the factors affecting the online shopping behavior of Millennials [4]. A decade earlier, mentioned that government rules positively influence the macroeconomic performance of market economies. Additionally, concluded that customer trust was an essential factor in converting a user to an online buyer; online buyers are considered more affluent than offline buyers [24,25]. Finally, highlighted the relationship between online transaction costs and buying behavior [26]. Understanding the growth patterns of online retailing can help prepare small business owners to compete with online retailers [18].

There is existing literature that correlates business segments and buying behaviors with the growth of online retailing. Online retailing transaction costs vary due to country-specific pricing of payment instruments [27]. Customer trust, perceived risk, COD, and ease of use have affected customer satisfaction and online shopping growth mentioned that trust was an essential factor in converting a user to an online buyer. In some countries, like the United Arab Emirates, the essential elements of stagnant to modest growth can be value-added costs, fear of fraud, lack of education, culture, and customer satisfaction [6,25,28]. Many other factors need to be monitored to understand the growth and the social effects of online retailing on small businesses.

Scholars and researchers have conducted studies based on interconnected systems, social behavior, and individual behavior perspectives to identify new technology and delivery adoption. For example, drawing on the DOI theory and the TPB, normative social influence affects online shopping in China [12]. The TRA predicts peoples' behavior based on their attitudes and intentions

[13]. mentioned many theories relating to information systems and e-commerce failures (e.g., the TPB and the TRA) [24]. Amongst these theories, GST, the TPB, TRA, UTAUT, and UTAUT2 are essential to address the factors affecting individuals adopting online shopping, while the rest focus on technology adoption in general [11]. The constructs in the UTAUT-2 are performance expectancy, effort expectancy, social influence, perceived trust, habit, price value, and hedonic motivation.

From the literature review, the previous research has not empirically verified the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. Some existing research in other developing countries analyzed the factors affecting the growth of online retailing in those countries. The focus of some recent studies was on individual factors affecting online purchase intention in specific cities and regions in India. I did not find an existing recent study that applied MLR analysis and behavior-based analysis to understand how online retail may be growing in India, and the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India.

This study consisted of three independent variables and one dependent variable. The independent variables were transaction cost, customer satisfaction, and customer trust. The dependent variable was the growth of online retailing in India. Transaction costs occur in making financial and economic transactions, such as travel, transportation, shipping, quality inspection, and others [22]. Transaction costs can be categorized into three types: information and search costs, bargaining costs, and policing costs [29]. The variable customer satisfaction represents the average customer satisfaction scores over some time. Customer satisfaction scores are received from the customers' evaluation of the online shopping experience. The customer satisfaction variable represents the average customer satisfaction scores over some time. comparatively assessed online shopping adoption by digital immigrants and digital natives. Digital natives trusted online shopping more [30]. Some strategies help build a trust relationship with online customers in countries like India. Similarity and seller expertise were found to have a substantial impact on relational mediators, and word of mouth was the most critical outcome of relationship marketing efforts. E-commerce sites develop a strong customer relationship by building trust, and postpurchase reviews help build customer trust [31].

Literature Review Summary and Conclusions

In the literature review, I reviewed four themes:

- Comparison of different adoption theories
- Overview of online retailing adoption
- Recent development and adoption of related technology, and
- Various regression analysis methods

From the literature review, the conclusion was that the TPB and UTAUT2 were relevant for this research study. The TPB contained the required technological, social, and behavioral factors to construct a predictive model to derive online retail growth relationships.

Besides reviewing online retail's concepts and characteristics, I analyzed the current trends in online retail growth and factors. The literature review confirmed my selection of dependent variables and also explained the concepts of MLR models. The transaction costs factor has been suggested and considered in past studies as possibly influencing online retailing growth, but has not been empirically validated. Limited studies were performed on empirically determining what factors (i.e., transaction costs, customer satisfaction, and customer trust) affected online retail growth in India.

The previous research has not empirically verified the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. Some existing research in other developing countries analyzed the factors affecting the growth of online retailing in those countries. Additionally, there were some recent studies of which the focus was on individual factors affecting online purchase intention in specific cities and regions in India. I did not find a study that applied MLR analysis and behavior-based analysis to understand how online retail may be growing in India and the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. I have explained the research design, including sample selection, data collection, analysis, and validity tests. I have also shared the study results in the following sections.

Research Method

The purpose of this quantitative correlational study was to evaluate the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. The research design included a cross-sectional survey to confirm the relationship between each predictor variable and the growth of online retailing in India. The RQs examined online retailing growth in India due to transaction costs, customer satisfaction, and customer trust. Transaction cost is the cost to the customer for shopping from the online version of a store. Customer satisfaction indicates the fulfillment that customers derive from shopping online. Customer trust in online shopping suggests customer confidence in the online store.

I describe the population, sample size, sampling procedure, data collection process, survey instrument, and constructs' operationalization in the methodology section. In the data analysis plan section, I mention the software used for analysis and a description of statistical tests and interpretation. In the validity section's threats, I discuss the possible threats to construct external and internal validity and describe the ethical process followed to reuse survey instrument and data management.

Methodology

The target population of my research was comprised of Indian consumers with some online shopping experience. The entire population could not be surveyed. Therefore, a sample of members were targeted to receive the email survey across genders, rural and urban citizens of India, varying education and income levels, and different states in India. The online survey link was emailed to the survey participants. The estimated and required responses were received by sending repeated email reminders to the online administered survey. The actual sample size of N = 299 is shown in Table 1.

Table 1: Frequency Distribution Illustration for Survey Respondents' Demographics

Characteristics N = 299	Response	Valid percentage
Gender		
Male	145	48.49%
Female	154	51.51%
Age		
18–24	57	19.06%
25–34	152	50.84%
35-44	67	22.41%
45+	23	7.69%
Education level		
Undergraduate	37	12.37%
Graduate	116	38.80%
Postgraduate	146	48.83%
Annual income (Indian rupees—INR)		
< 5 Lakhs (< USD 6600)	105	35.12%
5 Lakhs – 10 Lakhs (~USD 6600–USD 13300)	124	41.47%
>10 Lakhs (> USD 13300).	70	23.41%

Sampling and Sampling Procedures

A stratified random sampling method was relevant with the following population groups or strata: age range, education level, gender, five zonal councils of India, and annual income range. The sample inclusion criteria consisted of online shoppers and long-term residents of India.

As the sample size increases, the standard error reduces and the results from sampling will be closer to that of the population. However, having a large sample was not feasible due to time and financial limitations. Therefore, the research design decisions included the values for Type-I error alpha, Type-II error beta, and the expected effect size. The Type-I error means rejecting a true null hypothesis, while the Type-II error does not reject a false null hypothesis [32]. Type-I error value should be lower (e.g., 0.05), implying that the rejection of the null hypothesis is 95% accurate. determined that the maximum Type-II error should be 0.2 (Beta = 0.2), implying an 80% chance of correctly accepting the null hypothesis [33].

For an MLR, R2 is typically useful for getting the effect size. The number of predictor variables, the estimated survey population size, confidence level, and the relative central interval position can be input to the G*power tool to calculate the sample effect size. G*Power tool is a commonly used sample size calculator. recommended the following R2 values for the desired effect sizes; R2 = .02 (yes, 2% of variance) for small effect size, R2 = .13 for medium effect size, and R2 = .26 for large effect size [33]. R2 value can be set to 0.3 to ensure a large effect size. The number of predictor variables is three for transaction cost, customer satisfaction, and customer trust. Based on the chosen Type-I error value, the confidence level is 0.95. The relative interval position can be set to 0.5.

Five power analysis types are available for each G*Power test, such as A-priori, compromise, criterion, posthoc, and sensitivity analysis [34]. I am choosing the A-priori analysis and MLR random model test. The input parameters are a two-tailed test, the H1 p2 value of 0.2935206, H0 p2 of zero, Type-I error probability of 0.05, and a statistical power value 0.95. I substitute the following values to determine G*Power H1 p2. The number of predictors is 3, the observed R2 value is 0.3, and the confidence level is 0.95. The calculation yields a p2 value of 0.2935206. For the next step of G*Power calculation, I use the p2 value as 0.2935206, test family as exact, and the statistical test as random linear multiple regression. Per the calculation and the stratified sampling method, a minimum sampling size of 57 was needed for each of the sampled strata of zonal councils in India, assuming the same population across the five zonal councils. The population groups or strata are age range, education level, gender, five zonal councils of India, and annual income range.

The target population of my research was comprised of 1,035 Indian consumers with some online shopping experience who were targeted to receive the email survey across genders, rural and urban citizens of India,varying education and income levels, and across different states in India. I collected the 299 valid individual responses in a Microsoft Excel spreadsheet. I used SurveyMonkey to design the survey page, collect survey responses, and analyze response data. SurveyMonkey is an online survey software that creates and runs online surveys. I plan to share my research summary on my Web page. The response rate for my first survey collection attempt was approximately 2%. Then, after two weeks, I received most of the responses. The survey was sent to 1,035 participants, and I received 299 completed and valid responses, for a response rate of 29%.

I used the IBM SPSS software version 25 for statistical analysis. IBM SPSS software provided descriptive statistics, inferential and linear modeling statistics, and charting. First, I examined descriptive statistics and evaluated statistical assumptions. The valid data were first analyzed for descriptive statistics. Descriptive statistics output the mean, median, range, standard deviation, and other statistical parameters for the valid sample. For the correlational analysis, the generalized linear model function in SPSS was relevant. Based on the chosen Type-I error value, the desired confidence level is 0.95.

Data Analysis Plan

I used the statistical software package IBM SPSS for descriptive and inferential statistical tests. The online survey data was stored in a Microsoft Excel worksheet for initial analysis and data cleaning. The valid and filtered Excel worksheet data was used as input for the IBM SPSS tool.

The valid data was analyzed first for descriptive statistics. Descriptive statistics outputted the mean, median, range, standard deviation, and other statistical parameters for the valid sample. I plotted scatterplots and construct validity tests for linearity, outliers, and normality. Any required data transformations was applied. For the correlational analysis, the generalized linear model function in SPSS is relevant. Based on the chosen Type-I error value, the desired confidence level is 0.95.

SPSS provided the output values of R, R2, adjusted R2, coefficients for each independent variable. To improve the MLR model's accuracy, a backward stepwise MLR was applied to plot the adjusted R2 values with each model. The best model has the highest adjusted R2 value. Also, t-statistical tests and F-statistical tests were performed to establish statistical significance and reject the null hypothesis.

Summary
The research design and methodology chosen was a quantitative cross-sectional correlational research. MLR was the research analysis method to evaluate the relationship between transaction costs, customer satisfaction, and customer trust with online retailing growth in India. The survey research was conducted online with a questionnaire derived from prepublished and validated research. The data analysis included a regression model that can predict the growth of online retailing in India based on the three predictors, according to the equation G = c0 + c1X1 + c2X2 + c3X3. In chapter 4, I have added statistical data analysis details with results and conclusions.

Results and Findings
The research design included a cross-sectional survey to confirm the relationship between each predictor variable and the growth of online retailing in India. The purpose of the RQs were to examine online retailing growth in India due to transaction costs, customer satisfaction, and customer trust.

Data Collection
The target population of my research was comprised of Indian consumers with online shopping experiences; 1,035 participants across genders, rural and urban citizens of India, varying education and income levels, and different states in India, received the email survey. The actual per zonal council strata sample size was calculated to be 57. With five strata zones, the required response was 57 multiplied by 5, which equaled 285. The survey was conducted online and received 299 valid and complete responses. The following demographic information was collected: gender, age, city in India, education level, and income range. shown below in Table 2.

Table 2: Survey Responses and Percentages by Zonal Council

Zone	Count of survey responses received	Percentage of survey responses received
Northern	57	19.06%
Central	55	18.39%
Eastern	58	19.39%
Western	68	22.74%
Southern	61	20.40%

All survey respondents mentioned that they shopped online, and more than 86% of the respondents spent more than 8 hours on the internet per week. The regression model post analysis is as shown below in Table 3.

Table 3: Model Summary[b]

R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
.768[a]	.589	.585	.39568	.589	136.331	3	285	.000	1.919

- **Predictors:** (Constant), customers trust in online shopping, customer satisfaction, transaction cost
- **Dependent Variable:** Growth of Online Retailing in India

Table 4: ANOVA[a]

Model	Sum of squares	df	Mean square	F	Sig.
1 Regression	64.033	3	21.344	136.331	.000b
Residual	44.621	285	.157		
Total	108.654	288			

- **Dependent Variable:** Growth of Online Retailing in India
- **Predictors:** (Constant), customers trust in online shopping, customer satisfaction, transaction cost

Table 5: Coefficients[a]

Variables	Unstandardized coefficients		Standardized coefficients		95% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound
(Constant)	.683	.193		3.548	.000	.304
Transaction cost	.284	.105	.259			
Customer satisfaction	.647	.084	.577	7.713	.000	.482
Customers trust in online shopping	-.050	.075	-.052	-.677	.499	-.197

The regression equation is Y = 0.683 + 0.647X1 + 0.284X2 - .05X3, where Y is the growth of online retailing in India, X1 is customer satisfaction, X2 is transaction cost, and X3 is customers trust in online shopping. The ANOVA indicated the overall statistical significance of the regression model. The predictors are customer satisfaction, transaction cost, and the customers' trust in online shopping. The growth of online retailing in India is the dependent variable. The strength and the direction are represented by covariance values Table 5 shows coefficients [17].

For customer satisfaction, the p-value of 0.000 is lesser than the alpha value of 0.05; the regression model is statistically significant. Therefore, reject the null hypothesis that customer satisfaction is not a significant predictor of Y = growth of online retailing in India and accept the alternate hypotheses that there is a relationship between customer satisfaction and the growth of online retail in India.

For transaction cost, the p-value of 0.007 is lesser than the alpha value of 0.05; the regression model is statistically significant. Therefore, reject the null hypothesis that transaction cost is not a significant predictor of Y = growth of online retailing in India and accept the alternate hypotheses that there is a relationship between transaction cost and the growth of online retailing in India. For customers trust in online shopping, the p-value of 0.499 is greater than the alpha value of 0.05, and therefore, the regression model is not statistically significant. Therefore, accept the null hypothesis that customers' trust in online shopping is not a significant predictor of Y = growth of online retailing in India. Table 6 shows the regression model summary.

Table 6: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
.767a	.589	.586	.39531	.589	204.655	2	286	.000	1.921

- **Predictors:** (Constant), Customers Trust in Online Shopping, customer satisfaction, transaction cost
- **Dependent Variable:** Growth of Online Retailing in India

The t-values are greater than 1.96. From the R2 value of .589, a moderately significant 58.9% of the growth of online retailing in India can be explained by the two independent variables of customer satisfaction and transaction cost. The R2 value has not changed much between .585 with three independent variables and .589 with two independent variables. Table 7 shows hypothesis testing results.

Table 7: Hypotheses Testing

Hypothesis	Relationship	Coefficient	t-value	Sig.	Supported
$H1_A$ - Transaction cost	There is a relationship between transaction cost and the growth of online retailing in India	.284	2.714	.007	Yes
$H3_A$ - Customer satisfaction	There is a relationship between customer satisfaction and the growth of online retailing in India	.647	7.713	.000	Yes
$H2_A$ -Customers trust	There is a relationship between customers trust in and the growth of online retailing in India	-.050	-.677	.499	No

Summary

The target population of my research was comprised of 1,035 Indian consumers with online shopping experiences across genders, rural and urban citizens of India, varying education and income levels, and different states in India who received the email survey. The survey was conducted online and I received 299 valid and complete responses, which is a sufficient number of responses.

I described the demographical distribution of the 299 responses concerning 5 zonal councils of India, hours spent on the internet per week, shopping experience in years, age group and gender, educational qualification, and annual income group. Descriptive statistics, histogram charts, and other tables were included to show survey item data and the computed composite variables. Though the reused survey instrument was already validated, I showed that the survey results were valid and reliable. I confirmed the normality, linearity, independence, convergent validity, discriminant validity, composite reliability, and homoscedasticity using various statistical and charting techniques. That included Durbin-Watson, Q-Q plot, P-P plot, histogram, scatterplots, and boxplots. The Kaiser-Meyer-Oklin (KMO) and Bartlett analyses were conducted for structural validity [35]. The reliability of the scale as a whole and concerning factors were measured to be high at .934 via Cronbach alpha reliability coefficients. After displaying the results in numerous tables and plots, the reliability of the 5-point Likert scale and the internal consistency were concluded.

Descriptive statistics output the mean, median, range, standard deviation, and other statistical parameters for the valid result set. For the three composite variables of transaction cost, customer satisfaction, and customers trust, I executed descriptive statistics in SPSS, along with skewness measurements. I also conducted ANOVA using SPSS to see if there was a significant difference in gender, income, age group, educational qualification, years of online shopping experience, and customer satisfaction.

The regression analysis indicated that customer satisfaction and transaction cost are significant predictors for the growth of online retail in India. These two factors can explain 59% of the variance in the growth of online retail in India. Customers' trust in online shopping is not a significant predictor of the growth of online retail in India. Table 22 displayed the regression equation and statistical significance. The regression equation is: Y = 0.683 + 0.647X1 + 0.284X2 - .05X3, where Y is the growth of online retailing in India, X1 is customer satisfaction, X2 is transaction cost, and X3 is customers trust in online shopping.

For customer satisfaction, the p-value of 0.000 is lesser than the alpha value of 0.05, and the regression model is statistically significant. Therefore, reject the null hypothesis that customer satisfaction is not a significant predictor of Y = growth of online retailing in India and accept the alternate hypotheses that there is a relationship between customer satisfaction and the growth of online retailing in India. For transaction cost, the p-value of 0.007 is lesser than the alpha value of 0.05, and the regression model is statistically significant. Therefore, reject the null hypothesis that transaction cost is not a significant predictor of Y = growth of online retailing in India and accept the alternate hypotheses that there is a relationship between transaction cost and the growth of online retailing in India. For customers' trust in online shopping,

the p-value of 0.499 is greater than the alpha value of 0.05, and therefore the regression model is not statistically significant. Therefore, accept the null hypothesis that customers' trust in online shopping is not a significant predictor of Y = growth of online retailing in India.

The social implication is that online shopping in India will grow as customer satisfaction improves and the transaction cost is perceived as better. The trust and risks of shopping online do not limit online shopping growth in India. While customers of some age ranges and lower-income groups have lower customer satisfaction, small business owners with no online shopping support can implement measures to retain and attract those age ranges and income population who are not yet satisfied with online shopping. Additionally, customer groups with lower annual income have lower customer satisfaction and perception of the transaction cost. Small business owners with no online shopping support can implement measures to attract and retain those demographic groups.

Research Findings and Recommendations

Research Findings

The key observations from descriptive demographic analyses are as follows. First, there was a relationship between customer satisfaction and age groups. The customer satisfaction was lower for the age groups 18 to 24 years and lower for customers over 44 years. Second, there was a statistically significant relationship between the transaction cost and the age groups. Third, there was no significant difference between customer satisfaction, transaction cost, customers' trust in online shopping, and gender. Fourth, there was a statistically significant relationship between customer satisfaction and the number of years of online shopping. Shoppers with more than 3 years of online shopping experience had a higher customer satisfaction measure than those with less than 3 years of online shopping experience. Fifth, there was a statistically significant relationship between the transaction cost and the years of online shopping. Shoppers shopping online for more than 3 years perceived transaction costs as better with online shopping than those with less than 3 years of online shopping experience. Finally, there was a statistically significant relationship between customer satisfaction, transaction cost, customers' trust in online shopping, and the annual income groups. Customers with income groups greater than five lakh rupees had higher customer satisfaction, perceived better transaction costs with online shopping, and had higher trust in online shopping.

The outcome of the regression model for each hypothesis was summarized. The outcome was tested using significance values, t values, and coefficients. The study confirmed that the significant factors affecting the growth of online retail in India are customer satisfaction and transaction cost. The conclusion is similar to study with information about some factors affecting online retailing growth in the United Arab Emirates [6]. defined e-commerce transaction costs as travel time, transportation, shopping time, quality inspection, and other convenience expenses [22]. examined the benefits and costs of electronic banking compared to paper banking [36]. The researcher concluded that electronic banking was beneficial from a transaction cost perspective. The conclusion of Kaur's study applied to e-commerce banking and transaction cost evaluations and evaluated how online transactions were affected by cost, value, and return. Recent research studies have called transaction cost out to influence online sales such as in banking, education, retail, and travel. recently examined how e-commerce businesses may reduce transaction costs and improve overall business processes [37]. Dijesh and Babu mentioned that offline transactions had to include the number of transactions as a factor, unlike online transactions.

Not all factors mentioned in some studies were confirmed as I concluded that customers' trust in online shopping is not a predictor of the growth of online shopping in India. The previous studies concluded that customer trust in online shopping had a significant relationship with the growth of online retailing. determined that online shopping customer's trust in the vendor is an essential factor [38]. studied C2C online shopping using the UTAUT and the initial trust model theoretical frameworks to understand how customers' trust in online shopping was related to online retailing growth in Ghana, Africa [39]. The hypotheses evaluation is summarized as follows.

Hypothesis 1: Transaction Cost -> Growth of Online Retailing in India

For transaction cost, the significance value of 0.007 was lesser than the alpha value of 0.05, and the regression model was statistically significant. The t value indicated that the confidence interval was greater than 99%. There is a relationship between transaction cost and the growth of online retailing in India. defined e-commerce transaction costs like travel time, transportation cost, shopping time, quality inspection, and other convenience expenses. Hwang and explored how EDI affects the competitiveness of a firm's SCM to show the mediating effect between environmental uncertainty, behavioral uncertainty, and transaction cost [22,40].

Hypothesis 2: Customers Trust in Online Shopping -> Growth of Online Retailing in India

For customers' trust in online shopping, the p-value of 0.499 was greater than the alpha value of 0.05, and the regression model was not statistically significant; therefore, I accepted the null hypothesis. There was no relationship between customers' trust in online shopping and the growth of online retailing in India. However, concluded that trust was essential in converting a user to an online buyer [25,]. explored how customer trust affects customer retention with a quantitative study to improve customer retention for India's online businesses based on how the customer was acquired and the length of customer engagement [41].

Hypothesis 3: Customer Satisfaction -> Growth of Online Retailing in India

For customer satisfaction, the significance value of 0.000 was lesser than the alpha value of 0.05, and the regression model was statistically significant. The t value was greater than 1.96, and the confidence interval was greater than 99%. There was a relationship between customer satisfaction and the growth of online retailing in India. Customer satisfaction is measured from postpurchase product evaluation, usually a gap between product or service perception and product or service expectation [10]. defined how customer satisfaction improved online retailing due to perceived usability [42]. There is a direct positive relationship between e-satisfaction, e-loyalty, and e-service quality with e-commerce spending [43]. also mentioned that e-commerce faces challenges from offline retailing as the consumers could not feel and try the products; therefore, they bought products they did not intend to purchase [43].

Though customer satisfaction and transaction cost explain the variance in the growth of online retail in India, the factors vary in how much they affect the outcome variable. The regression equation is $Y = 0.683 + 0.647X^1 + 0.284X^2 - .05X^3$, where Y is the

growth of online retailing in India, X^1 is customer satisfaction, X^2 is transaction cost, and X^3 is customers' trust in online shopping. After removing the insignificant variable customers' trust in online shopping, the regression equation is $Y = 0.692 + 0.641X^1 + 0.24X^2$. shown below in Table 8.

Table 8: Coefficients[a]

	Unstandardized coefficients		Standardized coefficients			95% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
Constant)	.692	.192		3.604	.000	.314	1.070
Transaction cost	.240	.081	.218	2.943	.004	.079	.400
Customer satisfaction	.641	.083	.571	7.693	.000	.477	.805

The regression equation is Y = 0.692 + 0.641X1 + 0.240X2, where Y is the growth of online retailing in India, X^1 is customer satisfaction, and X^2 is transaction cost. For customer satisfaction, the p-value of 0.000 was lesser than the alpha value of 0.05, and the regression model was statistically significant. Therefore, I rejected the null hypothesis that customer satisfaction is not a significant predictor of Y = growth of online retailing in India and accepted the alternate hypothesis that there is a relationship between customer satisfaction and the growth of online retailing in India. For transaction cost, the p-value of 0.004 was lesser than the alpha value of 0.05, and the regression model was statistically significant. Therefore, I rejected the null hypothesis that transaction cost is not a significant predictor of Y = growth of online retailing in India and accepted the alternate hypothesis that there is a relationship between transaction cost and the growth of online retailing in India. Table 9 shows the regression model summary.

Table 9: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
.767a	.589	.586	.39531	.589	204.655	2	286	.000	1.921

- **Predictors:** (Constant), Customers Trust in Online Shopping, customer satisfaction, transaction cost
- **Dependent Variable:** Growth of Online Retailing in India

The t-values are greater than 1.96. From the R2 value of .589, a moderately significant 58.9% of the growth of online retailing in India can be explained by the two independent variables of customer satisfaction and transaction cost. The R2 value has not changed much between .585 with three independent variables and .589 with two independent variables.

Recommendations

Future studies can increase the sample size and boost samples with structural equation modeling analysis. Though customer satisfaction and transaction cost explain the variance in the growth of online retail in India, the factors varied in how much they affected the outcome variable. Boosting by 500 terms may strengthen the regression model further and strongly indicate the effect of each predictor variable. Also, the hypotheses can include more predictor variables. The literature review revealed additional variables such as culture and government regulation studied in UAE. Due to time and resource constraints, I did not include all the factors shown in the literature review. A moderately significant 58.9% growth of online retailing in India can be explained by the two independent variables of customer satisfaction and transaction cost. Therefore, 41% of the variance of online retail growth in India could not be explained by the study's model. Future research may consider other external moderating factors.

Demographic understanding can be enhanced by analyzing per zone or state-wise data. Rural versus urban location studies will also be beneficial. Increasing sample size can help with researching per zone or state-wise. My study can be used as a baseline to study the growth of different online shopping categories such as grocery, clothing, toys, books, and electronics. Other scholars may conduct similar studies using the same survey instrument but with different demographics, countries, and online shopping categories to enhance generalization.

Future studies may survey at least twice with a gap of two to three months between surveys. Such interval surveys may provide richer comparison responses. As the technology, consumer needs, and acceptance of online retail are changing rapidly, researchers referring to my study in the future may get different results. Therefore, the survey and analysis may be repeated as major technology adoption milestones are reached or newer consumer needs arise.

Implications

From descriptive analysis, online shopping frequency is comparatively low for some demographics. Online retailers may use this study's results to focus their business plans to retain existing customers and attract new customers. Also, small businesses may plan to invest in online shopping to attract population segments they may be losing to retailers with better online shopping experiences. The positive conclusion for small businesses with no online shopping experience is that a clear demographic segment population is not very satisfied with online shopping.

The social implication is that online shopping in India will grow as customer satisfaction improves and the transaction cost is better. The trust in online shopping does not limit online shopping growth in India. While customers of some age ranges and lower-income groups have lower customer satisfaction, small business owners with no online shopping support can implement measures to retain

and attract those age range and income population who are not yet satisfied with online shopping. For example, explained how the Dharavi cotton industry markets helped compete with the e-commerce markets by providing a Dharavi public market. Also, customer groups with lower annual income have lower customer satisfaction and perception of the transaction cost [44]. As an important positive social change implication, with growing mobile technology adoption, small business owners can better compete by providing an online portal experience for their customers. With some online shopping support, small business owners can implement measures to retain and attract specific demographic groups.

Under theoretical implication, I confirmed that the behavioral and technological adoption factors were significant to predict the growth of online retailing in India. It aligned with other literature such as However, concluded that trust was essential in converting users to online buyers. explored how customer trust affects customer retention with a quantitative study to improve customer retention for India's online businesses based on how the customer was acquired and the length of customer engagement [25,41,42]. Not all factors mentioned in some studies were confirmed as my research concludes that customers' trust in online shopping is not a predictor of the growth of online shopping in India.

The study included an under-researched area of how the factors transaction cost, customer satisfaction, and customer trust may relate to India's online retailing growth. The study result may help fill the knowledge gap of creating a predictive approach to analyzing the online retailing growth and using the system to help small business owners prepare for the competition from online retail.

From the literature review, the previous research had not empirically verified the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. Some existing research in other developing countries analyzed the factors affecting the growth of online retailing in those countries. The focus of some recent studies was on individual factors affecting online purchase intention in specific settings. I had not found an existing recent study that applied MLR analysis and behavior-based analysis to understand how online retail may be growing in India, and the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India.

The empirical phenomenon is confirmed for the two factors that showed a statistically significant relationship with online retailing growth in India. The key findings concluded that customer satisfaction and transaction cost have a statistically significant relationship with the growth of online retailing in India. The predictability seemed moderately high, with an adjusted R squared value of 0.589. The customers' trust in online shopping was not statistically significant with the growth of online retail in India. Future studies can include more factors that were excluded from my research.

Conclusions

The purpose of my research study was to evaluate the relationship between transaction costs, customer satisfaction, and customer trust in online shopping with the growth of online retailing in India. I collected data using a validated survey instrument. I completed a comprehensive data analysis with validity, normality, and reliability confirmations. The study confirmed that the significant factors affecting 59% of the variance in the growth of online retail in India were customer satisfaction and transaction cost. Customers' trust in online shopping was not found to be a significant factor. Variable bias may exist due to missing other critical factors which explain the remaining 40% of the variance in the growth of online retail in India. The literature review did help with choosing the predictor variables [45-48].

The regression equation is: $Y = 0.683 + 0.647X1 + 0.284X2 - .05X3$, where Y is the growth of online retailing in India, X1 is customer satisfaction, X2 is transaction cost, and X3 is customers' trust in online shopping. After removing the insignificant variable customers' trust in online shopping, the regression equation is: $Y = 0.692 + 0.641X1 + 0.24X2$. From the adjusted R2 value of .589, a moderately significant 58.9% of the growth of online retailing in India can be explained by the two independent variables of customer satisfaction and transaction cost.

The study confirms that the significant factors affecting the growth of online retail in India are customer satisfaction and transaction cost. The conclusion is similar to previous research studies under different research settings. Not all factors mentioned in some studies were confirmed as my study concludes that customers trust in online shopping is not a predictor of the growth of online shopping in India. The previous studies concluded that customer trust in online shopping had a significant relationship with the growth of online retailing.

Future studies can increase the sample size and use boosting samples with structural equation modeling analysis. Boosting by 500 terms may strengthen the regression model further and strongly indicate the effect of each predictor variable. The survey sample size can be larger than the minimum required participation for accurate statistical analysis and detection. The study did not attempt to generalize the findings to other developing countries.

Though customer satisfaction and transaction cost explain the variance in the growth of online retail in India, the factors varied in how much they affected the outcome variable. Also, more predictor variables can be included in the hypotheses. The literature review showed additional variables such as culture and government regulation studied in different settings and countries.

The social implication is that online shopping in India may grow as customer satisfaction improves and the transaction cost is better. The trust in online shopping do not limit online shopping growth in India. Online retailers may use this study's results to focus their business plans to retain existing customers and attract new customers. Also, small businesses may plan to invest in online shopping to attract population segments they may be losing to retailers with better online shopping experiences. The positive conclusion for small businesses with no online shopping experience is that a clear demographic segment population may not be very satisfied with online shopping. Finally, my research study filled the academic research gap in the current empirical understanding of how factors such as customer satisfaction, transaction cost, and customer's trust in online shopping affected the online retailing growth in India. The study may provide insights into some demographic consumers in India that do not prefer online shopping.

Statements and Declarations

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