



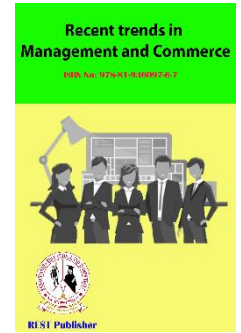
## Recent trends in Management and Commerce

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## Impact of online shopping on consumers

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**Abstract:** The advent of the internet, digitalization, and technology has brought about significant changes in consumer patterns and habits. The implications of these changes for society, whether positive or negative, are still subject to ongoing debate. The environmental effects of online and omnichannel retail are a topic of debate, with differing opinions on both sides. Advocates highlight the efficiency of home deliveries compared to individual shopping trips, while others emphasize the complexities of consumer behavior. Despite extensive research, there is currently no consensus on this issue. The fragmented and contradictory nature of existing scientific knowledge makes it challenging for policymakers and practitioners to implement sustainability measures and guide consumers towards eco-friendlier practices. To tackle this problem, this article proposes a framework that comprehensively examines the environmental sustainability of shopping, based on a systematic literature review. The framework considers three key aspects that need to be collectively evaluated: individual purchases, consumer behavior, and consumption geography. While many studies focus on the environmental impact of single or basket purchases and generally favor e-commerce over in-store purchases, the equation changes when considering behavioral changes and geographical factors. While there is a growing interest in studying consumer behavior, empirical work that considers the spatial organization of businesses and consumers is scarce. This article goes beyond individual case studies and presents a comprehensive framework that can direct future discussions and research towards more sustainable paths. Moreover, with the increasing use of internet-connected devices by consumers for online shopping, the visual aspects of information presented in this medium have become a crucial subject for investigation and practical application. Drawing on fluency theory and environmental psychology, this study specifically explores how consumers' perception of fluency in written online information influences their cognitive effort and positive emotions when making choices. The results of the experiment indicate that how easily we perceive things affects both the mental effort we put in and the positive emotions we experience while shopping online. Furthermore, the level of mental effort and positive emotions we have also affects our judgments about the quality of the choices we make. This study is important because it examines the interaction between three aspects of processing fluency (how easily we perceive things, our emotional state, and the mental effort we exert) and how they impact consumer satisfaction with online shopping. Research on the impact of online shopping on consumers has explored various aspects and yielded several findings. Some of the key research findings and the significance of these impacts are: Convenience and Time Savings: Online shopping offers convenience and time savings for consumers. Research has consistently shown that consumers value the ability to shop anytime and anywhere, without the need to visit physical stores. This convenience factor has led to increased adoption of online shopping platforms. The significance of this impact is that it provides consumers with more flexibility and freedom in their shopping experiences, accommodating busy lifestyles and saving time. Product Selection and Information Access: Online shopping provides consumers with access to a vast array of products and detailed information about them. Research has found that consumers appreciate the extensive product selection and the ability to compare prices and features easily. This impact is significant as it empowers consumers with greater choice and enables them to make more informed purchasing decisions. Price Comparisons and Discounts: Online shopping platforms facilitate easy price. SPSS, short for Statistical Package for the Social Sciences, is a popular software application utilized extensively in statistical analysis and data management. It provides a wide range of features and functionalities that allow researchers, statisticians, and data analysts to manipulate and investigate data, conduct statistical tests, generate reports, and visualize results. By facilitating the exploration, organization, and interpretation of data, SPSS proves to be an invaluable resource in various disciplines such as social sciences, market research, and business analytics. It is particularly popular in social sciences research, but it is also used in various other fields such as marketing, healthcare, and finance. SPSS offers a user-

friendly interface and supports both basic and advanced statistical analyses, making it accessible to users with varying levels of statistical expertise.

*Input parameter: How often you purchase online? Your past experience with online shopping, have you faced problems on online shopping, do you think online shopping is risky? Would u engage in online shopping in the next 3 months? Do u feel that online shopping makes comparison easy?*

*In light of the global COVID-19 pandemic, which accelerated the widespread adoption of e-commerce worldwide, this research aims to address a crucial question: What is the overall environmental impact of online shopping? As new retail models such as Omni channel retail with click-and-collect and ship-from-store, along with the rise of delivery services like meal kits and subscriptions, as well as the digitalization of consumption (e.g., streaming music, e-books, and films) become more prevalent, it becomes increasingly challenging to comprehend the environmental consequences of shopping through different retail channels. While there are no universal models available to fully assess how virtual transactions affect the physical world, this article proposes a framework comprising three categories of impact. These categories include analyzing the environmental effects of individual purchases, understanding consumer behavior, and examining the geographical aspects of consumption.*

**Keywords:** Fresh agricultural products, fresh e-commerce, online purchase willingness, structural equation model

## 1. INTRODUCTION

In 2019, the fresh e-commerce sector in China faced challenges due to industry restructuring and intense competition following a decade of rapid growth. Nevertheless, in spite of these challenges, the fresh e-commerce sector witnessed an impressive expansion, with its market size reaching 162 billion Yuan, representing a remarkable growth rate of 29.2%. Nonetheless; the online penetration rate for fresh agricultural products in China remained below 10% compared to the overall market scale of 2 trillion Yuan. Moreover, in 2019, the number of daily active users of fresh e-commerce was 5.88 million, primarily concentrated in major cities and economically developed coastal provinces, indicating significant untapped potential in the market. The sudden emergence of the new corona virus in the beginning of 2020 created an unexpected chance for the emergence of new online businesses, leading to a remarkable expansion of the e-commerce industry. Established customers reinforced their purchasing patterns, while new customers also became part of these platforms, contributing to the industry's rapid growth. However, the experiences and expectations of new and old users differ, and their behavior characteristics are influenced by various factors to varying degrees. To understand the relationship between behavior, behavioral intention, and influencing factors in the context of fresh e-commerce, the theory of planned behavior (TPB) proposed by Ajzen in 1991 provides valuable insights from societal and psychological perspectives. According to TPB (Theory of Planned Behavior), an individual's intention to behave in a certain way is influenced by three factors: attitude, subjective norms, and perceived behavioral control. Attitude refers to an individual's thoughts and beliefs regarding the adoption of a specific behavior. Subjective norms consider the social pressures and expectations exerted by relevant groups on the individual. Perceived behavioral control relates to an individual's belief in their ability to control and perform the intended behavior. Various empirical studies have applied TPB to examine consumer purchase behavior. For example, Wu's research revealed that subjective norms and behavioral control directly impact online purchase behavior [3]. Additionally, Liang et al. found that behavior attitude, subjective norms, and behavioral control have a positive influence on the intention to purchase specialty food [4]. O'Connor et al. highlighted the positive effects of behavior attitude and subjective norms on purchase intention in their study of functional food purchase behavior in Australia [5]. These studies demonstrate the applicability of TPB in understanding and predicting consumer purchase behavior in various contexts. Forrester Research predicts that online retail in the United States will experience substantial growth, with estimates reaching \$262 billion by 2013 and \$370 billion by 2017. This indicates a compound annual growth rate of 10% (Mulpuru, 2013). One of the main factors driving consumers to the internet is their desire to find relevant information for their shopping needs (Horrihan, 2008). As the use of internet-connected devices such as tablets and smart phones becomes increasingly widespread, it is crucial to understand how consumers perceive and interact with online information. Consequently, there has been a growing interest in researching the characteristics of online information and its influence on consumer shopping behaviors. Recent studies have shown that under conditions of high assortment, verbal product information leads to a lower probability of choice deferral compared to visual information. This study specifically examines how the way online product information is presented verbally affects various aspects of the online shopping experience. The study is based on the concept of perceptual fluency, which refers to how easily individual's process information based on its visual appearance. Previous research conducted offline has shown that processing fluency influences judgments, including brand perception and truth assessment. This research argues that perceptual

fluency plays a crucial role in the online commercial context, influencing consumers' perception of cognitive effort, positive emotions, and ultimately, their decision-making regarding online shopping choices. Previous studies have emphasized the importance of perceptual processes in shaping consumer attitudes and intentions in online shopping, and managers have also recognized the significance of optimizing product presentations on web pages. However, limited attention has been given to how the informational aspects impact consumers' perceptual processes online. Some studies have explored perceived website complexity, diagnosticity, online display factors, and visual information quality, but further research is needed to investigate the factors that influence consumers' perceptions of online information and their consequences.

**SPSS Method:** SPSS (Statistical Package for the Social Sciences) is a popular software program used for statistical analysis in various research fields. It provides researchers with a range of tools and features to analyze and interpret data. Here is a brief overview of the SPSS method: Data entry: Enter your data into SPSS or import it from other sources such as Excel or CSV files. Variable definition: Define variables, including assigning variable names, data types (e.g., numeric, string), and variable labels. Data cleaning: Clean your data by identifying and handling missing values, outliers, and data inconsistencies. Perform statistical calculations to summarize your data, including measures of central tendency such as the mean and median, as well as measures of variability like the standard deviation and range. These descriptive statistics provide a concise summary of your data's key characteristics. Data exploration: Use various charts, graphs, and tables to explore the distribution and relationships between variables. Inferential statistics: Conduct inferential statistical tests to analyze relationships, differences, or associations between variables. This may include t-tests, ANOVA, regression analysis, chi-square tests, and more. Model building: Build statistical models to examine the relationships between variables and make predictions. This can involve multiple regression, logistic regression, factor analysis, etc. Output interpretation: Interpret the statistical output generated by SPSS, including significance levels, coefficients, p-values, and effect sizes. Reporting results: Summarize and report the findings of your analysis, including any significant patterns, relationships, or insights obtained from the data. SPSS provides a user-friendly interface that allows researchers to perform statistical analyses through a point-and-click system. However, more advanced users can also utilize SPSS syntax, which involves writing commands to automate analysis procedures and enhance reproducibility. Keep in mind that the specific analysis methods in SPSS will depend on your research questions, study design, and the type of data you have. It is important to have a good understanding of statistical concepts and consult relevant resources or seek guidance from experts when using SPSS for data analysis. To utilize SPSS, you need to have the software installed on your computer and a basic understanding of statistical concepts and research design. SPSS provides a user-friendly interface for performing statistical analyses, and it also allows for customization and automation of analysis procedures through syntax programming. It is important to note that the specific methods used in SPSS will vary depending on your research design, variables of interest, and analysis goals. It is recommended to consult relevant statistical textbooks, online resources, or seek guidance from a statistician or researcher experienced in using SPSS to ensure proper application of the software for your specific study.

## 2. MATERIAL AND METHOD

To study the impact of online shopping on consumers, researchers typically employ various materials and methods. Here is an outline of the commonly used materials and methods in this research area:

**Survey Questionnaires:** Researchers often design and distribute survey questionnaires to collect data from consumers. These questionnaires may include items related to consumer behavior, attitudes towards online shopping, satisfaction levels, preferences, and perceived impacts. The questionnaires may be administered online or in-person, depending on the research design and target population.

**Experimental Design:** Researchers may conduct controlled experiments to study specific aspects of online shopping and its impact on consumers. In experimental studies, participants are randomly assigned to different conditions, such as online shopping versus in-store shopping, to compare their responses and behaviors. Various metrics, such as purchase intentions, decision-making processes, or emotional responses, can be measured to assess the impact.

**Data Collection:** Data on consumer behavior and attitudes towards online shopping can be collected through multiple channels. These include online surveys, in-person interviews, focus groups, or online monitoring of consumer activities (e.g., tracking website browsing behavior, purchase history, or online reviews). Data collection methods depend on the research objectives, sample size, and available resources.

**Data Analysis:** Researchers use statistical analysis techniques to examine the collected data. Commonly employed methods include descriptive statistics, inferential statistics (e.g., t-tests, chi-square tests), regression analysis, factor analysis, and structural equation modeling. These analyses help identify patterns, relationships,

and significance levels between variables and determine the impact of online shopping on consumer behavior and outcomes.

**Qualitative Research:** In addition to quantitative approaches, qualitative research methods can provide insights into the subjective experiences and perceptions of consumers. Techniques such as interviews, focus groups, or content analysis of online reviews and comments can be employed to understand consumers' opinions, motivations, and concerns related to online shopping.

**Literature Review:** Researchers often conduct a comprehensive review of existing literature to understand previous findings, identify research gaps, and build upon existing knowledge. This includes reviewing academic articles, industry reports, and other relevant sources to inform the research design and methodology.

**Ethical Considerations:** Researchers need to ensure ethical practices in data collection, handling, and reporting. This involves obtaining informed consent from participants, protecting their privacy and confidentiality, and complying with relevant ethical guidelines and regulations. Overall, the materials and methods used in studying the impact of online shopping on consumers vary depending on the research objectives, research design, and available resources. A combination of quantitative and qualitative approaches, along with appropriate statistical analysis techniques, helps researchers gain a comprehensive understanding of consumer behavior and the effects of online shopping.

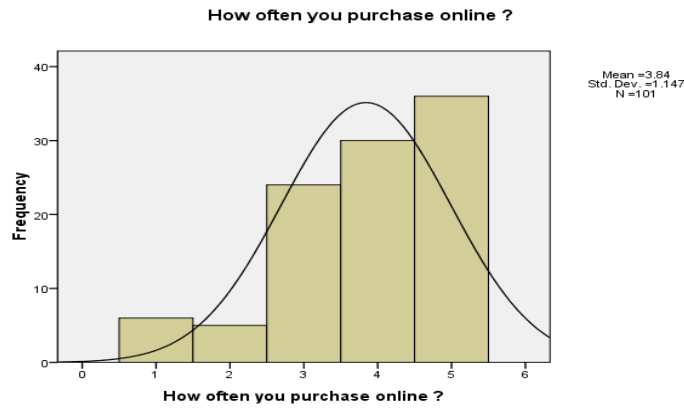
### 3. RESULT AND DISCUSSION

TABLE 1. Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
How often you purchase online?	101	4	1	5	388	3.84	.114	1.147	1.315	-.860	.240	.137	.476
Your past experience with online shopping	101	4	1	5	382	3.78	.116	1.163	1.352	-.886	.240	.150	.476
Have you faced problems on online shopping?	101	4	1	5	370	3.66	.128	1.283	1.646	-.734	.240	-.448	.476
Do you think online shopping is risky?	101	4	1	5	382	3.78	.132	1.324	1.752	-.855	.240	-.406	.476
Would u engage in online shopping in the next 3 months?	101	4	1	5	417	4.13	.121	1.214	1.473	-1.279	.240	.595	.476
Do u feel that online shopping makes comparison easy?	101	4	1	5	396	3.92	.130	1.309	1.714	-.861	.240	-.584	.476
Valid N (listwise)	101												

Table 1 presents the descriptive statistics for the analysis, including the following values: sample size (N), range, minimum value, maximum value, mean, standard deviation, variance, skewness, and kurtosis. I would like to inquire about your online shopping habits. How frequently do you make online purchases? Can you share your past experiences with online shopping? Have you encountered any issues or problems while shopping online? Additionally, would you be interested in engaging in online shopping within the next three months? Lastly, do you feel that online shopping facilitates easy product comparison?

**Histogram:**



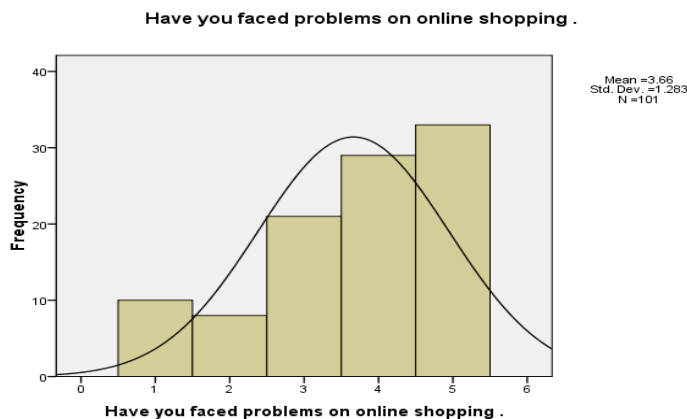
**FIGURE 1.** How often you purchase online?

The histogram plot depicted in Figure 1 illustrates the distribution of responses to the question "Do you feel that online shopping makes comparison easy?" It is evident from the figure that the data exhibit a slight left skewness. This skewness is attributed to a greater number of respondents selecting the value 5 for the aforementioned question. Conversely, the distribution of values other than 5 closely aligns with a normal curve, indicating that the model significantly adheres to a normal distribution.



**FIGURE 2.** Your past experience with online shopping

The histogram in Figure 2 displays the distribution of responses regarding your past experience with online shopping. The data appear to be slightly skewed to the left, as indicated by a larger number of respondents selecting the value 4. However, apart from the 4 values, all other values align with the normal curve, indicating that the model closely follows a normal distribution.



**FIGURE 3.** Have you faced problems on online shopping?

The histogram plot in Figure 3 illustrates the distribution of responses to the question "Have you faced problems on online shopping?" It is evident from the figure that the data exhibit a slight left skewness. This skewness is primarily caused by a larger number of respondents selecting a rating of 5 for their experiences with online shopping problems. In contrast, the remaining values appear to be distributed relatively close to a normal curve. This indicates that the overall distribution of the data closely follows a normal distribution, with the exception of the pronounced peak at the value of 5.



FIGURE 4. Do you think online shopping is risky?

Figure 4 depicts a histogram plot illustrating the perception of risk associated with online shopping. The data in the histogram display a slight left skew, indicating that a larger number of respondents chose the rating of 5 for the question "Do you think online shopping is risky?" Apart from the values of 5, all other ratings align with the normal curve, suggesting that the model significantly adheres to a normal distribution

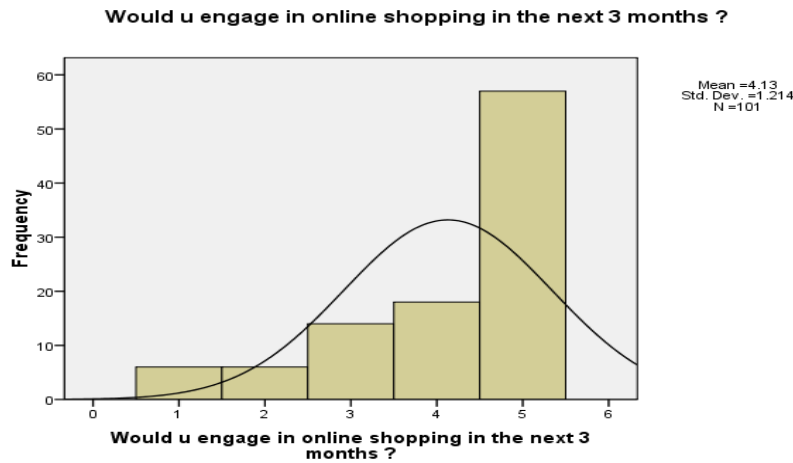


FIGURE 5. Do you think online shopping is risky?

The histogram in Figure 5 displays the distribution of responses to the question "Do you think online shopping is risky?" It is evident from the figure that the data exhibits a slight left skew. This skewness is primarily caused by a larger number of respondents selecting the value of 5 for their perception of the risk involved in online shopping. However, apart from these occurrences of 5, the remaining values align closely with a normal distribution curve, indicating that the data generally follows a normal distribution. This observation suggests that the model used for the analysis is significantly conforming to a normal distribution pattern, with the exception of the higher frequency at the value of 5.



**FIGURE 6.** Would u engage in online shopping in the next 3 months?

The histogram in Figure 5 illustrates the distribution of responses to the question "Would you engage in online shopping in the next 3 months?" From the figure, it is evident that the data is slightly skewed to the left, indicating that a higher number of respondents chose the value of 5 for their intention to engage in online shopping in the next 3 months. However, the remaining values are distributed in a manner that aligns with a normal curve, suggesting that the overall pattern follows a normal distribution

**TABLE 2.** Correlations

	Mean	Std. Deviation	N
SL NO	51.00	29.300	101
How often you purchase online?	3.84	1.147	101
Your past experience with online shopping	3.78	1.163	101
Have you faced problems on online shopping	3.66	1.283	101
Do you think online shopping is risky?	3.78	1.324	101
Would u engage in online shopping in the next 3 months ?	4.13	1.214	101
Do u feel that online shopping makes comparison easy ?	3.92	1.309	101

Table 2 displays the correlations between various motivation parameters and their relationship to different factors. When examining the frequency of online purchases, it is observed that Employee Attitudes exhibit the strongest correlation, while Your past experience with online shopping has the weakest correlation. Moving on to the motivation parameters for Employee Attitudes related to Internal Marketing, it is found that the highest correlation exists with External Marketing, which, in turn, demonstrates the lowest correlation. Similarly, when considering Employee Behavior and the perception of risk in online shopping, the highest correlation is found with Do you think online shopping is risky?, whereas Employee Attitudes exhibit the lowest correlation. Shifting focus to External Marketing and the likelihood of engaging in online shopping within the next 3 months, it is revealed that this factor has the highest correlation, while Employee Attitudes exhibit the lowest correlation. Lastly, when analyzing the motivation parameters for Do you feel that online shopping makes comparison easy?, it is noted that Employee Behavior demonstrates the highest correlation, whereas Employee Attitudes have the lowest correlation.

**TABLE 3.** Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.797	.798	6

Cranach's Alpha Reliability results are presented in Table 3. The model exhibits an overall Cranach's Alpha value of .797, indicating a reliability of 79%. Based on the information gathered from the literature review, the model with a Cranach's Alpha value of 79% can be deemed suitable for analysis.

**TABLE 4.** Summary Item Statistics

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.853	3.663	4.129	.465	1.127	.025	6
Item Variances	1.542	1.315	1.752	.437	1.333	.035	6
Inter-Item Covariances	.610	.323	1.000	.678	3.101	.044	6
Inter-Item Correlations	.397	.212	.630	.418	2.971	.017	6

Table 4 Shows the Reliability Statistic individual parameter Summary Item Statistics a Reliability results in Your past experience with online shopping Minimum 3.663, Mean 3.853, Maximum 4.129,

**TABLE 5.** Cranach's Alpha if Item Deleted

	Cranach's Alpha if Item Deleted
How often you purchase online?	.773
Your past experience with online shopping	.787
Have you faced problems on online shopping?	.768
Do you think online shopping is risky?	.765
Would u engage in online shopping in the next 3 months?	.725
Does u feel that online shopping makes comparison easy?	.774

Table 5 Shows the Reliability Statistic individual parameter Cranach's Alpha Reliability results in Your past experience with online shopping .773, Your past experience with online shopping .787, Have you faced problems on online shopping.768, and Do you think online shopping is risky? .765,Would u engage in online shopping in the next 3 months?.725. Do u feel that online shopping makes comparison easy? .774.

#### 4. CONCLUSION

The main accomplishment of this research paper was the integration of the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB), combining them with trust and perceived risk factors to examine consumers' intentions to engage in online shopping. The paper also sought to provide clarity on the previously unclear connection between perceived risk and online shopping intentions. The results of the study indicated that consumers' intentions to shop online are influenced by several factors, including perceived usefulness, perceived ease of use, attitude, subjective norms, and perceived risk. These findings are consistent with the conclusions reached in a previous study conducted by Shin Chang and Went Chen in 2008. Based on these results, the paper suggests that retailers should seek ways to minimize consumers' perceived risk in order to promote their intentions to shop online. For financial risk, retailers can offer payment methods such as Cash on Delivery or payment through third-party platforms to alleviate concerns about losing money without receiving goods or services. To address product risk, sellers should provide accurate and detailed product photos, utilizing technologies like 3D images or virtual samples for tangible products. For digital products, offering trial versions or limited-time experiences can help customers evaluate and make informed purchase decisions. The paper also emphasized the importance of perceived ease of use in influencing consumer online shopping intention. Retailers should design user-friendly websites that enable easy searching, shopping, and payment processes. Sophisticated website organization, integrated search engines, and comparison tools can assist consumers in finding suitable solutions efficiently. Additionally, considering the global context of online shopping, websites should offer multiple languages to cater to diverse target customers. However, the paper acknowledged some limitations.



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