

## **Decoding the Enigma: Exploring Influential Factors in the Phenomenon of Online Shopping Cart Abandonment**

<sup>1</sup> T. S. Arthi, <sup>2</sup>M. Blessy Doe

<sup>1</sup> Assistant Professor, Sri Ramakrishna Engineering College, Coimbatore, Tamilnadu, India

<sup>2</sup> Assistant Professor, Sri Ramakrishna Engineering College, Coimbatore, Tamilnadu, India

**Abstract:** - This study examined the factors that contribute to online shopping cart abandonment in several product categories. The main goals were to examine how price, user experience, infrequent purchase behaviour, and cart abandonment interact when shopping online, with a focus on various product categories. An online survey method was used to collect responds from 302 respondents in Coimbatore and Chennai. Reliability test and Spearman's Correlation Coefficient was conducted using IBM SPSS version 16.0. Specific to product categories, the results showed a significant association between low purchase frequency, cost, user experience, and cart abandonment. Notably, the results highlight how price has the biggest impact on shopping cart abandonment, with user experience and infrequent purchases coming in second and third position. These findings greatly advance our understanding of customer behaviour in the context of online buying and have useful ramifications for companies and legislators looking to maximise tactics throughout different product categories.

**KeyWords :** *Online Shopping, Cart Abandonment, Experience, Purchase Behavior, User Experience*

### **Introduction**

Electronic commerce (e-commerce) has emerged as a key driver of economic growth, particularly in dynamic markets like India. In this era of digital transactions, the virtual shopping cart is an important instrument for designing the online consumer experience. However, the e-commerce business has a recurring issue: online shopping basket abandonment. This issue arises when consumers start the purchasing process by adding things to their digital carts but then decide not to complete the transaction.

Understanding the complex elements that contribute to online shopping cart abandonment is critical for organizations looking to improve their operations and consumer happiness. This study article seeks to explore this phenomenon, with a particular emphasis on the product category perspective, to unravel the subtle behaviors of online customers.

The distinct behaviors displayed by online shoppers, characterized by the tendency to leave things in carts without quick purchase, provide an intriguing field for investigation. This study conducts an in-depth investigation into the multidimensional interactions between important variables—price, user experience, low purchase frequency, and cart abandonment—in Tamil Nadu cities.

### **Background Of The Study**

The rise of electronic commerce (e-commerce) as an economic powerhouse, particularly in vibrant areas such as India (Smith et al., 2020), emphasises the importance of the virtual shopping cart in influencing the online consumer experience (Jones and Wang, 2018). However, the sector continues to face the continuous difficulty of online shopping cart abandonment, in which customers begin the purchasing process but do not complete the transaction (Lee et al., 2019). To elucidate the various mechanisms underlying this phenomenon, this study focuses on the product category perspective, investigating the varied behaviours of online shoppers. The study focuses on critical aspects in the online buying context, including pricing, user experience, low purchase frequency, and cart abandonment (Chiang & Dholakia, 2020).

### **Statement Of The Problem**

The current study investigates consumer neglect in online shopping carts within the dynamic landscape of the e-commerce business, with a focus on product categories. The pervasive effect of the internet has resulted in extraordinary growth in the online business sector, as consumer habits continue to change. A disturbing trend identified is the widespread occurrence of electronic shopping cart abandonment, in which buyers add items to their carts but do not complete the transaction. This behaviour is especially noticeable among the younger

generation, who regularly leave products in their trolleys without making an immediate purchase. Businesses must address this trend proactively in order to maximise sales potential and operational efficiency. Implementing effective engagement techniques and improving cart management are essential measures for lowering abandonment rates and capitalising on the tremendous potential provided by the wide online marketplace.

### **Research Questions**

RQ.1-How does pricing strategy effect online shopping cart abandonment for product categories in the cities of Chennai and Coimbatore?

RQ.2 What impact does user experience play in cart abandonment during online purchasing, with a focus on product categories in the cities of Chennai and Coimbatore?

RQ.3 To what extent does low purchase frequency affect cart abandonment in online shopping in the cities of Chennai and Coimbatore, taking into account the product category?

### **Research Objectives**

1.To examine the relationship between pricing and online shopping cart abandonment, with a particular emphasis on product categories.

2. To analyse the relationship between price and online shopping cart abandonment within the product category perspective.

3.To investigate the connection between experience and shopping cart abandonment in online shopping, considering the product category perspective.

### **Scope Of The Study**

The major goal of this research is to determine the elements that contribute to online shopping cart abandonment, with a particular emphasis on the product category perspective in Chennai and Coimbatore. In addition, the study will look into the peculiarities of various product categories and the reasons that drive purchasing decisions. The study will be done using a questionnaire disseminated via Google Forms, including respondents from various age groups and vocations in the cities of Coimbatore and Chennai.

### **Literature Review**

The development of mobile internet has given rise to the phenomenon of online businesses, with platforms such as Shopee, Lazada, and TikTok Shop attracting millions of daily visitors globally (Kuswanto, 2019; Bradley, 2021). Despite considerable e-commerce research, few studies investigate the elements that contribute to shopping cart abandonment on websites (Huang et al., 2018). Recognising these elements is critical for online shops seeking to develop effective ways to combat this behaviour (Kavitha and Kannan, 2020). Surprisingly, up to 75% of e-commerce shopping carts are abandoned, a phenomena in which customers add things but depart their carts before completing the transaction (Copolla, 2020).

Online shopping cart abandonment happens when users add things to virtual carts during a session but do not complete the purchase (Kukar and Close, 2009). This is consistent with contemporary definitions, which describe it as placing things for evidence collection but abandoning the cart until the purchase is completed (Egeln and Joseph, 2012). Alternatively, it involves customers adding things to digital carts and then exiting the website without completing the transaction (Erdil, 2018). This study examines the disputed issue of online shopping cart abandonment from a market sector viewpoint, with a particular emphasis on Coimbatore. The study reveals links between pricing, user experience, low purchase frequency, and cart abandonment.

### **Underpinning Theories**

The study of factors influencing shopping cart abandonment behaviour is based on a variety of theories, with Davis's Technology Acceptance Model (TAM) published in 1989 serving as a major framework for understanding consumer decisions to accept sophisticated technology. TAM is based on two important concepts: perceived usefulness (PU) and perceived ease of use (PEOU), which examine users' perceptions about how to increase work performance and how easy it is to use a specific technology. Davis emphasises that the usability and utility of technology are critical in attracting and retaining customers, particularly in the case of online purchasing. In the

world of online commerce, perceived utility refers to the perception that engaging in online transactions increases personal success.

### **Cart Abandonment**

Kukar-Kinney and Close (2010) define online shopping cart abandonment as the act of placing things in a web store but not making a purchase during a given online shopping session. To emphasise the importance of session time, several online retailers immediately delete items left in the cart and designate them as abandoned. Banwari Mittal (2022) identifies a big difficulty for e-tailers, with up to 75% of shopping carts abandoned after item selection.

Jiang, Zhang, and Wang (2021) draw attention to how shopping cart capabilities are affected by the explosive rise of e-commerce. During the purchasing cycle, customers add products to their carts—a crucial step in online shopping that frequently results in the collection of genetic data from clicks, favourites, and payments. Computer science is used to analyse online shopping cart abandonment, often known as Internet Abandoned Cart Syndrome (ACS). In an effort to explain this phenomenon in the context of online purchasing characteristics and platforms, experts ascribe the complicated behaviour to personal traits, customer behaviour, and product classification.

### **Hypothesis Development**

Instead of examining the specifics of each product, a pricing information search seeks to lower the total cost of the transaction. Comparing prices is related to the price level rather than to symbolic worth or perceived relevance. Taxes and delivery are extra costs associated with online purchases. Some customers rethink their purchases when they encounter unexpected expenses throughout the checkout process, particularly when purchasing expensive things. Instead of examining the specifics of each product, a pricing information search seeks to lower the total cost of the transaction. (Bolt, 2022) Comparing prices is related to the price level rather than to symbolic worth or perceived relevance. Taxes and delivery are extra costs associated with online purchases. Some customers rethink their purchases when they encounter unexpected expenses throughout the checkout process, particularly when purchasing expensive things. Products are attractive to customers when they offer competitive pricing, variety, easy access to feedback, and high quality. Online shoppers are often influenced by special discounts, free shipping, and promotions. Exorbitant costs could discourage buyers, but if they expect a deal or reduction that addresses affordability, they will be interested. Mobile and internet accessibility are the main drivers of e-commerce usage in India, where 50% of the population engages in regular online shopping. But there is a direct link between high pricing and cart abandonment since affordability concerns play a part in this phenomenon. Therefore, the hypothesis is proposed:

*H1: There is a relationship between price and cart abandonment in online shopping, considering product categories.*

According to Ford et al. (1990), experience qualities are those that can only be verified after a product has been used. Additionally, an experience good is a good or service that may be rated after use but whose qualities, such price or quality, are difficult to determine beforehand (Nelson, 1970). Experience goods, however, make it difficult for customers to make wise selections about what to buy. Since experience attributes can only be reliably assessed after the product has been purchased and used, conducting quality evaluations for these features through a straightforward internet search is generally difficult (Nelson, 1970). Nelson (1970) asserted that experience qualities must be physically inspected and tested. The inability of internet buyers to physically inspect the things is the cause. Consequently, the situation of shopping cart abandonment exists.

Therefore, the following hypotheses is proposed:

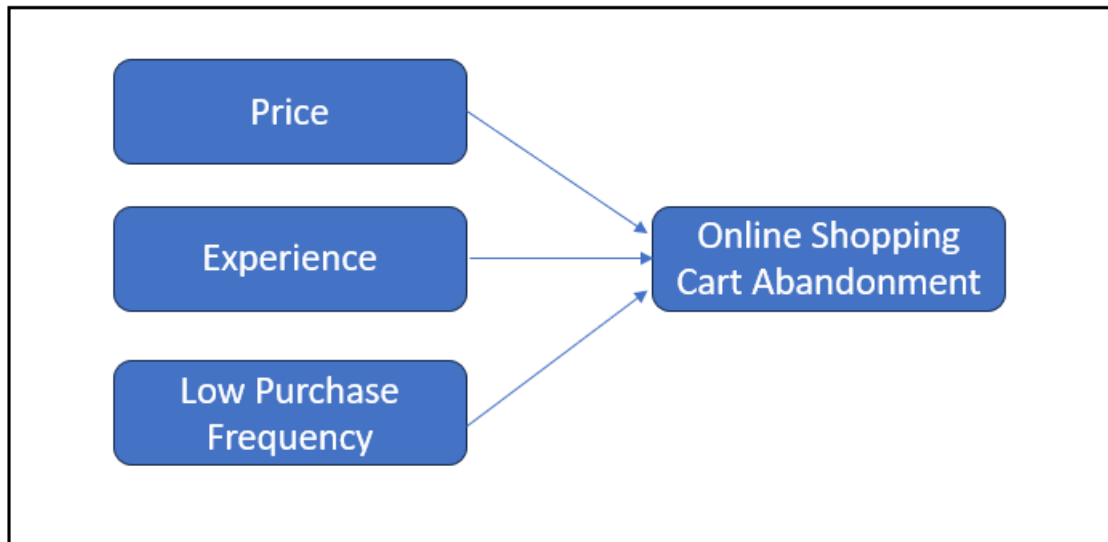
*H2: The level of cart abandonment in online shopping, categorized by product type, is influenced by the overall user experience.*

The average number of times a customer purchases from your business in a specific time frame is known as the purchase frequency (PF) (Geckoboard, 2022). Furthermore, the vast majority of e-commerce businesses discover that focusing on client retention is among the best ways to boost sales and profits. (Geckoboard, 2022). A product's high purchase frequency signals that it is a convenience product, customers will make their purchase using a simple decision-making process and will spend less time learning about it or evaluating alternatives. In comparison to high purchase frequency, low purchase frequency encourages greater thought and information searches (Song, J. D., 2019). Therefore, products with low purchase frequency will cause online customers to abandon their shopping

carts. (Song, J. D., 2019). Consequently, low-frequency products will drive online shoppers to remove their items from their shopping carts. Thus, this gives way to the proposition of the following hypothesis

Hypothesis 3: *A correlation exists between infrequent purchasing and the phenomenon of cart abandonment in online shopping, considering the product category perspective.*

Based on the above, the following conceptual model is proposed:



**Sampling And Data Collection Methodology**

A systematic sample of 302 respondents was selected from the urban populations of Coimbatore and Chennai for this study. A total of 320 samples were collected which resulted in 302 samples after purification. Google Forms was used to administer a pre-tested and verified questionnaire as part of the data collection procedure. Diverse social media outlets were employed to facilitate the recruitment of participants. This study's main focus was on people who actively purchase online between the ages of 18 and 60. Importantly, the study used a random probability sampling strategy, which guarantees a fair and impartial selection of participants. This study's questionnaire is divided into three sections, denoted A, B, and C. Given the numerous advantages of pilot studies in accomplishing the primary goal, a pilot test has been carried out to gauge respondents' understanding of statistical explanations. In the pilot test, between 10 and 25 people were involved. The questionnaire was also checked for reliability and validity, With Cronbach alpha values over 0.8 the measurement instrument is deemed fit and reliable.

Variable	Cronbach's Alpha	Number of Items (N)
Price (IV)	0.970	5
Experience (IV)	0.862	5
Low Purchase Frequency (IV)	0.818	5
Cart Abandonment (DV)	0.859	5

**Table 1: Reliability and Validity of Instrument**

The questionnaire uses a set of pre tested questions to measure its variables. It does this by drawing on insights from earlier studies, such as those by Omar, Juhdi, Ahmad, Nazri (2014), Bayad Ali (2021), Wang'ombe & Ngige

(2016), Eshetic (2016), Weng and Nicolau (2017), Zhang (2019), Sthapit and Jimenez-Barlieto (2018), Cheng and Jin (2019), and Seth Grimes (2017). The administered questionnaire is split in 3 parts with 5 point likert scale type questions.

Section	Variable	Items
A	Demographic Profile	7
B	Price	5
	Experience	5
	Low purchase frequency	5
C	Cart Abandonment	5

**Table 2: Overview of Research Instrument**

Data analysis for this project will be done using IBM SPSS Statistics version 26.

**Analysis And Interpretation**

**Hypothesis Testing**

Hypothesis 1:

The suggested research hypothesis were tested using Spearman’s Correlation Analysis.

Price and Shopping Cart Abandonment:

**Table 4: Correlative between Price and Cart Abandonment**

Correlations				
			Price	Shopping Cart Abandonment
Spearman's rho	Price	Correlation Coefficient	1.000	.695**
		Sig. (2-tailed)	.	.001
		N	201	201
	Shopping Cart Abandonment	Correlation Coefficient	.695**	1.000
		Sig. (2-tailed)	.001	.
		N	201	201

The above table shows the corelation between price and Shopping card Abandonment. With p- value being .001 (p<0.05), the following hypothesis can be accepted

H1: There is a relationship between price and cart abandonment in online shopping, considering product categories.

. Also The Spearman Correlation Coefficient is 0.695, which denotes a good positive correlation.

Hypothesis 2

**Table 5: Correlative between Experience and Cart Abandonment**

Correlations				
			Experience	Shopping Cart Abandonment
Spearman's rho	Experience	Correlation Coefficient	1.000	.535**
		Sig. (2-tailed)	.	.000
		N	302	302
		Correlation Coefficient	.535**	1.000
		Sig. (2-tailed)	.000	.
		N	302	302

Source: IBM SPSS Statistics version 26 (2018)

The above table shows the correlation between Experience and Shopping card Abandonment. With p- value being .000 ( $p < 0.05$ ), the following hypothesis can be accepted

H2: The level of cart abandonment in online shopping, categorized by product categories, is influenced by the overall user experience.

Also, the Spearman Correlation Coefficient is 0.535, which denotes a good positive correlation.

**Hypothesis 3**

**Table 6: Correlative between Experience and Cart Abandonment**

Correlations				
			Low Purchase Frequency	Shopping Cart Abandonment
Spearman's rho	Low Purchase Frequency	Correlation Coefficient	1.000	.360**
		Sig. (2-tailed)	.	.002
		N	302	302
	Cart Abandonment	Correlation Coefficient	.360**	1.000
		Sig. (2-tailed)	.002	.
		N	302	302

The above table shows the correlation between Low Purchase Frequency and Shopping card Abandonment. With p- value being .002 ( $p < 0.05$ ), the following hypothesis can be accepted

H3: A correlation exists between infrequent purchasing and the phenomenon of cart abandonment in online shopping, considering the product category perspective.

. Also The Spearman Correlation Coefficient is 0.360, which denotes a low positive correlation.

**Findings And Results**

**Table 7: Correlative between Experience and Cart Abandonment**

No.	Research Question	Hypothesis	Result
1	How does pricing strategy effect online shopping cart abandonment for product categories in the cities of Chennai and Coimbatore?	H <sup>1</sup> : H1: There is a relationship between price and cart abandonment in online shopping, considering product categories.	There is a positive relationship. r= 0.695 p= 0.002
2	What impact does user experience play in cart abandonment during online purchasing, with a focus on product categories in the cities of Chennai and Coimbatore?	H <sup>2</sup> : The level of cart abandonment in online shopping, categorized by product categories, is influenced by the overall user experience.	There is a positive relationship. r= 0.535 p=0.000
3	To what extent does low purchase frequency affect cart abandonment in online shopping in the cities of Chennai and Coimbatore, taking into account the product category?	H <sup>3</sup> : H3: A correlation exists between infrequent purchasing and the phenomenon of cart abandonment in online shopping, considering the product category perspective	There is a positive relationship. r= 0.360 p= 0.001

According to the above table, all three hypotheses are accepted, indicating that price, experience and frequency of purchasing behavior have an impact on online shopping cart abandonment, with price having a greater impact due to the high correlation while low purchase frequency although positively correlated. The impact seems low in comparison.

The price advantage will draw customers. However, there are several additional costs that come with internet buying, such as shipping, taxes, and other fees. Unexpected fees that appear when a customer adds an item to their cart make them second-guess their decision to buy. As a result, buyers will remove expensive items from their virtual shopping carts (Bolt, 2022).

A strong and statistically significant link is found when examining the relationship between price and shopping cart abandonment. This implies that pricing factors have a major influence on online shoppers' decision-making processes and may even be the deciding factor in whether a client decides to complete a purchase or put their shopping cart away.

Also, the results of the study show a significant positive association between the dependent variable of shopping cart abandonment and the independent variable of online shopping experience. This suggests that the probability of cart abandonment rises in tandem with the intensity of the online buying experience. After a closer look at the survey results, it became clear that the answer to the question "I will read product reviews to assess the product" had the highest mean among all the factors influencing the online buying experience.

The results of the study show a significant positive association between the dependent variable of shopping cart abandonment and the independent variable of online shopping experience. This suggests that the probability of cart abandonment rises in tandem with the intensity of the online buying experience. After a closer look at the survey results, it became clear that the answer to the question "I will read product reviews to assess the product" had the highest mean among all the factors influencing the online buying experience.

This increased weight given to reading product reviews indicates that internet customers frequently rely on firsthand knowledge when making decisions. This trend is supported by Nelson's (1970) definition of an experiential good.

The results highlight how important it is to solve the inherent difficulties in assessing internet products. Because consumers who shop online mostly rely on firsthand knowledge, efforts to improve the accessibility and reliability of product reviews could be successful in reducing the rate at which customers abandon their carts. Additionally, improving consumer satisfaction and maybe lowering cart abandonment rates in the online marketplace could be achieved by promoting trust in the online buying environment through open communication of product qualities. The analysis indicates a positive link, albeit a rather moderate one at 0.360, between low purchase frequency and shopping cart abandonment. The study emphasises the importance of several contributing factors despite this weak association. Notably, among the characteristics evaluated, conducting in-depth research on goods and services prior to making online purchases is identified as a crucial component, with the highest mean score. This outcome implies that making well-informed decisions that are based on thorough information gathering is essential to lowering the risk of shopping cart abandonment.

Additionally, the study explores the complex dynamics of frequency of product purchases. Customers typically follow a streamlined decision-making process when purchasing convenience items, which is indicative of high purchase frequency. They also tend to spend less time researching and evaluating options. On the other hand, low purchase frequency is indicative of a requirement for more thought and information retrieval, which is consistent with Song's findings (2019). Online shoppers are more likely to give up on their shopping carts as a result of this increased cognitive strain and information search linked to infrequent purchases. Therefore, the intricate interaction that affects shopping cart abandonment in the online retail environment is illuminated by the complex relationship among purchase frequency, decision-making processes, and information search patterns.

### **Recommendations/Suggestions For Future Research**

The study's primary suggestion for reducing cart abandonment is to enhance the online shopping experience by adding more things to the basket and automating the removal of items that haven't been bought. Rebuilding trust and promoting repeat business can also be achieved by involving clients in targeted SMS and email marketing. Furthermore, lowering cart abandonment is achieved through providing purchase perks like discounts and promotions. This study offers insightful information for further research, laying the groundwork to investigate factors influencing cart abandonment and enhance online buying tactics and experiences.

### **Conclusion**

In conclusion, this study has offered a thorough analysis of online shopping cart abandonment from the standpoint of product category, concentrating particularly on the cities of Chennai and Coimbatore. Price, experience, and low purchase frequency were the three different product category lenses used to examine Coimbatore and Chennai's online shopping environment. These lenses matched the criteria listed in Davis's (1989) Technology Acceptance Model. The study's findings, taken together, indicate that the three variables of pricing, experience, infrequent purchases, and cart abandonment during online shopping, depending on the product category, are positively correlated. The study's conclusions highlight how important it is to make well-informed decisions when making purchases online, with a focus on doing extensive research on goods and services before making a commitment.

### **References**

1. Aha!. (2021, June 4). What is buyer experience? The World's #1 Product Development Software | Aha!. <https://www.aha.io/roadmapping/guide/marketing-strategy/what-is-buyer-experience>
2. Akhtar, I. (2016). Research Design. *Journal of Research in Social Science: Interdisciplinary Perspectives*, 69-70. <http://dx.doi.org/10.2139/ssrn.2862445>

3. Alvi, M.H. (2014). A Manual for Basic Techniques of Data Analysis and Distribution. Retrieved from Munich Personal RePEc Archive: <https://mpra.ub.uni-muenchen.de/60138/>
4. Ateke, B. W., & Didia, J. U. D. (2018). Consumer knowledge and purchase intention of healthcare product consumers in Rivers State. *International Journal of Business and Law Research*, 6(1), 1-7.
5. BambooHR. (2022). Generation Z. <https://www.bamboohr.com/hr-glossary/generation-z/>
6. Benson, L. G., & Nodoro, T. T. (2022). An Investigation into Online Shopping Cart Abandonment in South Africa. *International Review of Management and Marketing*. <https://doi.org/https://doi.org/10.32479/irmm.12985>
7. Bolt. (2022). 14 reasons for cart abandonment and strategies to improve conversions. *One-Click Checkout & CheckoutOS | Bolt*. <https://www.bolt.com/thinkshop/14-reasons-for-cart-abandonment-and-strategies-to-improve-conversions>
8. Carbon, C. (2021, March 24). What is retail price? | Example, conclusion, setting MSRPs, advantages. *Invest in Solving Climate Change | Carbon Collective*. <https://www.carboncollective.co/sustainable-investing/what-is-retail-price>
9. Charlton, G. (2019, April 8). What is Cart Abandonment? *SaleCycle; SaleCycle 2019*. <https://www.salecycle.com/blog/strategies/what-is-cart-abandonment/>
10. Cho, N., & Park, S. (2001). Development of electronic commerce user-consumer satisfaction index (ECUSI) for Internet shopping. *Industrial Management & Data Systems*, 101(8), 400–406. <https://doi.org/10.1108/eum0000000006170>
11. Close, A. G., & Kukar-Kinney, M. (2010). Beyond buying: Motivations behind consumers' online shopping cart use. *Journal of Business Research*, 63(9-10), 986-992. <https://doi.org/10.1016/j.jbusres.2009.01.022>
12. Cohen, L., Manion, L., & Morrison, K. (2000). *Research Methods in Education*. Routledge Falmer.
13. Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE.
14. Daroch, B., Nagrath, G., & Gupta, A. (2020). A study on factors limiting online shopping behavior of consumers. *Emerald*. <https://www.emerald.com/insight/2633-0091.htm>
15. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319. <https://doi.org/10.2307/249008>
16. Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research* (3rd ed.). SAGE Publications.
17. Eldridge, A. (2022, September 20). Generation Z | Definition, Characteristics, Trends, & Birth Years | Britannica. *Britannica*. <https://www.britannica.com/topic/Generation-Z>
18. Ford, G. T., Smith, D. B., & Swasy, J. L. (1990). Consumer skepticism of advertising claims: Testing hypotheses from economics of information. *Journal of Consumer Research*, 16(4), 433. <https://doi.org/10.1086/209228>
19. Geckoboard. (2022). Purchase frequency. <https://www.geckoboard.com/best-practice/kpi-examples/purchase-frequency/>
20. Groeger, L., & Buttle, F. (2013). Word-of-mouth marketing influence on offline and online communications: Evidence from case study research. *Journal of Marketing Communications*, 20(1-2), 21-41. <https://doi.org/10.1080/13527266.2013.797736>
21. Mir, I. A. (2021). Self-Escapism Motivated Online Shopping Engagement: A Determinant of Users' Online Shopping Cart Use and Buying Behaviour. <https://www.tandfonline.com/doi/pdf/10.1080/15332861.2021.2021582?needAccess=true>
22. Mittal, B. (2022). Online shopping cart abandonment: a critique and guide to measuring its drivers. <https://www.tandfonline.com/doi/pdf/10.1080/09593969.2022.2126874?needAccess=true>
23. Naeini, F. H., & BalaKrishnam. (2012). Usage Pattern, Perceived Usefulness and Ease of Use of Computer Games among Malaysian Elementary School Students. [https://www.researchgate.net/publication/287832412\\_Usage\\_Pattern\\_Perceived\\_Usefulness\\_and\\_Ease\\_of\\_Use\\_of\\_Computer\\_Games\\_among\\_Malaysian\\_Elementary\\_School\\_Students](https://www.researchgate.net/publication/287832412_Usage_Pattern_Perceived_Usefulness_and_Ease_of_Use_of_Computer_Games_among_Malaysian_Elementary_School_Students)