

An Empirical Study of Customer Satisfaction in Online Cosmetic Purchases in Sri Lanka

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Asian Journal of
Marketing Management

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Jayewardenepura
Sri Lanka

ISSN: 2820-2031 (Printed)
ISSN: 2820-2082 (Online)

DOI:
[10.31357/ajmm.v5i2.8799.g6578](https://doi.org/10.31357/ajmm.v5i2.8799.g6578)

Received February 2026
Revised July 2026
Accepted July 2026

ABSTRACT

Purpose: E-commerce growth has changed how university students buy cosmetics online, yet little research exists on what drives their satisfaction in Sri Lanka. This study examines the main factors affecting customer satisfaction among young customers, focusing on product quality, product price, payment methods, and convenience.

Design/methodology/approach: A quantitative approach was adopted using a structured online questionnaire distributed through convenience sampling. Data were collected from 392 undergraduates in Sri Lankan state university sector with prior online cosmetic purchasing experience. Descriptive statistics, correlation analysis, and multiple regression analysis were employed, while reliability and validity were confirmed using Cronbach's Alpha and factor analysis. This analysis was done by using SPSS software.

Findings: Results indicate that all four factors significantly and positively influence customer satisfaction. Product quality was identified as the strongest determinant, followed by convenience, product price, and payment methods. The model explained 62.4% of the variance in customer satisfaction.

Originality: The study extends ECT to the online cosmetics sector in Sri Lanka, addressing a clear gap in student-focused e-commerce research.

Implications: Findings offer practical guidance for online cosmetic retailers to enhance satisfaction through quality assurance, fair pricing, secure payment systems, and improved convenience.

Keywords:

Customer satisfaction; Online cosmetic purchases, Product quality, Product price, Payment methods, Convenience, Expectation-Confirmation Theory (ECT).

Introduction

Background

Internet technology has shaped consumers' daily e-life worldwide and displaced numerous offline constituents to online. Online retail browsing has grown at an accelerated pace thanks to the COVID-19 pandemic, with its own mandate for staying holed up. At the beginning, supermarkets provided a fast response to meet people request for provision with same day delivery, but internet evolution is changing people to door step delivered services and thus resulting in opportunities for sellers, giving web developers the go ahead to come up with even more advanced online systems (Limbu et al., 2022; Ranasinghe et al., 2019).

Internationally, the place of purchase has been significantly transformed by online shopping from cosmetic products via e-commerce channels as a function of convenient

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selection, comparing prices and ease of access (Drexel University & Gefen, 2002). Cosmetic products are expanding in Sri Lanka in virtual mode, especially among university students who look for cosmetics and other personal care items. Their buying behaviour is related to brand trust, product knowledge, social influence, perceived value, quality and price sensitivity. Also the trend spread from social media (Limbu et al., 2022). Prior studies in Indonesia and Malaysia indicate other factors such as feeling, knowledge, and religion are also influencing the customer satisfaction (Nuryakin et al., 2024).

The Sri Lankan cosmetics industry is characterized by both local as well as international brands. Previous studies focused on convenience, price, selection, and trust in the context of online shopping in general, however exclude cosmetics (Kulathunga et al., 2025). Investigating determinants for university students is important for interventions that can be tailored. The present study reveals that consumers on platforms such as Facebook, Instagram and TikTok follow international trends which give important vision for marketers to make changes in order to grow the industry.

Problem Statement

The online cosmetics market in Sri Lanka is rapidly increasing but research on factors influencing customer satisfaction through online channels are also scarce, specifically among university students. Previous studies have focused on the overall shopping behavior online and there is a major void that requires to be filled with regard to identifying driving factors in respect of cosmetic products among the young consumers in Sri Lanka. This research fills in this gap through identifying drivers of online cosmetic buying behavior towards enhancing customer satisfaction.

The main issue is the dearth of knowledge on drivers influencing university students in online purchase of cosmetic products in Sri Lanka. Even though the market is expanding, little evidence exists on cosmetics-specific factors compared to general e-commerce. In the emerging online cosmetics market of Sri Lanka, research such as Limbu et al. (2022a) for green cosmetics on Vietnam discuss the influence of knowledge, attitude and subjective norms on purchase behaviors.

Few scholars have empirically examined consumers' purchase intentions and their association with knowledge, attitude, subjective norms and self-efficacy on cosmetics. However, very few studies use Expectation-Confirmation Theory (ECT) in a cosmetic products buying context (Sadiq et al., 2021). ECT provides an explanation for satisfaction through expectation-performance congruence, however the prior studies were on generic e-commerce and have not considered customer satisfaction. In the present study, authors address these gaps by introducing ECT to Sri Lankan cosmetics industry.

Purpose of the Study

The objective of this research is to understand determinants of customer satisfaction in case of online cosmetic purchases applying the paradigm of Expectation-Confirmation Theory (ECT) (Sadiq et al., 2021). ECT suggests that satisfaction results from the meeting of exceed performance expectations of products and services. Hypotheses For online cosmetics (high involvement), pre-purchase expectations are influenced by product description, brand reputation, social media influence, website usability and peer recommendations. Perhaps, the purpose of the present study is to investigate the factors that are having an influence on customer satisfaction in the context of cosmetics industry.

Research Questions

In accordance with the research problem, observed research gaps, and the research purpose, the research questions are formulated as follows:

1. What is the impact of product quality on customer satisfaction in online cosmetic purchases Sri Lankan university students?
2. What is the impact of product price on customer satisfaction online cosmetic purchases Sri Lankan university students?
3. What is the impact of payment methods on customer satisfaction online cosmetic purchases Sri Lankan university students?
4. What is the impact of convenience on customer satisfaction online cosmetic purchases Sri Lankan university students online?

Research Objectives

In accordance with the research questions, the research objectives that are pursued throughout the study can be identified as follows:

1. To identify the impact of product quality on customer satisfaction in online cosmetic purchases Sri Lankan university students.
2. To identify the impact of product price on customer satisfaction online cosmetic purchases Sri Lankan university students.
3. To identify the impact of payment methods on customer satisfaction online cosmetic purchases Sri Lankan university students.
4. To identify the impact of convenience on customer satisfaction online cosmetic purchases Sri Lankan university students online.

Significance of Study

Therefore, the current research supports to fill this literature gap by assessing the satisfaction of customers in online cosmetic purchasing among Sri Lankan university

students, which is an extension from previous research done on general e-commerce (Kulathunga et al., 2025). Unlike previous research that examined general online shopping, this research explores the transactional part of cosmetics and young digital natives who are affected by daily social media life and evolving digital experiences. Theoretically, ECT is generalized to online cosmetics and the generation of expectations, sensory constraints, and post-purchase evaluation as determinants of satisfaction.

From a practical perspective, findings provide insights for e-commerce website designers, cosmetic companies and digital marketers focusing on young consumers and encourage them to emphasize clear product details, secured websites, timely delivery of products, brand reputation amongst peers after using the items. Post-pandemic digital behaviours are calling for improved retention strategies, the present study supports corporate companies to increase customer loyalty and satisfaction. For policymakers and educators, the study provides insight on youth consumption trends that can influence digital literacy and consumer protection programs. It provides practical recommendations for the emerging online retail cosmetics industry in Sri Lanka.

Limitations of the Study

The study is confined to young customers in state universities, limiting the generalizability of findings to general populations in Sri Lanka. While the institution's large, diverse student body provides a strong sample, regional variations in internet access, economic backgrounds, and cultural preferences may not be fully captured. Additionally, reliance on self-reported data introduces potential biases, such as social desirability or recall inaccuracies, which could affect the reliability of responses related to purchasing habits and motivations.

And also, there is a limitation because it eliminates causal inferences between variables like purchase intentions and customer satisfaction. Second, the study is restricted to a predetermined number of factors based on Expectation-Confirmation Theory (ECT), which might not thoroughly represent emerging influences like environmental sustainability or influencer marketing factors fundamental in the international market of cosmetics. Future research could broaden the scope to incorporate these evolving variables for a more comprehensive understanding.

Literature Review

Customer Satisfaction

Customer satisfaction is the foundation of marketing literature, influencing loyalty, repurchase intentions, brand attitudes and lifetime value (Kotler & Keller, 2006). The customer is appraising whether the product was delivered as promised, and this technique can be leveraged through online channels like website design, delivery, payment systems and after sales support. In recent years, it can be seen that there is a transformation in consumer behavior, leading online platforms to be key for products, such as cosmetics. In Sri Lanka, Deyalage & Kulathunga (2019) described website design,

customer service as well as security as important satisfaction drivers and suggest businesses should offer enjoyable secure and intuitive stores to substitute human interaction. According to Nandasena & Wickramasinghe (2024) product quality, ease of purchasing, aftersales services and data safety highly influence the online satisfaction irrespective of demographic like age or income.

In the case of sensorial cosmetics, Duc Le et al. (2020) demonstrated that university students enjoyed both utilitarian utility and hedonic trust. The result of their Vietnamese study shows that shopping enjoyment, trust, benefits and web quality have a direct impact on purchase intentions along with variables such as description correctness, color fidelity, skin fit and review. Accordingly, satisfaction with cosmetics is the product of both technical and effective elements such as effectiveness, enjoyment and trust are crucial for establishing long-term relationships.

Product Quality

Product quality impacts customer satisfaction, more in cosmetics than in any other area where performance, safety and appeal are decisive. Quality is the measure of how well a product can meet or exceed customer expectations in terms of performance, reliability, durability and function (Limbu et al., 2022). This effect is even more pronounced when it comes to online purchase of cosmetics, since customers do not have the opportunity to physically examine the products and their perceived quality is crucial for customer satisfaction. According to Murni (2018), product quality is identified as the characteristics that directly support a product to meet customer requirements and focus more on meeting expectations than basic performance. According to Kenyon & Sen (2011) and Solin & Curry (2023) there are important dimensions such as foundation application, color payoff, packaging of the perceived quality, product performance, features, reliability conformance durability serviceability aesthetics that perceived quality.

Kotler & Keller (2006) for instance, place quality at the core of a firm's value proposition and satisfies across production, delivery, and design. For cosmetics, these consist of consistent production, safety of ingredients and correct labeling. Consumers evaluate quality on the basis of e-commerce cues such as description, ratings and brand reputation; alignment with reality which increases satisfaction while misalignment leads to regret and churn. Online, adequate replacements for trust when in the absence of physical examination, promoting such behavior as word-of-mouth, repeat purchases and loyalty. Further, product quality is the basis of functional, emotional and perceptual satisfaction for online cosmetics. E-retailers must focus on this to keep customers retention and ensure customer satisfaction.

Product Price

Price is crucial for availability and satisfaction in consumer convenience across retail formats, including among price-conscious online cosmetic consumers. It is more than just a money value, and it creates equity or equality (Wantara & Tambrin, 2019). That is what

customers give up versus what they get back in the form of benefits. According to Kotler & Keller (2006) price is the income yielding side of the marketing mix. E-commerce puts consumers under control, allowing them to compare pricing across sellers; people come into the market conditioned to expect price and value differentiation. Perceived price fairness is directly related to satisfaction for paid amounts and benefits are congruent.

Unlike other consumer products, such as those of daily needs, subjective perceptions play the role in cosmetics. Sheng et al. (2018) corroborate a positive relationship between perceived price and satisfaction. Promos, deals and clarity also serve to bolster marketing promotion. Cosmetics providers offer consumers choices across high-end and low-end tiers, and by that, price is an important factor for satisfaction. Lin et al. (2011) demonstrate that price forms not only purchase intention but also post-purchase contentment and loyalty. As a developing nation, Sri Lankan customers consider satisfaction should match with their affordability.

Price is ultimately an expression of psychological value, which forms expectations. With customers perceiving high value for money satisfaction increases, which leads to customer loyalty. Cosmetics businesses who are using E-commerce platforms have focused on young customers and they pursue competitive pricing policies, adapted to the preferences of the specific market segment and resulting in augmented value for consumers, ensuring longevity and optimal retention.

Payment Methods

Payment method availability and reliability are paramount in securing customer satisfaction in online retail, more so for emerging markets. As e-commerce continues to grow, there is an increasing need for diverse, secure and seamless payment options that provide the same level of comfort as in-store payments. In the context of cosmetic, it has been identified that payment method plays a significant role in determining the customer satisfaction (Kotler & Keller, 2006).

Kotler & Keller (2006) defined payment as a make-or-break moment of truth where it confirms trust. For successful transactions, systems have to be easy and nimble and secure. Payment methods are e-Wallets, debit cards and cash-on-delivery are preferred by young customers in Sri Lanka, but insufficient payment processing results in frustration and abandonment. Sheng et al. (2018) explained that Payment variety and fair charge have significant effect on satisfaction. Credit cards, eZ Cash, FriMi and cash on delivery are now provided to suit personal convenience and tech comfort.

Lin et al. (2011) empirically evidenced that transaction security influences customer satisfaction. Failures such as Gateway failed errors, lost confirmations and esoteric refunds impair the quality-of-service perception. For frequent cosmetic shoppers, hassle-free payments create trust and second sales. In the context of Sri Lanka, Nandasena & Wickramasinghe (2024) have found that there is a positive and significant relationship between payment options and online shopping customer satisfaction. They suggest that

platforms offering a secure and convenient payment solution will be more popular among customers, particularly in the sensitive domain of cosmetics where transactions are associated with personal and health preferences. Trust is about a lot more than just convenience. The literature establishes that methods of payment secure, flexible and efficient are essential to satisfaction for an online cosmetic transaction among students.

Convenience

Convenience is also one of the most important aspects of shopping online which provides convenience, speed and hassle-free experience from searching for a product to receive it. There is nothing more than a young customer needs than online access to an enormous selection of cosmetics, sparing the inconvenience of going to the department store. Kotler & Keller, 2006 place convenience as one of the important value drivers on digital economy which includes easy to use website, quick processing, comparing product easily, optimized for mobile, and tracking order. Applications for young customers to easily search for perfect products, receive feedback and purchase likely lead to higher satisfaction.

Lin et al., 2011 associate ease of shopping with perceived service quality and satisfaction in the form of search efficiency, low transaction friction and ease of delivery. One-click, seamless experiences with no hiccups or information overload are factors that make people trust and feel satisfied. Convenience is also found to be a key factor, after validation in Sri Lanka by Nandasena & Wickramasinghe (2024) and Deyalage & Kulathunga (2019). Further, Sheng et al., 2018 also explained that convenience leads to lower anxiety perceptions and higher perceptions of control, which is important for young consumers.

Methodology

The research philosophy that frames this study is positivist and it focuses on objectivity, quantification, and use of scientific method in the study of social phenomenon (Saunders et al., 2019). According to Ishtiaq (2019) Positivism is relevant to this case since the proposed research is aimed at determining the measurable relationship between the dependent variable and the independent variables. Further, this study adopts quantitative research. This design is fundamental as it involves the collection and analysis of numerical data to identify a pattern, a relationship and a trend concerning the variables under investigation. Quantitative design is appropriate because the study seeks to statistically identify how customer satisfaction for online purchase of cosmetics is statistically affected by product quality, product price, payment methods and convenience (Saunders et al., 2019). Structured instruments such as surveys are used in the collection of numerical data to analyze using software such as SPSS.

The approach chosen to be used in the research was the survey strategy. The survey is a very popular method applied in quantitative studies because they enable the researcher to raise standardized data on large numbers of respondents in a cost-effective manner

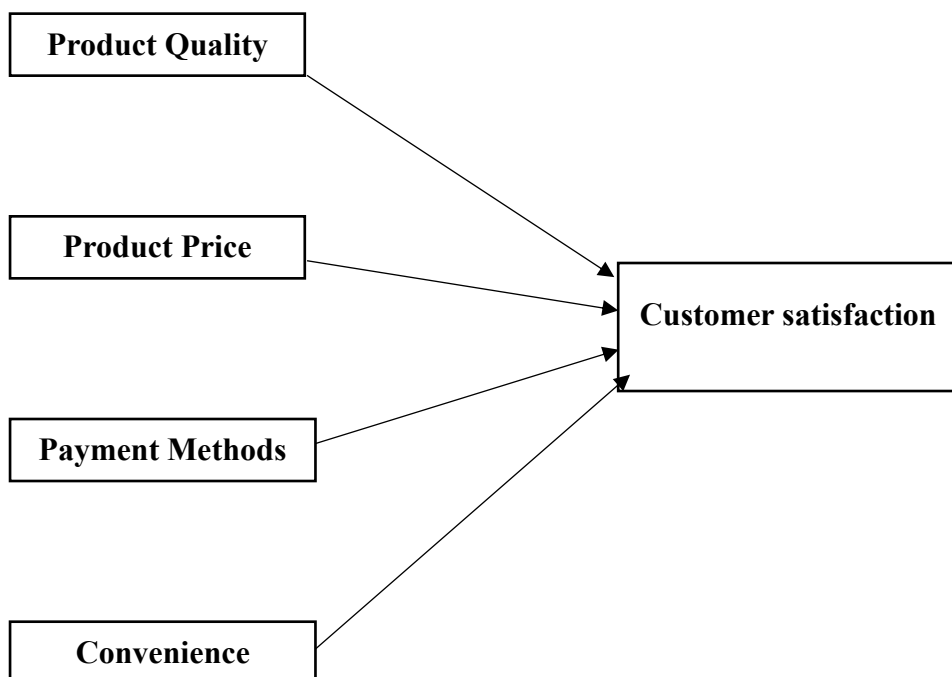
(Saunders et al., 2019). To conduct this study, a questionnaire was prepared with an aim to capture the perceptions and their experiences of students concerning online purchase of cosmetics.

Further, this research employs a mono-method quantitative choice, relying solely on quantitative data collection and analysis techniques. According to Saunders et al. (2019) the decision to use this approach stems from the research objectives, which require examining measurable variables and testing hypotheses about their relationships. The unit of analysis in this study is an individual because the research objectives to comprehend the influence of undergraduate students' perceptions of product quality, product price, payment methods and convenience on their satisfaction with the purchase of online cosmetic products it puts more emphasis on individual-level responses.

Conceptual Framework

The Expectation-Confirmation Theory (ECT) serves as the conceptual foundation for the study, in which customer satisfaction is determined by the confirmation or disconfirmation of customer expectations prior to purchase. This theory states that satisfaction arises where performance is equal to or exceed expectations of a product or service. This research looks at the effects of four independent variables, namely product quality, product price, payment methods and convenience to customer satisfaction. The framework postulates that each of these variables has a significant effect on the level of satisfaction of undergraduates in buying cosmetics online.

Figure 1
Conceptual Framework of the Study



Hypotheses

Based on the conceptual framework and literature review, the following hypotheses are developed:

- H1: Product quality has a significant impact on customer satisfaction in online cosmetic purchases.
- H2: Product price has a significant impact on customer satisfaction in online cosmetic purchases.
- H3: Payment methods have a significant impact on customer satisfaction in online cosmetic purchases.
- H4: Convenience has a significant impact on customer satisfaction in online cosmetic purchases.

Conceptualization

In this research, conceptualization is given in terms of defining and operationalizing the major variables according to the previous literature and their theoretical basis. The Expectance-Confirmation Theory (ECT) is the theory used, and this means that customer satisfaction occurs when the experiences of customers are equal or above expectations. In the present study, product quality, product price, payment modes and convenience are considered as the antecedent variables that affect the dependent variable, customer satisfaction.

Operationalization

For construct measurements in this research, authors follow the usage of a Likert scale. The items of the different variables are borrowed from verified studies. Respondents will indicate their level of agreement with each item on a 5-point Likert scale from strongly disagree to strongly agree. The operationalization of the variables is provided in Table I.

Table 1
Operationalization of Variables

Variable	Measurement Items	Source
Product Quality	1. Cosmetic products provide optimal results and bring positive changes to my skin condition. 2. Cosmetic products have consistent quality over time 3. Cosmetic products contain natural ingredients that are safe for the skin. 4. Cosmetic products remain suitable for use until the expiration date stated on the packaging. 5. Cosmetic products are able to brighten the face according to the promised claims.	(Mawaddah Laura & Thaib, 2025)

Product Price	1. The price of the cosmetic product that I bought is in accordance with the quality offered. 2. The price of the cosmetic product offered is acceptable 3. The prices of cosmetic products offered are considered reasonable 4. The price of cosmetic products is in accordance with the benefits I get.	(Mawaddah Laura & Thaib, 2025)
Payment Methods	1. Simplicity of online transactions 2. Security in payment process 3. Easy accessibility of information 4. Prompt delivery 5. Display of product images	(Sasikumar & Vijayakumar, 2022)
Convenience	1. I want the convenience that online shopping offers 2. I enjoy the flexibility of shopping online 3. I am interested in taking advantage of the ease of online shopping 4. I would like to shop at my own pace while shopping online. 5. Reliability of web advertisements 6. Care and individualized attention 7. Lesser cost of delivery 8. Amount of time spent to gather information about products	(Srinivasan et al., 2002)
Customer Satisfaction	1. I am satisfied with cosmetic products 2. I have recommended cosmetic products to others. 3. In my opinion, cosmetic products have met my expectations and needs. 4. I am satisfied with my decision to purchase from this Web site. 5. If I had to purchase again, I would feel differently about buying from this Web site. 6. My choice to purchase from this Web site was a wise one. 7. I feel badly regarding my decision to buy from this Web site 8. I think I did the right thing by buying from this Web site 9. I am unhappy that I purchased from this Web site	(Mawaddah Laura & Thaib, 2025) (Srinivasan et al., 2002)

Population and Sample

The focus of this research is undergraduates in Sri Lanka who have made cosmetics purchasing through online, over the period of six months. Undergraduates can be considered as young customers in Sri Lanka and are active online consumers who are involved with digital platforms, social media (Ranasinghe et al., 2019). By examining

such a participant group, this study shed some light on the possible satisfaction factors in the fast-developing online cosmetic industry.

The sample was from the largest Sri Lankan state university in terms of student population, University of Sri Jayewardenepura (USJP) (USJ, 2024). Its heterogeneous number of students reflects undergraduate from all over in the country and from the USJP student body context to online purchase, information technology some are ideal people for investigating the dynamics sale on cosmetics. The convenience sampling technique was used because of the limitation in term of time, budget, and availability (Saunders et al., 2019). Sample size was 392 young undergraduate customers, and it was in accordance with the requirements for social research (Krejcie & Morgan, 1970).

Data Collection

The present research collected information in the form of primary data using survey methods through a structured 5-point Likert-scaled questionnaire (1=Strongly Disagree to 5=Strongly Agree) based on close-ended questions. Dimensions such as product standard, price and payment type convenience, and consumer satisfaction were operationalized into measurable indicators for statistical analysis. The sample was selected undergraduates at University of Sri Jayewardenepura those who had online cosmetic purchasing experience. Google Forms were distributed through WhatsApp and Facebook groups, beginning with a screening question. Participation was voluntary and anonymous; participation lasted a period of 3 weeks with reminders to increase the response rate; data was for academic purposes only.

Data Analysis

Data analysis involved first cleaning the data to clear it of errors, missing data and invalid responses, then testing reliability (Cronbach's $\alpha > 0.70$) and validity (AVEs, factor loadings for convergent/discriminant). Demographics and responses were summarized with descriptive statistics (means, SDs, frequencies, percentages). Hypotheses were examined through Pearson correlation, relationship between independents (product quality, price, payment means and convenience) and customer satisfaction for, and multiple regression; individual/interactive influences were used. For consistent interpretation of results, all analyses were performed in SPSS software.

Data Analysis and Findings

Response and Sample Profile

This section presents the demographic characteristics of the respondents who participated in the study on factors affecting customer satisfaction toward online cosmetic purchases among undergraduates. A total of 392 valid responses were obtained through the questionnaire survey distributed online. The demographic characteristics of the respondents are analyzed in terms of gender, province, faculty, and year of degree

affiliation. Such description makes it possible to judge the representativeness of the sample and to understand the framework for the subsequent analysis.

Gender Distribution

As shown in Table III, out of the 392 respondents, 214 (54.6%) were male and 178 (45.4%) were female. This indicates that both male and female students actively engage in online cosmetic purchases, with a slightly higher proportion of male respondents in the sample.

Table 2
Gender Distribution

Gender	Frequency	Percent
Male	214	54.6
Female	178	45.4
Total	392	100.0

Provincial Distribution

Table IV summarizes the distribution of respondents based on their province of residence. The highest representation came from the Sabaragamuwa Province (33.7%) and Western Province (31.6%), followed by smaller proportions from other provinces. This distribution suggests that the majority of respondents were from areas with strong internet accessibility and exposure to online retail activities.

Table 3
Provincial Distribution

Province	Frequency	Percent
Western Province	124	31.6
Central Province	32	8.2
Eastern Province	13	3.3
North Central Province	15	3.8
Northwestern Province	16	4.1
Northern Province	11	2.8
Sabaragamuwa Province	132	33.7
Southern Province	30	7.7
Uva Province	19	4.8
Total	392	100.0

Faculties of the University

As shown in Table V, the majority of respondents (63.3%) were from the Faculty of Management Studies and Commerce, followed by students from the Faculty of Computing (6.9%) and Faculty of Engineering (6.4%). This distribution reflects the dominant student population within the university and suggests that management students, in particular, show a strong engagement with online purchasing behavior.

Table 4
Faculty of the University

Faculty	Frequency	Percent
Faculty of Management Studies and Commerce	248	63.3
Faculty of Applied Sciences	19	4.8
Faculty of Humanities & Social Sciences	23	5.9
Faculty of Medical Sciences	15	3.8
Faculty of Allied Health Sciences	5	1.3
Faculty of Technology	15	3.8
Faculty of Engineering	25	6.4
Faculty of Dental Sciences	7	1.8
Faculty of Urban and Aquatic Bioresources	8	2.0
Faculty of Computing	27	6.9
Total	392	100.0

Degree Year

As presented in Table VI, a majority of respondents were final-year students (67.3%), followed by third-year students (17.9%), second-year students (9.4%), and first-year students (5.4%). The dominance of final-year students indicates that more mature undergraduates with greater online shopping exposure participated in the survey.

Table 5
Degree Year

Degree Year	Frequency	Percent
First Year	21	5.4
Second Year	37	9.4
Third Year	70	17.9
Final Year	264	67.3
Total	392	100.0

Overall, the demographic profile shows that the sample is diverse in terms of province and faculty representation, while predominantly consisting of senior students who are

actively involved in online purchasing. This diversity strengthens the representativeness of the findings for understanding customer satisfaction in online cosmetic shopping among university students.

Factor Analysis

Factor analysis was conducted to evaluate the validity of the measurement items and to ensure that each variable was statistically appropriate for further analysis. The results of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity confirmed that the data were suitable for factor analysis.

Table 6
Factor Analysis

Variable	Initial Items	KMO Value	Bartlett's Test of Sphericity ChiSquare	Total Variance Explained	AVE	Factor Loading
Product	5	0.966	7133.214	66.461	-	
Quality						
Product	4				-	
Price						
Payment	5				0.53	Component Matrix ^a
Method						Component
						1
						PM1 0.663
						PM2 0.684
						PM3 0.724
						PM4 0.73
						PM5 0.714
Convenience	8				0.57	Component Matrix ^a
						Component
						1

		CV1	0.715
		CV2	0.738
		CV3	0.691
		CV4	0.747
		CV5	0.759
		CV6	0.763
		CV8	0.744
Customer	9	0.55	Component Matrix^a
Satisfaction			Component
			1
		CS1	0.776
		CS2	0.732
		CS3	0.753
		CS4	0.755
		CS5	0.683
		CS6	0.763
		CS8	0.711

As shown in Table VII, the KMO value of the measurement items was 0.966, which is greater than the acceptable threshold value of 0.60. The Bartlett's Test of Sphericity was also statistically significant ($\chi^2 = 7133.214$, $p < 0.001$), indicating that the variables were sufficiently correlated for factor analysis. Further, the total variance explained by the measurement items was 66.46%, which is greater than the recommended 50%, confirming that a substantial proportion of variance in the items was explained by their respective factors.

In this study, Product Quality and Product Price items loaded onto one component, indicating respondents perceive them as tightly linked reflecting "value for money" in online cosmetics. Thus, Average Variance Extracted (AVE) for these variables wasn't calculated separately (Table VII).

For the remaining variables the measurement items were extracted into a single component of their respective variables, confirming construct linearity. The AVE values of these measurement items were calculated using the formula developed by (Raykov et al., 2010) to assess convergent validity. In general, AVE values above 0.50 are considered acceptable (Hair, 2010). The results in Table VII indicated that the AVE values for Payment Method (0.53), Convenience (0.57), and Customer Satisfaction (0.55) were above the threshold value, suggesting adequate convergent validity. Therefore, all the results highlighted the appropriateness of factor analysis, demonstrating that the data were valid and suitable for further statistical analysis such as correlation and regression.

Reliability Analysis

Reliability analysis was conducted to assess the internal consistency of the measurement scales used in the study. The reliability of each construct was tested using Cronbach's Alpha coefficient, which measures the degree to which items within a scale are correlated and thus consistently represent the same underlying construct. According to (Bernstein & Nunnally, 1994), a Cronbach's Alpha value above 0.70 is considered acceptable for social science research, indicating good internal consistency of the scale.

Table 4.6 presents the Cronbach's Alpha values for the five main variables of the study: Customer Satisfaction, Product Quality, Product Price, Payment Method, and Convenience.

Table 7
Reliability Analysis

Variable	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
Customer Satisfaction	0.891	0.902	9
Product Quality	0.860	0.862	5
Product Price	0.862	0.862	4
Payment Method	0.876	0.876	5
Convenience	0.926	0.926	8

According to Table VIII above, all constructs indicated Cronbach's Alpha of above 0.85, revealing an excellent internal consistency for each construct across the items of measurement. The highest internal reliability was Convenience showed ($\alpha = 0.926$), indicating a high consistency between the selected items to measure the perceived convenience of online cosmetic purchasing. The lowest internal reliability was Customer Satisfaction ($\alpha = 0.891$).

Therefore, to conclude, it is evidenced that the questionnaire items related to the constructs were reliable and valid for the statistical analysis as part of correlation and regression.

Mean Value Calculation

The mean value analysis was conducted to determine the overall tendency of respondents' perceptions regarding each study variable Product Quality, Product Price, Payment Method, Convenience, and Customer Satisfaction. Mean values provide an indication of how respondents generally rated each construct on the five-point Likert scale used in the study (1 = Strongly Disagree, 5 = Strongly Agree). Higher mean values indicate a more positive perception toward the respective variable. Standard deviations represent the degree of variability in responses around the mean.

Table 8
Mean and Standard Deviation of Study Variables

Variable	N	Mean	Standard Deviation
Product Quality	392	3.6923	0.7563
Product Price	392	3.7188	0.7623
Payment Method	392	3.8990	0.7172
Convenience	392	3.8568	0.7439
Customer Satisfaction	392	3.6893	0.7272

According to Table IX, all mean values fall within the range of 3.68 and 3.90, which means that respondents positively agreed with all the statements for each construct and showed a favorable attitude to their online cosmetic purchases. It should be noted that mean represented the highest score for the construct Payment Method with a mean value of 3.8990. It means that students were more satisfied with the payment method, in terms of security, simplicity, and availability, because reliable and convenient payment systems may ensure their overall satisfaction.

The second highest mean was identified for Convenience, which represented a mean value of 3.8568. It means that students see buying cosmetics as an easy and time-consuming process. The lowest mean value was recorded for Customer Satisfaction, despite still being positive at the level of 3.6893. This means that students are generally satisfied with purchasing but can improve their experience after buying. To summarize, the mean value analysis indicated that the respondents had a positive perception of cosmetic purchases, mainly due to high satisfaction with payment and convenience. These variables will create satisfaction in the digital retail environment.

Correlation Analysis

Correlation analysis was conducted to examine the strength and direction of the relationships between the independent variables (Product Quality, Product Price, Payment Method, and Convenience) and the dependent variable (Customer Satisfaction) in online cosmetic purchases among university students. The Pearson Correlation Coefficient (r) was used to determine the linear relationship between variables.

As shown in Table X, all variables were found to have positive and statistically significant correlations at the 0.01 level (2-tailed). This indicates that increases in one variable are associated with increases in the others.

Table 9
Correlation Matrix

Variables	Product Quality	Product Price	Payment Method	Convenience	Customer Satisfaction
Product Quality	1	0.716**	0.654**	0.674**	0.726**
Product Price	0.716**	1	0.697**	0.725**	0.689**
Payment Method	0.654**	0.697**	1	0.728**	0.656**
Convenience	0.674**	0.725**	0.728**	1	0.686**
Customer Satisfaction	0.726**	0.689**	0.656**	0.686**	1

(Note: $p < 0.01$, two-tailed)

The results indicate that Product Quality ($r = 0.726$) has the strongest positive correlation with Customer Satisfaction, followed by Product Price ($r = 0.689$), Convenience ($r = 0.686$), and Payment Method ($r = 0.656$). All correlation coefficients exceed 0.65, demonstrating moderately strong to strong positive relationships among the study variables.

The high positive correlation between Product Quality and Customer Satisfaction suggests that students' satisfaction with online cosmetic purchases is highly influenced by the quality of products received. Similarly, significant positive correlations between Product Price, Convenience, and Payment Method with Customer Satisfaction indicate that reasonable pricing, ease of transactions, and convenient shopping processes also play crucial roles in enhancing customer satisfaction.

Furthermore, the correlation coefficients among the independent variables (ranging from 0.65 to 0.73) were below the critical threshold of 0.80, indicating no serious multicollinearity problem (Hair, 2010). Hence, the data are appropriate for further inferential analyses such as multiple regression. Overall, the correlation analysis highlights that all four independent variables are significantly associated with customer satisfaction, thereby supporting the study's theoretical expectations based on the Expectation-Confirmation Theory (ECT).

Multiple Regression Analysis

Multiple regression Analysis was conducted to assess the joint and individual effects of the independent variables Product Quality, Product Price, Payment Method, and Convenience on the dependent variable Customer Satisfaction in online cosmetic purchasing among university students. The analysis can reveal how much of the variance in customer satisfaction each predictor explains and how significant their effect is.

Model Summary

The model summary in Table XI shows a correlation coefficient ($R = 0.790$), indicating a strong positive relationship between the independent variables and customer satisfaction. The R Square value of 0.624 reveals that 62.4% of the variance in customer satisfaction can be explained by the four independent variables Product Quality, Product Price, Payment Method, and Convenience. The remaining 37.6% may be attributed to other factors not included in the model. The Adjusted R Square (0.620) confirms the model's high explanatory power and reliability for generalization.

Table 10
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.790	0.624	0.620	0.44838

ANOVA

The ANOVA results in Table XII indicate that the regression model is statistically significant at the 0.001 level ($F = 160.354$, $p < 0.001$). This confirms that the combined influence of Product Quality, Product Price, Payment Method, and Convenience on Customer Satisfaction is significant and that the model provides a good fit for the data.

Table 11
ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	128.956	4	32.239	160.354	0.000
Residual	77.806	387	0.201		
Total	206.761	391			

Coefficients

The coefficient table indicates the individual contribution of each independent variable to customer satisfaction. All four variables show positive and statistically significant relationships ($p < 0.05$), indicating that each has a meaningful impact on customer satisfaction.

Table 12
Coefficients of the Regression Model

Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.	Tolerance	VIF
(Constant)	0.417	0.135	—	3.095	0.002	—	—
Product Quality	0.353	0.046	0.367	7.633	0.000	0.420	2.380

Product	0.168	0.050	0.176	3.371	0.001	0.355	2.818
Price							
Payment	0.143	0.050	0.141	2.838	0.005	0.394	2.539
Method							
Convenience	0.204	0.051	0.208	4.011	0.000	0.360	2.775

- Product Quality ($\beta = 0.367$, $p < 0.001$) has the strongest effect, suggesting that higher product quality significantly increases customer satisfaction.
- Convenience ($\beta = 0.208$, $p < 0.001$) is the second most influential factor, emphasizing that easy and flexible shopping experiences enhance satisfaction.
- Product Price ($\beta = 0.176$, $p = 0.001$) also plays a notable role, indicating that fair and reasonable pricing improves satisfaction.
- Payment Method ($\beta = 0.141$, $p = 0.005$), while relatively less strong, still significantly contributes to customer satisfaction, showing that secure and simple payment systems positively influence buyers.

The Variance Inflation Factor (VIF) values for all predictors range between 2.380 and 2.818, which are well below the threshold of 10, indicating no multicollinearity problem among the independent variables. This equation shows that increases in each independent variable will lead to a corresponding positive increase in customer satisfaction.

Summary of Hypothesis Testing

All hypotheses (H1–H4) are supported, confirming that product quality, product price, payment method, and convenience significantly influence customer satisfaction in online cosmetic purchases among university students.

Table 13

Summary of Hypothesis Testing

Hypothesis	Statement	Result
H1	Product quality has a significant impact on customer satisfaction in online cosmetic purchases.	Supported
H2	Product price has a significant impact on customer satisfaction in online cosmetic purchases.	Supported
H3	Payment methods have a significant impact on customer satisfaction in online cosmetic purchases.	Supported
H4	Convenience has a significant impact on customer satisfaction in online cosmetic purchases.	Supported

Discussion and Conclusion

Overview of the Findings of the Study

The study was conducted to investigate the relationship between Customer Satisfaction and Four Dimensions Product Quality, Product Price, Payment Method and Convenience during online cosmetic shopping. This part concluded that all the four variables have positive and statistically significant effect on customer satisfaction. The reliability analysis results indicate very high internal consistency across all the constructs, with Cronbach's Alpha value of 0.85 who make reliable as the original measurement scale.

As for the mean value, the overall ratings for online cosmetic transaction perceptions showed a positive tendency, above average tendencies were found in Payment Method (Mean = 3.8990) and Convenience (Mean = 3.8568). The correlation test shows that all the independent variables were significantly and positively correlated to customer satisfaction most strongly for Product Quality ($r=0.726$, $p < 0.01$). The results of the multiple regression showed that the model was statistically significant ($F = 160.354$, $p < .001$) and accounted for 62.4% variation in customer satisfaction. Product Quality was the most important predictors ($\beta = 0.367$, $p < 0.001$) followed by Convenience ($\beta = 0.208$), Product Price ($\beta = 0.176$), and Payment Method ($\beta = 0.141$). These findings verify that product quality, price rationality, payment systems security and online shopping convenience are important factors contributing to customer satisfaction of playing university student population.

Discussion

The results of this study are consistent with the previous product/service-related satisfaction drivers in online shopping. Product Quality emerged as the most important, in line with Xu & Wang (2016) and Munishi et al. (2021) who associate quality with favorable perceptions. Appearance/health effects motivated young customers to value authenticity, resulting in truthful claims and maintenance of standards. Ease of use was the second most very important reason, in favor of Srinivasan et al. (2002) of ease, accessibility and flexibility. Customers prefer fast, easy platforms; sex is conditioned by the speed of the website/app itself. Price higher up the range was also positively associated with satisfaction, consistent with Young Kim & Kim (2004), where clear pricing increases perceived value. Cost-conscious students are highly receptive to a good deal and low prices, driving repeat sales.

Payment Method was found to have a similarly significant but less pronounced effect, consistent with Carlos Roca et al. (2009) on security/trust enhancing confidence. Sri Lankan students are adopting the online payment, but transaction security is channeling its impact. Product-related and service-related (convenience, payment) factors were combined to influence satisfaction in the ECT (Expectation-Confirmation Theory). Satak (2013) proposed that satisfaction ensues when the performance has met or exceeded the expectations.

Implications of the Study

Theoretical Implications

This study contributes to the growing literature on e-commerce and consumer behavior in the Sri Lankan context by proving the adaptation of the ECT in relation to university students who shop for cosmetics online. Customer satisfaction is substantially boosted by the combined effect of tangible factors (product quality, price) and intangible factors (payment, convenience), as international studies in developing countries have established.

Managerial Implications

These findings have important implications for online cosmetic sales to university students. Make products the focus via quality that's authentic/safe as described clearly and ingredients listed openly, thus earning trust and buys. Aim to competitiveness through pricing (discounts, rewards, bundling) Student price sensitivity and repurchase. Secure payment channels via various methods (COD, cards, mobile wallets) to minimize transaction fear. Take advantage of platform convenience with fast-loading sites, 24/7 support and simple returns such as advertise to young customers using influencer marketing and peer reviews.

Further Research Suggestions

Despite the importance of these new insights into online cosmetic purchasing and customer satisfaction among the college students, some research gaps still exist. Further research could involve other related factors -brand image, trust, delivery speed, website design and after-sales service- in gaining the holistic perceptive of satisfaction among customers. A larger sample with students from other universities or other groups of population such as working adults would also increase the generalizability. For researchers, the moderating or mediating influence of variables such as gender, income, digital literacy or online purchase frequency can also be examined to shed more light on variability in satisfaction. The longitudinal studies would see how online buying behaviour changed over time as technology and laws shifted. Last but not least, between or within countries comparisons of product categories might provide interesting new points of view.

Conclusion

This study examined the factors affecting customer satisfaction on online cosmetic purchase in university students. The results indicate that Product Quality, Product Price, Payment Method, and Convenience have a significant positive impact on satisfaction. The most decisive factor in this regard was Product Quality, followed by Convenience, Product Price, and Payment Method. Hence, online cosmetic retailers should focus on ensuring high product quality, reasonable prices, secure payment environment and convenience.

In the context of Sri Lankan market, building trust, transparency and making shopping easier should be especially beneficial for attracting and retaining young customer segments that are active in the online environment. Therefore, fitting their strategies with the most important factor for university students, online cosmetic retailers can save time and money in gaining loyalty and success in expanding the online business sector.

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References

- Bernstein, I., & Nunnally, J. (1994). Psychometric Theory (3rd ed.).
- Deyalage, P. A., & Kulathunga, D. (2019). Factors Affecting Online Customer Satisfaction: The Sri Lankan Perspective. *International Journal of Business and Management*, 14(2), 99. <https://doi.org/10.5539/ijbm.v14n2p99>
- Drexel University, & Gefen, D. (2002). Customer Loyalty in E-Commerce. *Journal of the Association for Information Systems*, 3(1), 27–53. <https://doi.org/10.17705/1jais.00022>
- Duc Le, T., Huu Nguyen, P., Quang Nguyen, T., Ngoc Nguyen, T., & Quang Le, M. (2020). Research on Factors Affecting to Customers' Intention to Online Shopping: Empirical Evidence in Vietnam Emerging Economy. *WSEAS Transactions On Business and Economics*, 17, 441–453. <https://doi.org/10.37394/23207.2020.17.43>
- Hair, J. (2010). Multivariate. In *International Journal of Economics, Business and Management Research*.
- Ishtiaq, M. (2019). Book Review Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Thousand Oaks, CA: Sage. *English Language Teaching*, 12(5), 40. <https://doi.org/10.5539/elt.v12n5p40>

- Kenyon, G. N., & Sen, K. C. (2011). Customer's Perceptions and the Dimensions of Quality. <https://doi.org/10.13140/2.1.4738.4326>
- Kotler, P., & Keller, K. L. (2006). Marketing management (12. ed). Pearson Prentice Hall.
- Kulathunga, N., Abeywickrama, H. N., & Laknath, R. (2025). The Impact of Digital Marketing Strategies on Consumer Repurchase Intention in the Food and Beverage Industry: A Study in Colombo District, Sri Lanka. 10, 83–96. <https://doi.org/10.31357/jbri.v10i02.7963.g5578>
- Limbu, Y. B., Pham, L., & Nguyen, T. T. T. (2022). Predictors of Green Cosmetics Purchase Intentions among Young Female Consumers in Vietnam. Sustainability, 14(19), 12599. <https://doi.org/10.3390/su141912599>
- Lin, C.-C., Wu, H.-Y., & Chang, Y.-F. (2011). The critical factors impact on online customer satisfaction. Procedia Computer Science, 3, 276–281. <https://doi.org/10.1016/j.procs.2010.12.047>
- Mawaddah Laura, A., & Thaib, I. (2025). The Influence of Product Quality, Online Shopping Experience and Price Fairness on Consumer Loyalty at Skintific Skincare in Padang City with Customer Satisfaction as a Mediating Variable. International Journal of Economics and Management Research, 3(3), 297–309. <https://doi.org/10.55606/ijemr.v3i3.428>
- Murni, Y. (2018). Analysis of the Influence of Trust, Easiness in Shopping, Product Quality to Customer Satisfaction to Increasiness in Shopping Consumer Loyalty Online Shopping. International Journal of Economics, Business and Management Research.
- Nandasena, A., & Wickramasinghe, M. (2024). Factors Affecting Customer Satisfaction in Online Shopping in Sri Lanka. International Journal of Research and Innovation in Social Science, VIII(II), 2083–2109. <https://doi.org/10.47772/IJRISS.2024.802148>
- Nuryakin, Md Saad, M. S., & Maulani, M. R. (2024). Purchase intention behavior of halal cosmetics. Comparing study between Indonesia and Malaysia millennial generation. Journal of Islamic Accounting and Business Research, 15(8), 1266–1292. <https://doi.org/10.1108/JIABR-06-2021-0177>
- Ranasinghe, R. A. S. N., Maduwanthi, S. D. T., & Marapana, R. A. U. J. (2019). Nutritional and Health Benefits of Jackfruit: A Review. International Journal of Food Science, 2019, 1–12. <https://doi.org/10.1155/2019/4327183>
- Raykov, T., Dimitrov, D. M., & Asparouhov, T. (2010). Evaluation of Scale Reliability With Binary Measures Using Latent Variable Modeling. Structural Equation Modeling: A Multidisciplinary Journal, 17(2), 265–279. <https://doi.org/10.1080/10705511003659417>

- Sadiq, M., Adil, M., & Paul, J. (2021). An innovation resistance theory perspective on purchase of eco-friendly cosmetics. *Journal of Retailing and Consumer Services*, 59, 102369. <https://doi.org/10.1016/j.jretconser.2020.102369>
- Sasikumar, P., & Vijayakumar, M. (2022). A Study on Consumer Satisfaction towards Online Shopping with Special Reference to Namakkal District. The. <https://doi.org/10.5281/Zenodo.6671124>
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (Eighth Edition). Pearson.
- Sheng, K. C. Y., Yeen, L. Y., Luen, L. W., & Peng, O. S. (2018). FACTORS INFLUENCING CONSUMER SATISFACTION IN ONLINE SHOPPING.
- Solin, A., & Curry, A. (2023). Perceived quality: In search of a definition. *The TQM Journal*, 35(3), 778–795. <https://doi.org/10.1108/TQM-09-2021-0280>
- Srinivasan, S. S., Anderson, R., & Ponnnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, 78(1), 41–50. [https://doi.org/10.1016/S0022-4359\(01\)00065-3](https://doi.org/10.1016/S0022-4359(01)00065-3)
- USJ. (2024). Annual Report 2024. USJ - University of Sri Jayewardenepura, Sri Lanka. <https://www.sjp.ac.lk/annual-report-2024/>
- Wantara, P., & Tambrin, M. (2019). The Effect of Price and Product Quality Towards Customer Satisfaction and Customer Loyalty on Madura Batik. *International Tourism and Hospitality Journal*, 2(1), 9.