

Unveiling the Online-Offline Divide: Predicting Retail Channel Membership for Luxury Jewelry Consumers Using Discriminant Analysis

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Abstract: The study explores the factors that influence consumers to choose between online and offline channels for purchasing products and services. Using a quantitative approach, data was collected from 352 respondents through a survey and analyzed using discriminant analysis. The study found that consumers tend to purchase products online for self-gratification, better offers, relative price, variety of products, product information, and better price comparison. On the other hand, consumers choose offline channels for quality, reliable information, quality of judgment, and better after-sales services. The paper's implications extend to marketing practitioners, specifically in luxury product marketing for segmentation, targeting, and positioning.

Keywords: Channel preferences, Classification technique, Discriminant analysis, Online & Offline retail, Luxury consumer behaviour.

1 Introduction

Modern mobile technologies (such as advanced shopping applications, scan-and-go technology, artificial intelligence, self-checks, etc.) have revolutionized the industry. There have been changes in business models as well as consumer shopping behaviors due to the advent of catalogs, online shops, mobile applications, brick-and-mortar stores, and social media [1][2][3]. Increasingly, consumers are interacting with brands in a multichannel environment. The last step is for individuals to decide where to buy it[4][5]. Thus, consumers interchangeably and simultaneously use different channels and touchpoints to purchase a luxury product [6][7]. There is an increasing webrooming and showrooming phenomenon among millennials. Showrooming refers to acquiring a product's information offline but eventually purchasing that product from an online platform [8][9]. In contrast, Webrooming refers to gathering information about a product online but purchasing that product from offline mode [10][11]. Such shopping phenomena become predominant among millennial consumers [12][13] across the globe.

1.1 Research problem

Despite the mammoth work in the area of channel preferences [14][15], where the researchers predominantly focused on products such as apparel [16], footwear [17], bags, and watches [18]. Additionally, few pieces of research focused on the luxury segments' multichannel aspects, such as webrooming and showrooming [19][20][21] still, limited contribution is reported on the basis on which consumer classified as online and offline buyer. For example, credibility [22], security [23], trust[24], price value [25], and authenticity[26], discussed which play a decisive role in multichannel aspects. Present literature given a limited attention to Jewellery products. Therefore, the present study fills this gap. Jewellery being an unstandardized and high-involvement product, is not growing fast despite the overall online adoption is growing for the categories such as books, electronics, apparel, footwear & home décor[13]. Online Jewellery contributed to 7.6% of the global Jewellery market in 2019. Both US and China had high online penetration with 10.3% and 9.0%, respectively. While India had a mere 1.2% penetration for online jewellery. Therefore, it is pertinent to discuss what drives the consumers to purchase from online or offline. Additionally, this study answers the research question of what are the criteria's consumer follow to discriminate between online and offline channel? Lastly, the study predicted the consumer's group memberships between online and offline channels against the observed data.

1.2 Objective of the paper

The objective of this study is to predict the consumers as online or offline buyer based on the underlined factors discussed in the study by using discriminant analysis. In addition, to segment the consumers between online and offline buyers for better positioning targeting consumer.

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1.3 Research Methodology

The research used a quantitative research approach to attend the study objectives. Based on highlighted criteria retrieved from qualitative analysis and the literature, a statistical method such as linear discriminant analysis (LDA) was used to predict consumer group membership between online and offline purchasers. The study included respondents who were involved in shopping jewellery items. Respondents were screened based on the responses to the questions such as have you done shopping recently for you or your family members? and have you purchased jewellery recently by online or offline channel? Respondents were selected by using non-probability judgmental sampling. The thumb rule proposed by [27] used to pick 352 responders. The sample size would be calculated by multiplying the number of items in the questionnaire by ten. Data collection was done by using self-administered survey employed both using online and offline methods. A survey link was shared through emails and social networking sites like Facebook, LinkedIn, and Instagram. In addition, personal interviews by using structure questionnaire were conducted to ensure maximum participation of the respondents to the study. Apart from the survey, in-depth interviews of 26 customers were also conducted to extract the underlined factors for classification of consumers.

For qualitative data collection, the experts were first screened using their LinkedIn profile, then contacted and fixed an online zoom meeting with them for the interview. Forty-six participants were screened and contacted. However, only 26 were ready to participate in the interview process. So, the final sample size for the in-depth interview was 26.

Similarly, approximately 1021 respondents were approached using online and offline methods for the survey method. Out of 1021 responses, only 415 were received back. After screening and removing the missing values, only 352 responses were qualified for final analysis.

A structured questionnaire was utilised as a survey tool in the study to collect data. The questionnaire was divided into two parts: the first part focused on respondents' demographics and general questions about their age, gender, education, occupation, income, and reason for shopping for jewellery; the second part focused on specific questions that classified respondents as online or offline buyers. Questions were asked on a five-point Likert scale ranging from highly agree to strongly disagree, with 5 indicating strongly agree and 1 indicating strongly disagree. The constructs and items of the questionnaire were gathered from prior studies to confirm the instruments' reliability and validity (Table 1). The constructs and the items of the questionnaire were adopted from previously published work such as [28][29][30]. Before sending the questionnaire to many respondents, it was sent to small targeted respondents for pre-testing to ensure content or expert validity. Later, survey questionnaire was also checked by experts such as professors teaching retail management, online consumer behaviour, and working in retail industries professionals to ensure face or expert validity. After that, the questionnaire was checked for internal consistency by determining the value of Cronbach's alpha. The value of Cronbach's alpha for each construct was more than the threshold of 0.70 for each item, hence stands reliable [31].

2 Hypothesis development

2.1 Price and discount-related factors

Better Price

Online retailers typically have lower administrative costs than physical stores, allowing them to offer jewelry at competitive prices. If consumers perceive that they can obtain better prices online, they are more likely to make purchases via the Internet [32]. Despite the fact that online retailers may have lower overhead costs, this does not inevitably mean that they offer consistently lower prices for jewelry than offline retailers. Customers may also consider product quality, customer service, and the in-person purchasing experience, which may offset any potential price advantage online retailers may have[33].

H1: A better price significantly influences the choice of online and offline channels

Better Offers

In addition to price, customers assess the overall offers of their purchases. This includes product variety, customization options, additional services, and ease of use. If consumers perceive that online retailers provide a superior overall offer and value proposition, they will be more likely to shop online [33]. Offline retailers may provide a more personalized and tactile purchasing experience, while online retailers may offer product variety and convenience [34].As a result, customers may place a different amount of importance on online and offline variables, which may affect their channel preferences [34].

H2: A Better offer significantly influences the choice of online and offline channel.

Special Discounts

To attract consumers, online retailers frequently offer exclusive discounts and promotional offers [34]. If consumers perceive that they can receive exclusive discounts or limited-time offers online, they will be more inclined to choose the online channel over offline alternatives [35]. Special discounts and promotional offers can be enticing, but their influence on the channel selection of consumers may be limited [36]. Other factors, such as trust, authenticity, and the ability to tangibly examine jewelry prior to purchase, may be more important to customers than discounts and promotional offers [37].

H3: Special discounts significantly influences the choice of online and offline channel.

Relative Price

Prior to making a purchase decision, customers often compare prices across various channels. If customers perceive that the online or offline channel offers a relative price advantage for jewelry purchases, this perception may substantially influence their channel preference [28]. Customers cannot rely solely on price when deciding which channel to utilize. They may consider a variety of factors, such as each channel's reputation, brand loyalty, customer reviews, and purchasing experience [38]. Therefore, the relative price advantage between online and offline channels may not be the most influential factor in consumers' purchasing decisions.

H4: Relative Price significantly influence the choice of online and offline channel

Price Comparison

Customers have access to a variety of online platforms and tools that facilitate price comparison across retailers in the digital age[39]. If consumers frequently engage in price comparisons and discover that online retailers offer more competitive prices for comparable jewelry products, they are more likely to opt for the online channel [40]. Although consumers have access to tools and platforms that facilitate price comparison, they may not use them extensively when purchasing jewelry. Customers may prioritize factors other than pricing, such as reliability, craftsmanship, and the ability to interact with a knowledgeable staff, when purchasing jewelry, which is frequently a high-value and emotionally significant item [41].

H5: Comparing price of the products and services significantly influencing the choice of online and offline

2.2 Quality Related Factors

Relative Quality

The perception of the quality of jewelry products is a significant factor that can influence the channel preferences of consumers. Customers may base their purchase judgements on the quality of materials, craftsmanship, and the overall reputation of retailers [42]. If customers perceive that the relative quality advantage rests with either the online or offline channel, this perception may have a significant impact on their channel preference for jewelry purchases. Those who place a premium on product quality and the ability to physically scrutinize jewelry prior to purchase may favor offline channels [43]. Customers who trust the product descriptions, reviews, and reputation of online retailers for providing high-quality items may prefer the online channel[44]. Examining the effect of relative quality on consumers' channel preference will provide valuable insight into the role of product quality in influencing purchasing decisions across channels.

H6: Relative quality significantly influence the choice of online and offline channel

Quality Judgement

The capacity of customers to evaluate the quality of jewelry products has a significant impact on their channel preference. If consumers are confident in their ability to judge quality, they are more likely to choose the online channel for its convenience and variety[45]. Those who prefer to physically examine jewelry, however, may favor the offline channel[46]. This decision is influenced by prior knowledge, online purchasing experience, and confidence in product descriptions [47]. Understanding the impact of quality perception on channel selection enables retailers to resolve concerns and provide the necessary data to facilitate decisions.

H7: A better quality judgement in offline than online

2.3 Varieties related factors

Varieties of Jewelry

Diverse jewelry options are a major factor influencing the channel preferences of consumers. Customers desiring unique designs are attracted to the online channels' vast selection of options [35]. Customers who desire a curated selection and the ability to physically examine jewelry are catered to by offline channels, which are limited by space [48]. Understanding the influence of jewelry variety enables retailers to customize their offerings across channels. By providing a variety of

options, online retailers are able to attract customers who are interested in a wide variety of styles, whereas offline retailers emphasize personalized purchasing experiences[49]. A vast selection of jewelry enhances both the shopping experience and consumer satisfaction. To effectively satisfy the preferences of their target customers, retailers must consider the variety of offerings in each channel.

H8: Availability of varieties of Jewelry influences the choice of online and offline channel

Relative Choice

Customers' channel preferences are significantly influenced by relative choice, which compares options between online and offline channels [50]. Consideration is given to product availability, convenience, personalized service, and the overall purchasing experience [51]. Customers' perception that one channel offers a larger variety of options can significantly influence their choice [52]. For instance, online channels may appeal to customers desiring a vast selection, whereas offline channels may appeal to those who place a premium on personal interaction and product inspection. Recognizing the impact of relative choice enables retailers to customize their offerings across channels [53]. Retailers can optimize product assortment, customer service, and the shopping environment to meet the expectations of consumers who choose between online and offline channels by considering customer preferences [54].

H9: Availability of relative choices influences the choice of online/offline channel based on relative choice

2.4 Service-related factors

Aftersales Services

Aftersales services, such as customer support, returns, adjustments, and warranties, have a substantial impact on the channel preferences of customers[55]. Customers desiring convenience are drawn to online channels that offer convenient and effective after-sales support, such as simple returns and online customer support. Offline channels, on the other hand, provide immediate and personalized support from knowledgeable staff [56]. The availability and quality of after-sales services are crucial factors in the decision-making process of consumers [57]. Considerations include simple returns, responsive customer service, and reliable warranty policies [58]. Customers value exceptional assistance, so retailers who excel at providing comprehensive after-sales support acquire a competitive edge [59]. Understanding the impact of after-sale services assists retailers in prioritizing and enhancing their offerings. By consistently providing superior customer service, retailers can increase customer satisfaction, foster customer loyalty, and influence customer channel preferences [3].

H10: Aftersales services influences the choice of online and offline channel

Easy exchange & return

Customers' channel preferences are significantly influenced by the convenience of product exchange and return [60]. Customers value exchange and return policies that are flexible and hassle-free because they provide peace of mind and a sense of security when making purchases [61]. Frequently, online channels offer simple and convenient exchange and return procedures, allowing customers to initiate returns online and return items without difficulty [62]. This appeals to consumers who seek ease and simplicity in return management. Offline channels, on the other hand, may offer immediate in-person exchange and return options [63]. Customers who prefer face-to-face interactions and the capacity to physically return items may be more likely to prefer offline channels [64]. Retailers must comprehend the effect of easy exchange and return policies on consumer channel selection [65]. By providing transparent and customer-friendly return policies, retailers can attract customers who value flexibility and convenience. In addition, expedient exchange and return procedures contribute to the overall satisfaction and loyalty of customers [63]. Retailers must continually assess and improve their exchange and return policies across both online and offline channels in order to meet consumer expectations and provide a seamless shopping experience.

H11: Easy exchange & return influences the choice of online and offline channel

2.5 Information related factors

Product Information

The availability and quality of product information have a significant impact on the channel preferences of consumers [66]. Customers are able to make well-informed decisions from the comfort of their own residences thanks to the availability of detailed product descriptions, specifications, images, and customer reviews on online channels [67]. This is appealing to customers who desire comprehensive information prior to purchasing. In contrast, offline channels may rely on in-store displays, product labelling, and knowledgeable staff interactions to convey product information [68]. Customers who prefer a hands-on and interactive approach may value the opportunity to inspect products in person and receive personalized

guidance[69]. Understanding the influence of product information on consumer channel selection enables retailers to optimize product presentation and information dissemination across channels[70]. By providing precise and comprehensive information, retailers can increase consumer trust and confidence, ultimately influencing their channel selection.

H12: Product information influences the choice of online and offline channel

Reliable Information

Customers' channel preferences are heavily influenced by the reliability of information. Customers value accurate and reliable product authenticity, quality, pricing, and merchant reputation information [71]. Customers are frequently able to access customer reviews, ratings, and merchant ratings via online channels, allowing them to evaluate the credibility of the information and make informed decisions [72]. In contrast, offline channels may rely on word-of-mouth recommendations, brand reputation, and face-to-face interactions to build trust. Retailers must comprehend the effect of reliable information on consumer channel selections [73]. By ensuring the accuracy and veracity of information across all channels, retailers can increase consumer confidence [13]. This, in turn, influences their decision to purchase through a particular channel. Retailers can cultivate consumer trust, loyalty, and satisfaction across both online and offline channels by placing a premium on accurate information and transparency[46].

H13: Reliable information influences the choice of online and offline channel

Unavailability of Product

The availability of a sought product has a substantial impact on the channel preferences of customers. Customers seeking specific or niche products that may not be readily available offline are frequently catered to by online channels with a greater selection [46]. In contrast, offline channels may have restricted inventory due to space limitations [74]. The lack of a desirable product in a customer's preferred channel prompts them to investigate alternative channels[50]. For example, if an item of jewelry is out of stock in a physical store, customers may seek it through online channels. It is essential to comprehend how product unavailability influences the channel preferences of consumers [66]. Retailers can optimize inventory management and ensure a seamless flow of products across channels to decrease the likelihood that customers will seek alternatives due to unavailability[75]. Consistent product availability increases customer loyalty and satisfaction. By addressing the possibility of product unavailability, retailers can better meet customers' expectations and increase their preference for a particular channel.

H14: Probability of Unavailability of Product influences choice of online and offline channel

Data Privacy

Customers' primary concern when deciding between online and offline channels is the preservation of personal information [76]. During the purchase procedure, online channels frequently require customers to disclose personal information, raising concerns about data privacy and security [77]. Customers may be hesitant to provide sensitive information online if they have doubts regarding the retailer's credibility and security measures [58]. Offline channels, on the other hand, offer the benefit of face-to-face interactions, alleviating data privacy concerns [20]. Because they have direct control over its disclosure, customers may feel more at ease providing personal information in person[78]. Retailers must comprehend the effect of data privacy on consumer channel preferences[76]. By demonstrating robust data protection measures, transparent privacy policies, and secure payment systems, online retailers can gain customers' trust and allay their concerns[29]. However, [79] argued that online shopping is still a risky affair due to the various concerns such as product delivery, lack of accuracy on website and information inefficiency. Whereas, offline retailers can emphasize their commitment to privacy and reassure consumers about the secrecy of their data by emphasizing their commitment to privacy [80]. By prioritizing data privacy and security, retailers can increase consumer confidence, encourage data sharing, and influence channel selection.

H15: Concern about data privacy influences the choice of online and offline channel

Self-Gratification

Self-gratification, or the pleasure derived from making a purchase, significantly influences the channel preferences of customers[81]. Customers can browse and order products from the comfort of their own homes through online channels, which offer convenience and immediate gratification [82]. This is appealing to customers who desire instant gratification. In contrast, offline channels provide customers with a tactile and interactive experience, allowing them to physically scrutinize and try on products [83]. Those who value the tangible aspects of purchasing experience a greater sense of self-satisfaction upon acquiring the item immediately [84]. Retailers must comprehend the effect of self-gratification on consumer channel selection [85]. By catering to customers' desire for immediate gratification, online merchants can ensure streamlined transactions and prompt product delivery [86]. Offline retailers can concentrate on establishing an immersive,

self-gratifying in-store environment [87]. Aligning offerings with the self-gratification preferences of consumers increases customer loyalty and satisfaction [88]. By recognizing and responding to consumers' need for instant gratification, retailers can influence their future channel preference.

H16: Self-gratification influences the choice of online and offline channel

The following conceptual framework was built based on the above literature:

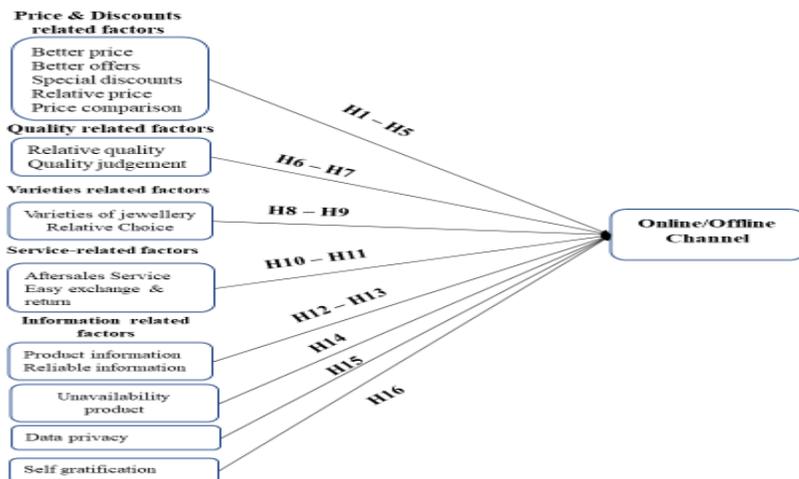


Fig.1 Proposed model

3 Materials and Methods

A question was asked to the respondents about whether they purchase jewellery for themselves or gifting purposes. The result shows that most respondents purchase jewellery for themselves (Table 3). These findings were also supported by[89]. According to that 82 percent of consumers purchase jewellery for themselves as self-gifting jewellery; Which is accurate because it is often purchased more for personal use than for gifting purposes. Also, jewellery can hold a lot of emotional connections for people. They may have a sentimental attachment to a particular piece of jewellery. There are several other reasons for this, like, personal taste, as jewellery is a highly personal item and every individual has their unique taste and preference; hence, it can be complicated to know someone else’s style choice taste. Another reason can be the size and fit jewellery items such as rings, bracelets, and necklaces come in different sizes, which makes it essential to get the right fit. Knowing their exact size can be difficult if you purchase jewellery for someone else. The cost of jewellery makes it expensive and exquisite, especially when looking for a high-quality item. It cannot be easy to justify spending much money on a gift for someone else. Overall, jewellery can make a great gift, but it is often purchased more for personal use due to its highly personal nature and the challenges involved in purchasing it as a gift. Furthermore, the sample's demographics revealed that it is made up of people from various backgrounds, such as age, gender, education, occupation, and income (Table 1). Furthermore, the study used linear discriminant analysis to divide consumers into online and offline buyers based on channel preferences.

Table 1 Items reliability

Sr. No	Items	No of items	Cronbach's Alpha
1	Self_gratification	4	0.789
2	Better_price	3	0.796
3	Better_offers	3	0.895
4	Special_discounts	3	0.892
5	Relative_quality	4	0.856
6	Relative_price	3	0.847

7	Varieties_jewellery	5	0.825
8	Product_information	4	0.863
9	Reliable_information	4	0.796
10	Price_comparison	3	0.795
11	Easy_exchange_return	3	0.823
12	Unavailability_product	3	0.899
13	Quality_judgement	4	0.785
14	Data_privacy	3	0.788
15	After_SS	4	0.736
16	Relative_Choice	4	0.759

Table 2 Sources of the research items

Constructs	Items	Sources
Price and discount related factors	Better Price, better offers, special discounts, relative Price, price comparison	(Wang et al., 2021), Baykal, 2020) (Setiawan et al., 2020) (Kumari et al., 2022) (Kromidha et al., 2023), (Soni et al., 2022) (Akturk&Ketzenberg, 2022).
Quality related factors	Relative quality, quality judgement	(Park et al., 2021), (Hermes &Riedl, 2021), (Haridasan et al., 2021), (Neslin, 2022)
Varieties related factors	Varieties of jewellery, relative choice	(Setiawan et al., 2020), (Timoumi et al., 2022), (Fang et al., 2023), (Liu et al., 2023).
Service-related factors	Aftersales service, Easy exchange & return	(Yin et al., 2022), (Nasir et al., 2021), (Hwang et al., 2022).
Information related factors	Product information, reliable information, unavailability of product, data privacy and self-gratification	(Goraya et al., 2022), (Bozzi et al., 2022), (Zhou et al., 2022), (Jain et al., 2021), (Fang et al., 2021).

Table 3 Demographic profile of the respondents

Demographic Variables		N	Percent
Sex	Male	160	46.4
	Female	191	53.0
	Trans	1	.7
Education	Secondary	27	2.6
	Sr. Secondary	40	8.6
	Graduation	105	31.8
	Post-Graduation	170	53.6
	Doctorate	10	3.3
Occupation	Self-employed	205	38.4

	Unemployed	32	11.3
	Homemaker	5	2.0
	Student	110	48.3
Income	Below 3 Lakhs	148	39.7
	3 Lakhs – 6 Lakhs	107	27.2
	6 Lakhs and 9 Lakhs	60	16.6
	9 Lakhs and 12 Lakhs	24	7.9
	12 Lakhs – 15 Lakhs	10	6.6
	15 Lakhs and Above	3	2.0
Age	18-25	216	62.3
	26-33	124	34.4
	34-41	9	2.6
	42 and above	2	.7
For what purpose do you purchase jewellery?	For your own consumption	321	91.2
	For gifting	31	8.8
	Total	352	100.0

Linear discriminant analysis (LDA)

The group differences were analysed using discriminant analysis. The criteria for group differences were also reviewed. Based on the highlighted characteristics, this study used discriminant analysis to divide respondents into online and offline buyers. The dependent variable in this case is the category or group, such as online and offline channels, and the independent variables are needed fulfilment, better price, better offer, special discounts, relative quality, relative price, jewellery varieties, product information, reliable information, price comparison, easy exchange and return, and so on. If the significance value is greater than 0.05, the factors do not differ substantially between online and offline buyers. Except for improved price, special discounts, and easy exchange and return, each variable in the discriminant model is significant, according to the results in table 4. As a result, these three factors might be viewed as not significantly contributing to the dependent variable and are thus eliminated from future analysis.

Table 4. Tests of Equality of Group Means

Observed variables	Wilks' Lambda	F	df1	df2	Sig.
Self_gratification	0.275	393.292	1	351	0.000
Better_price	1.000	0.065	1	351	0.799
Better_offers	0.463	172.731	1	351	0.000
Special_discounts	0.999	0.173	1	351	0.678
Relative_quality	0.618	92.114	1	351	0.000
Relative_price	0.242	465.527	1	351	0.000
Varieties_jewellery	0.693	65.946	1	351	0.000
Product_information	0.105	1266.816	1	351	0.000
Reliable_information	0.462	173.437	1	351	0.000

Price_comparison	0.103	1293.851	1	351	0.000
Easy_exchange_return	0.992	1.187	1	351	0.278
Unavailability_product	0.094	1443.285	1	351	0.000
Quality_judgement	0.202	588.849	1	351	0.000
Data_privacy	0.103	1295.101	1	351	0.000
After_SS	0.165	751.793	1	351	0.000
Relative_Choice	0.222	521.902	1	351	0.000

Wilks' Lambda

Next, Wilks' lambda test statistics were determined to validate the discriminant model (Table 4). This test determines how significant the discriminant model's contribution is. Wilks' lambda has a value ranging from 0 to 1. If the Lambda value approaches 0, it indicates that the conceptual model's relevance is valid. The chi-square statistic corresponds to this test value. The obtained p-value is less than the threshold (P0.05). It indicates that the model is a good fit. Wilk's lambda is another measure of the potential of a variable. Wilk's lambda values less than one imply that the variable is better at discriminating between groups. According to table 5, the most essential factor is product unavailability, followed by data privacy, price comparison, product description, and so on.

Table 5. Wilks' Lambda

Test Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.018	563.000	16	.000

Further, Wilk's Lambda variables percentage,.018, justifies the group disparities. As a result, it has been found that the model's parameters have statistically significant discriminating power. With a significance level of.000 and a Wilk's Lamda of.018, we may conclude that this model is deemed fit.

Eigen Value

The eigenvalue represents the ratio between group and within-group variance and measures the canonical correlation of the discriminant function (Table 6). The canonical correlation represents the correlation between the discriminant function with the experimental group. It represents a well-differentiated function. A discriminating function will have a high correlation. The canonical correlation squared is.982, implying that the current correlation is 0.991, accounting for 98 percent of the variation in the discriminating model.

Table 6. Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	53.212 ^a	100.0	100.0	.991

Structural matrix

Structural matrix, also known as discriminant or canonical loading, represents the correlation between the observed variables and unstandardized discriminant function. Table 7 demonstrates the discriminant loadings. All variables significantly correlate to the discriminant function except for better prices, easy exchange and returns, and special discounts.

Table 7. Structure Matrix

Independent variables	Function
	1

Unavailability_product	-0.438
Product_information	0.394
Price_comparison	0.384
Data_privacy	0.373
After_SS	-0.275
Quality_judgement	-0.263
Relative_Choice	0.262
Relative_price	0.239
Self_gratification	0.171
Reliable_information	-0.135
Better_offers	0.131
Relative_quality	-0.115
Veriaties_jewellery	0.084
Easy_exchange_return	-0.026
Better_price	0.004
Special_discounts	-0.003

Classification function coefficients

Classification function coefficients are used to determine the value of discriminant scores for the observed categories for the online and offline buyers. The following equations can be derived based on Table 8. The discriminant score helps to determine the predicted group membership.

Table 8. Classification Function Coefficients

	Channel	
	Online	Offline
Self_gratification	3.252	.484
Better_offers	7.864	5.512
Relative_quality	2.565	3.594
Relative_price	5.696	1.648
Veriaties_jewellery	3.346	3.283
Product_information	14.886	6.944
Reliable_information	5.145	7.252
Price_comparison	13.288	5.750
Unavailability_product	.695	20.892
Quality_judgement	2.000	12.420
Data_privacy	17.288	4.412
After_SS	7.649	8.906
Relative_Choice	14.787	4.063
(Constant)	-210.472	-154.558

Fisher's linear discriminant functions

Discriminant equation:

Online: -210.472+ Self_gratification *3.252+ Better_offers*7.864+ Relative_quality*2.565+ Relative_price*5.695+ Veriaties_jewellery*3.346+ Product_information*14.886+ Reliable_information*5.145+ Price_comparison*13.288+ Unavailability_product*0.698+ Quality_judgement*2.000+ Data_privacy*17.288+After_SS*7.649+ Relative_Choice*14.787

Offline:-154.558+ Self_gratification*.484+ Better_offers*5.512+ Relative_quality*3.594+ Relative_price*1.648+ Veriaties_jewellery*3.283+ Product_information*6.944+ Reliable_information*7.252+ Price_comparison*5.750+ Unavailability_product*20.892+ Quality_judgement*12.420+ Data_privacy*4.412+After_SS*8.907+ Relative_Choice*4.063

Functions at Group Centroids

Table 9 displays the average discriminant function scores for each group, online and offline. We may discover that the mean for online is 9.433, and the mean for offline is -5.831 if we calculated the results of the first function in our data for each scenario, i.e., online, and offline, and then checked the means of the results by group.

Table 9 Function at group centroid

Channel	Function
	1
Online	9.433
Offline	-5.831

Unstandardized canonical discriminant functions evaluated at group means

Classification Statistics

Finally, Table 10 displays the discriminant model's classification results. In total, the model properly classifies 100.0 percent of the cases. These are the projected frequencies of the groups based on the analysis. The numbers in each column indicate how many appear to have been correctly and incorrectly categorised. As indicated in the table, 149 of the 149 cases projected to be in the online group were correctly predicted, whereas 0 were incorrectly predicted. Furthermore, 203 of the 203 cases projected to be in the offline group were correctly predicted, whereas 0 were incorrectly predicted. As a result, we can say that the projected and original groups (online and offline) were appropriately classified.

Table 10. Classification Results^{a,b}

		Channel	Predicted Group Membership		Total
			Online	Offline	
Original	Count	Online	149	0	149
		Offline	0	203	203
	%	Online	100.0	.0	100.0
		Offline	.0	100.0	100.0

a. 100.0% of original grouped cases correctly classified.

Since the observed and predicted group membership is the same, it may lead to selection bias. A few random cases were selected by applying the function RV to overcome such biases. BERNOULLI (.60), and based on their selection, a test was performed on selected cases and compared against non-selected cases. It was found that 100% of the unselected groups were also correctly classified (Table 11), further validating the discriminant analysis results and overcoming the selection bias.

Table 11. Classification Results^{a,b}

			Channel	Predicted Membership		Group Total
				Online	Offline	
Cases Selected	Original	Count	Online	90	0	90
			Offline	0	122	122
		%	Online	100.0	.0	100.0
			Offline	.0	100.0	100.0
Cases Not Selected	Original	Count	Online	60	0	60
			Offline	0	81	81
		%	Online	100.0	.0	100.0
			Offline	.0	100.0	100.0

a. 100.0% of selected original grouped cases correctly classified.

b. 100.0% of unselected original grouped cases correctly classified.

Based on the above results, Table 11 represents the summary of the hypothesis result.

Table 12 Summary of the hypothesis testing result:

Statements	F	df1	df2	Sig.	Result
H1: A better price significantly influences the choice of online and offline channels	0.065	1	351	0.799	Not accepted
H2: A Better offer significantly influences the choice of online and offline channel	172.731	1	351	***	Accepted
H3: Special discounts significantly influences the choice of online and offline channel	0.173	1	351	0.678	Not accepted
H4: Relative Price significantly influence the choice of online and offline channel	465.527	1	351	***	Accepted
H5: Comparing price of the products and services significantly influencing the choice of online and offline	1293.85	1	351	***	Accepted
H6: Relative quality significantly influence the choice of online and offline channel	92.114	1	351	***	Accepted
H7: A better quality judgement in offline than online	588.849	1	351	***	Accepted
H8: Availability of varieties of Jewelry influences the choice of online and offline channel	65.946	1	351	***	Accepted
H9: Availability of relative choices influences the choice of online/offline channel based on relative choice	521.902	1	351	***	Accepted
H10: Aftersales services influences the choice of online and offline channel	751.793	1	351	***	Accepted

H11: Easy exchange & return influences the choice of online and offline channel	1.187	1	351	0.278	Not accepted
H12: Product information influences the choice of online and offline channel	1266.82	1	351	***	Accepted
H13: Reliable information influences the choice of online and offline channel	173.437	1	351	***	Accepted
H14: Probability of Unavailability of Product influences choice of online and offline channel	1443.29	1	351	***	Accepted
H15: Concern about data privacy influences the choice of online and offline channel	1295.1	1	351	***	Accepted
H16: Self-gratification influences the choice of online and offline channel	393.292	1	351	***	Accepted

4 Results and Conclusion

In this study, we divide consumers into online and offline buyers based on sixteen characteristics related to their channel preferences. Based on these criteria, a significant variation in channel preference was discovered. These criteria included self-gratification, better offers, relative quality, relative pricing, jewellery varieties, product information, reliable information, price comparison, product unavailability, quality judgement, data privacy, and after-sale service. According to the findings, customers prefer to purchase online since their demands are better met when they do so. Self-gratification is driven by features such as personalised shopping lists, past purchase records, no queue at payment terminals, home delivery, and people with limited time [90]. Consumers make every effort to save money while buying, which is an important aspect of any shopping experience. People prefer to shop online since they may frequently discover things at a lower price than in stores. Although customers may incur shipping charges, the money they save with the base price can be compensated. Online channels have relatively better promotional offers; heavy discounts are given more online because online retailers have a pricing advantage because there are no expenses like store rent, bills, maintenance costs, or channel costs involved in the product, which makes the price of the product less than an offline store. As a result, even when shipping costs are factored in, online purchasing is still preferred to offline shopping[91]. Variety is the most important factor impacting the market. More products in a store equals increased sales, and vice versa. People tend to prefer stores with a broader variety of options. The ability to physically touch and view a thing influences a person's willingness to shop. Online retailers have more designs than offline stores since they stay up with the current fashion and trends while considering consumers' shifting tastes and preferences. In comparison, the alternatives for offline purchases are restricted. There aren't many options accessible. The stocks are occasionally out of date. People look for different designs and possibilities while buying; yet, offline businesses lack the diversity of products that a customer obtains online, which is impossible to match because they cannot keep stock. Online merchants have cooperated with many businesses to provide products to customers. When purchasing a product from a retailer, we have the option and freedom to try on the selected item outfits. This service, however, is not available online. As a result, purchasing offline adapts more to the shifting tastes and interests of clients. The information on the website may be incorrect or improper. Consumers were unable to obtain complete product information since it differed among websites. As a result, the customer's online orders will be impacted. The customer may only review and verify the product's details after receiving it, which leads to an increase in returns and replacements. Customers can avoid this by always checking the ratings and reviews before ordering the product [92]. When it comes to price comparison, the online shopping mode benefits its customers because they can simply compare the prices of jewellery by visiting several sites and selecting whether to purchase it. When everything is offline, comparing prices at each store is time-consuming because the price of each piece of jewellery is rarely displayed [93]. Respondents prefer internet shopping for their preferred goods because it is more readily available than offline shopping since the product frequently runs out of stock [94]. The majority of respondents found it difficult to determine the quality of jewellery simply by looking at a picture without touching it, which will aid them in making a purchase decision. Without feeling the preferred or wanted things, it is difficult to be certain of their worthiness, quality, or sense [95]. Offline purchasing is thought to be more genuine than online shopping. We can feel the texture of the product and learn about it while purchasing it. When we buy something offline, we know exactly what we're getting. However, it is difficult to know what thing we acquire while purchasing online because we can only see what we see on the websites, not what we receive when the product arrives [96]. When it comes to shopping, privacy of your data becomes very crucial, and many do not trust online shopping with privacy since they believe they will be spammed, whereas offline shopping appears to win people's confidence. According to [97], more than 90% of online customers are concerned about their privacy, and more than half

have cut their online purchases due to privacy concerns. Respondents have opted to shop offline because it eliminates the need to go through a lengthy process to receive user support, technical support, and after-sales service with their purchase. Whereas Online, these services may incur additional fees. Because of the value-added services consumers recognize, more people prefer shopping offline than online [98].

The study has various theoretical implications. First, the existing theories were limited in explaining the specific variables that segments the customers based on their channel choice. In contrast, the current study provides an exact classification of the customers based on their channel preferences. Earlier researchers either focused on online or offline channels or limited themselves to explaining webrooming and showrooming phenomena. These researches failed to address the exhaustive list of variables that helps in identify consumers based on their preference for a particular shopping channel. Hence, it adds value to the existing literature by addressing these variables. Secondly, the present study provides a theoretical understanding of luxury consumption, such as jewellery, because the consumer reflects a different behaviour altogether for jewellery due to the nature of the product. This study hypothesized all such behaviour by incorporating a wide range of construct critical for jewellery consumption.

This study gives great knowledge to the managers of online and offline retail chains to effectively target the consumers for the desired outcome. This study would further motivate the managers to implement omnichannel strategies effectively for products such as jewellery and other high-involvement products by integrating the underlined variables in online and offline settings for better customer experience by integrating price and discount-related factors such as better Prices, better offers, special discounts and price comparison to the offline retail outlets as well. Also, to ensure a system is in place to check the quality under the online settings. Further, this study provides insight into data privacy and the risk involved in the online context that needs immediate attention. Jewellery sales are dominated by offline retail; however, online commerce is constantly thriving for many years; online retail sales of jewellery can also be boosted by effectively addressing those variables relevant to consumers in online settings, such as proving better offers and discounts, accurate information, and availability of wide varieties of jewellery for all purpose.

The study outlines some limitations that could be addressed in future research. For example, the study performed analysis on a small sample size that limits the scope of this study to be generalized. Hence, future studies can be performed by expanding the sample size. Additionally, the study doesn't consider demographic factors that possibly influence the choice of channels, online and offline. Further studies can be extended by considering the demographic variables. Lastly, the current study considered limited factors for the classification of consumers, so future studies can be performed by including more variables such as sustainability, ethical sourcing and corporate social responsibilities.

The study concluded that the consumers do not discriminate based on better price, special discounts and easy exchange and returns as, on these three parameters, the assessment about the online and offline channels was equal. However, factors such as better offer, relative price, price comparison, quality, varieties, relative choice, after-sale services, and information related factors such as product information, reliable information and information privacy are the significant differentiator. The study also highlights that the choice for the online channels was based upon the various factors such as, self-gratification, better offer, relative price, product information, price comparison and relative choice. Whereas, the offline channel choice was primarily based upon relative quality, reliable information, availability of a product, quality judgement and after-sale services. Finally, the study recommended for omnichannel experiences by integrating these factors to provide seamless customer experience for capitalizing the opportunities exist with both channels.

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