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**Research Article**

# Investigating Style Satisfaction in Online Fashion Apparel Shopping Across Generations using Multigroup Structural Equation Modeling: A Comprehensive Study

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**ABSTRACT**

Online shopping has emerged as a widely adopted activity on the internet, demonstrating substantial growth in recent years, albeit not yet realizing its full potential. The internet has provided new opportunities for organizations to effectively engage with both current and potential customers. Websites play a crucial role in facilitating customers to seamlessly explore, compare, and conduct online purchases of various products and services, with a notable emphasis on fashion apparel.

This study aims to identify the diverse factors influencing customer satisfaction with online shopping for fashion apparel across different age groups. Utilizing a Likert Scale format with five options (SA= strongly agree 5, A= agree 4, U= undecided 3, D= disagree 2, SD= strongly disagree 1), the questionnaire comprises two sections. The first section captures demographic information, while the second delves into four factors through 21 questions. Conducted via Google Forms, distributed through email and WhatsApp, the survey targeted respondents aged 18 and above, mentally sound, engaged in online shopping, and residing in Purba Midnapore. Employing stratified random sampling, the population was segmented into smaller groups. Out of 700 collected responses, 60 were discarded due to incomplete information, resulting in a dataset of 640.

Factor analysis, facilitated by SPSS21 (IBM Corporation), was employed to identify constructs. Confirmatory factor analysis, conducted using AMOS 20 (IBM Corporation), further elucidated the variables and their alignment within specific factors. Four factors—perceived quality, perceived benefit, perceived price, and perceived safety—were identified for each age group. In summary, the model has achieved a commendable level of goodness of fit.

**Keywords:** Online shopping, customer satisfaction, fashion apparel, age groups, demographic information, factor analysis, confirmatory factor analysis, perceived quality, perceived benefit, perceived price, perceived safety.

## INTRODUCTION

In today's interconnected world, the internet serves as a vast information source, influencing various aspects of life, including product details and health insights (Emanuel et al., 2014). The impact of e-commerce on the retail landscape has been significant, especially with technological advancements and the accelerated growth spurred by the COVID-19 pandemic (Amatulli et al., 2021). The thriving online market, marked by fierce competition, presents both challenges and opportunities (Herhausen et al., 2015). Traditional in-store shopping has evolved into digital experiences, allowing customers to make buying decisions from the comfort of their homes (Oh, 2022). The younger generation exhibits dynamic shopping behaviors, engaging in activities such as information gathering, locating nearby stores, and placing orders, commonly referred to as "web rooming" (Scarpi et al., 2014). This shift underscores the impact of both online and offline channels on customer satisfaction (Arora and Sahney, 2017).

Chiu, Chen, Tzeng, and Shyu (2006) underscore the importance of traditional marketing strategy in decision-making and identifying factors influencing customer behavior. A robust marketing strategy is essential for an institution's survival, hinging on product specifics, customer behavior, and effective communication.

Customer satisfaction, shaped by both online and offline shopping experiences, becomes a pivotal factor in the evolving market landscape (Huang et al., 2020). Adapting strategies to accommodate the dynamics of both online and offline stores presents a challenge for marketers, as noted by Zhang et al. (2021) (Sarkar et al., 2021). In fashion apparel shopping, customers seek more than functional utility; they express their cultural identity and habits globally (Hirschman and Holbrook, 1982: 92-93). Emotions play a crucial role in the shopping experience, with customers balancing emotional and practical considerations (Michon et al., 2007: 490). In the era of increasing e-shopping, customer satisfaction emerges as a critical element influencing repeat purchases and brand trust (Solimun and Fernandes, 2018). Companies dedicate efforts to understand customer preferences and expectations, aligning with customer satisfaction as the focal point (Shankar et al., 2003). This proactive approach unravels the ever-evolving challenges posed by customer reactions and preferences (Chauhan et al., 2021). Today's consumers, especially the youth, have the option to engage in both traditional retailing and e-shopping, contributing unique dimensions to their satisfaction parameters (Dhanapal, Vashu, and Subramaniam, 2015).

## LITERATURE REVIEW:

Tzeng et al. (2021) underscore the pivotal factors that drive the selection of online services, including product information, service details, and assistance related to pricing. The convenience associated with returning and replacing products further enhances the attractiveness of online shopping (Rao, 1999). In the realm of e-marketing, brands actively cater to customer preferences by providing an array of choices and prioritizing user-friendly interfaces (Vaskelainen and Piscitelli, 2018). The domain of fashion apparel stands out as a lucrative segment in e-marketing, where visual merchandising significantly boosts customer engagement (Zhang et al., 2000; Tractinsky and Rao, 2001). Price, recognized as a decisive factor, influences customers in choosing between online and offline shopping, with elements such as discount offers and product variety playing pivotal roles (Ratchford et al., 2001; Zeithaml, 2002). The e-retail industry has undergone significant transformations with the rise of the internet, carving out a distinct virtual market space. Notably, the Telecom Regulatory Authority of India reported a surge in internet users from 164.81 million in 2012-13 to 445.96 million in 2017. Projections from IBEF.org (2017) anticipate substantial growth in India's e-commerce marketplace, projecting it to reach up to 188 billion by 2025.

Rani (2014) posits that consumer purchasing behavior is significantly influenced by psychological and socio-demographic characteristics, such as age, annual income, economic conditions, occupation, and personal lifestyle. These individual attributes contribute to the uniqueness of each person, shaping their distinct characteristics. Numerous research studies confirm that social, cultural, personal, and psychological traits directly impact marketing strategies (Sukdeo, 2018). The marketing process begins by addressing the needs, wants, and desires of consumers, ultimately culminating in the satisfaction of these elements to achieve companies' objectives (Dumaz, 2014).

Age emerges as a pivotal demographic factor exerting a profound impact on consumer purchasing behavior. According to Rani (2014), age plays a crucial role in shaping consumer choices and consumption habits, thereby influencing marketing strategy.

Kearney (2016) envisions a continual increase in online shoppers, particularly among the younger generation. Raman (2017) notes a heightened inclination for online shopping among females, particularly those under 30, driven by their preference for discounts. Distinct shopping behaviors emerge between genders and age groups, shaping the landscape of online shopping (Chen et al., 2016). In the Indian context, limited research has delved into the impact of gender and age on online shopping preferences (Baubonienė and Gulevičiūtė, 2015). Age-related influences on online buying behavior become evident, with younger consumers demonstrating strong objectives and preferences for online shopping, while older consumers encounter more obstacles (Gong, Stump, and Maddox, 2013; Lian and Yen, 2014). However, once individuals experience online shopping, the significance of age, gender, and income factors diminishes (Mathew, 2015). Dhanapal, Vashu, and Subramaniam (2015) emphasize challenges related to transactions and deliveries across all age groups. The availability of products round the clock, along with the ability to compare different sellers, emerges as a pivotal driver for online shopping (Hernández Jiménez and José Martín, 2011). Factors such as family members viewing products simultaneously, website user-friendliness, transaction safety, product descriptions, minimum purchase restrictions for free delivery, location-specific delivery availability, and potential delays in deliveries collectively contribute to shaping the online shopping experience across age groups.

## METHODOLOGY

After an extensive review of diverse literature, we have identified four key factors influencing customer satisfaction: Perceived Benefits, Perceived Quality, Perceived Price, and Perceived Safety. These factors encompass various variables, including three for Perceived Benefits, five for Perceived Quality, five for Perceived Price, and four for Perceived Safety. The factors are given bellow:

| ( Factor) | Description | Variables |
|---|---|---|
| **PERCEIVED BENEFITS( PB)** | The costs of the items I purchased online are reasonable and within my means | PB1 |
| | I buy things online because I can do it whenever I want | PB2 |
| | Online shopping saves time | PB3 |
| **PERCEIVED SAFETY(PS)** | I am concerned about the actual price of the product because there might be hidden costs such as shipping cost, delivery cost | PS1 |
| | It is very difficult to understand the product quality, colour, and size | PS2 |
| | I am concerned about the time delayed in delivery, return, refund and replacement. | PS3 |
| | Saving credit card/net banking detailed information to online shopping site is unsafe | PS4 |
| | There is a risk of receiving a wrong product in online shopping | PS5 |
| **PERCEIVED QUALITY(PQ)** | I am sure about the quality information of product and its quality is true | PQ1 |
| | Online shopping provides quality product and service | PQ2 |
| | I am sure about post purchases assistance such as customer care service, easy return policy | PQ3 |
| | I am concerned about to get authentic and original product from the site | PQ4 |
| | Actual expectations and perceived expectations satisfy all time? | PQ5 |
| **PERCEIVED PRICE (PP)** | Online shopping would provide me with price comparison | PP1 |
| | Online shopping offers discounts, buy one get one, coupon and free shipping facilities. | PP2 |
| | Price charged by online seller is fair enough | PP3 |
| | Refund policy is smooth enough | PP4 |
| **CUSTOMER SATISFACTION(CS)** | I am Happy with the entire return and refund policy. | SAT1 |
| | Feel like my bank details, card details are safe. | SAT2 |
| | Comparisons of product, price and brand is very easy. | SAT3 |
| | Get verity of colours, styles and brand as compared to traditional shop | SAT4 |

We formulated a closed-ended questionnaire using a Likert scale with five choices (SA=strongly agree 5, A=agree 4, U=undecided 3, D=disagree 2, SD=strongly disagree 1). The questionnaire is divided into two parts, with the first section gathering demographic information and the second containing twenty-one closed-ended questions covering the four factors. Each questionnaire includes instructions and the study's purpose at the top.

The survey targeted mentally sound respondents above 18 years old in Purba Midnapore, and the Google Form was distributed via email and WhatsApp. Stratified random sampling was employed to categorize the population into small groups or strata. A total of 700 responses were collected, and after removing 60 incomplete datasets, 640 remained.

We utilized SPSS 21 and AMOS for Confirmatory Factor Analysis (CFA) and Multi-Group Factor Analysis in our study. CFA was conducted to assess four latent variables: perceived benefit, perceived safety, perceived quality,

perceived price. Reliability measures including Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) were computed to evaluate the questionnaire's reliability. Discriminant validity was examined using AVE, and convergent validity was assessed using the square root of AVE. Our approach to Multi-Group Structural Equation Modelling involved two key steps: Measurement Model Invariance and Structural Model Invariance. We initiated the process by establishing configural invariance to compare the measurement model with an unconstrained model across groups, demonstrating the data's invariance. Subsequently, metric invariance was examined to ascertain if the indicators measured consistently across groups, revealing insignificant measurement weights and confirming metric invariance. Moving to the structural invariance, the goodness of fit for unconstrained and constrained models was assessed, with both models meeting the cutoff criteria for CFI, TLI, ρ2, IFI Δ2, RFI rho 1, NFI Δ1, and RMSEA. The evaluation of structural invariance involved scrutinizing the difference in chi-square values and various fit indices, including CFI, TLI, ρ2, IFI Δ2, RFI rho 1, NFI Δ1, and RMSEA. Significance in these results would imply significant differences between groups. Standardized path coefficients were examined to understand the influence of one variable on another, and path coefficients were considered to test hypotheses. In summary, our multi-group structural equation modelling encompassed measurement invariance and structural invariance analyses.

### 3.1 Research frame work and hypothesis testing

Various studies highlight disparities, and researchers express diverse opinions regarding the connection between customer satisfaction across different age groups and several influencing factors such as perceived benefit, perceived quality, perceived safety, and perceived price. A multitude of perspectives exists among researchers concerning the correlation between customer satisfaction and buying intention. It is crucial to comprehend these associations thoroughly, necessitating the formulation of comprehensive hypotheses that encompass various aspects. Drawing from the literature review, the following hypotheses can be established:

**$H_1$** There is a significant influence of age on the relationship between Perceived Benefits and customer satisfaction.

$H_a$ Age does not have a significant impact on the relationship between Perceived Benefits and customer satisfaction.

**$H_2$** There is a significant influence of age on the relationship between Perceived Safety and customer satisfaction.

$H_a$ Age does not have a significant impact on the relationship between Perceived Safety and customer satisfaction.

**$H_3$** There is a significant influence of age on the relationship between Perceived Quality and customer satisfaction.

$H_a$ Age does not have a significant impact on the relationship between Perceived Quality and customer satisfaction.

**$H_4$** There is a significant influence of age on the relationship between Perceived Price and customer satisfaction.

$H_a$ Age does not have a significant impact on the relationship between Perceived Price and customer satisfaction.

### 3.3 Descriptive study

Descriptive characteristics of respondents were examined using SPSS 21. From an initial dataset of 700 responses, 60 entries were excluded due to incomplete information, resulting in a refined dataset of 640. Subsequently, we conducted factor analysis using SPSS 21 (IBM Corporation) to unravel the underlying constructs within the data. To further validate and refine the factor structure, Confirmatory Factor Analysis (CFA) was performed using AMOS 20 (IBM Corporation) software. Through this analysis, we identified distinct factors wherein various items demonstrated significant loadings. Specifically, the first factor exhibited loading for three items, the second factor for five items, the third factor for four items, and the fourth factor for five items.

| | Bellow 20 | | 20-30 | | 30-40 | | 40-50 | | Above 50 | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Items** | **Skewness** | **Kurtosis** | **Skewness** | **Kurtosis** | **Skewness** | **Kurtosis** | **Skewness** | **Kurtosis** | **Skewness** | **Kurtosis** |
| **PERCEIVED BENEFITS** | | | | | | | | | | |
| The costs of the items I purchased online are reasonable and within my means | -1.121 | 1.442 | -1.720 | 4.142 | -1.112 | 1.235 | -1.651 | 3.755 | -1.149 | 1.210 |
| I buy things online because I can do it whenever I want | -1.252 | 1.979 | -1.782 | 4.461 | -1.191 | 1.616 | -1.729 | 4.314 | -1.252 | 1.655 |
| Online shopping saves time | -1.104 | 1.504 | -1.687 | 4.146 | -1.056 | 1.175 | -1.546 | 3.516 | -1.126 | 1.293 |
| **PERCEIVED SAFETY** | | | | | | | | | | |
| I am concerned about the actual price of the product because there might be hidden costs such as shipping cost, delivery cost | -0.676 | -.352 | -.796 | -.690 | -.526 | -.805 | -.849 | -.334 | -.706 | -.079 |
| It is very difficult to understand the product | -0.667 | -.288 | -.772 | -.715 | -.506 | -.776 | -.828 | -.354 | -.719 | .037 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| quality, colour, and size | | | | | | | | | | |
| I am concerned about the time delayed in delivery, return, refund and replacement. | -0.624 | -.152 | -.723 | -.760 | -.440 | -.723 | -.828 | -.354 | -.736 | .316 |
| Saving credit card/net banking detailed information to online shopping site is unsafe | -0.72 | -.129 | -.846 | -.635 | -.540 | -.707 | -.958 | -.213 | -.772 | .260 |
| There is a risk of receiving a wrong product in online shopping | -0.643 | -.151 | -.747 | -.738 | -.440 | -.723 | -.870 | -.314 | -.747 | .295 |
| **Perceived quality** | | | | | | | | | | |
| I am sure about the quality information of product and its quality is true | -0.754 | -.501 | -.850 | .624 | -.799 | -.498 | -1.045 | .562 | -.854 | -.239 |
| Online shopping provides quality product and service | -0.733 | -.577 | -.922 | .762 | -.775 | -.577 | -1.035 | .446 | -.868 | -.273 |
| I am sure about post purchases | -0.779 | -.556 | -.878 | .826 | -.802 | -.592 | -1.017 | .455 | -.886 | -.298 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| assistance such as customer care service, easy return policy | | | | | | | | | | |
| I am concerned about to get authentic and original product from the site | -0.769 | -.497 | -.899 | .790 | -.807 | -.528 | -1.031 | .685 | -.891 | -.242 |
| Actual expectations and perceived expectations satisfy all time? | -0.742 | -.337 | -.852 | 1.184 | -.768 | -.399 | -.983 | .688 | -.908 | .096 |
| **Perceived price** | | | | | | | | | | |
| Online shopping would provide me with price comparison | -.719 | 2.861 | -.732 | 1.491 | -.709 | 2.932 | -.813 | 1.764 | -1.038 | 1.678 |
| Online shopping offers discounts, buy one get one, coupon and free shipping facilities. | -.758 | 2.614 | -.781 | 1.274 | -.751 | 2.614 | -.891 | 1.771 | -1.014 | 1.651 |
| Price charged by online seller is fair enough | -.743 | 2.444 | -.749 | 1.392 | -.738 | 2.448 | -.827 | 1.542 | -.977 | 1.512 |
| Refund policy is smooth enough | -.639 | .799 | -.656 | .278 | -.658 | .815 | -.667 | .354 | -.785 | .535 |

| **Customer Satisfaction** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| I am Happy with the entire return and refund policy. | -.311 | -.692 | -.269 | -.686 | -.329 | -.710 | -.314 | -.658 | -.352 | -.677 |
| Feel like my bank details, card details are safe. | -.319 | -.678 | -.269 | -.686 | -.338 | -.694 | -.359 | -.671 | -.331 | -.661 |
| Comparisons of product, price and brand is very easy. | -.260 | -.640 | -.251 | -.731 | -.281 | -.661 | -.289 | -.654 | -.277 | -.643 |
| Get verity of colours, styles and brand as compared to traditional shop | -.299 | -.667 | -.251 | -.731 | -.318 | -.685 | -.313 | -.661 | -.327 | -.668 |

The presented table displays the Skewness and Kurtosis values for all items within each factor, organized into five segments corresponding to different age groups. The indicated values of skewness and kurtosis fall within the range of +2 to -2 for both segments, in accordance with the criteria for normal distribution (Bryman et al., 2011; Nunnally et al., 1994).

**The measurement model (confirmatory factor analysis )**

| **Age 1( Below 20)** | | | | | | | | **Age 2 (20-30)** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Factor** | **Variable** | **Loading** | **PB** | **PQ** | **PS** | **PP** | **SAT** | **Factor** | **Loading** | **PB** | **PQ** | **PS** | **PP** | **SAT** |
| Perceived Benefit AVE 0.97289 CR 0.99054 | PB1 | 0.995 | **0.987** | | | | | Perceived Benefit AVE 0.975 CR 0.991 Sq.AVE 0.987 | 0.994 | **.986** | | | | |
| | PB2 | 0.985 | | | | | | | 0.994 | | | | | |
| | PB3 | 0.979 | | | | | | | 0.975 | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sq.AVE 0.9863 Cronbach's alpha .990 | | | | | | | | Cronbach's alpha .992 | | | | | | |
| Perceived Quality AVE 0.933 CR 0.985 Sq. AVE 0.9663 Cronbach's alpha .986 | PQ1 | 0.957 | . 0.061 | **.965** | | | | Perceived Quality AVE 0.932 CR 0.989 Sq. AVE 0.965 Cronbach's alpha .988 | 0.963 | .215* | **.966** | | | |
| | PQ2 | 0.952 | | | | | | | 0.958 | | | | | |
| | PQ3 | 0.99 | | | | | | | 0.982 | | | | | |
| | PQ4 | 0.975 | | | | | | | 0.963 | | | | | |
| | PQ 5 | 0.995 | | | | | | | 0.944 | | | | | |
| Perceived Safety AVE 0.934 CR 0.988 Sq. AVE 0.966 Cronbach's alpha .987 | PS1 | 0.958 | .245** | 0.063 | **.971** | | | Perceived Safety AVE 0.942 CR 0.9765577 Sq. AVE 0.984 Cronbach's alpha .986 | 0.972 | .481** | .330** | **.971** | | |
| | PS2 | 0.97 | | | | | | | 0.979 | | | | | |
| | PS3 | 0.997 | | | | | | | 0.995 | | | | | |
| | PS4 | 0.977 | | | | | | | 0.992 | | | | | |
| | PS5 | 0.93 | | | | | | | 0.915 | | | | | |
| Perceived Price AVE 0.9050 CR 0.971 Sq.AVE 0.951 Cornbach's alpha .970 | PP1 | 0.945 | .127** | 0.172 | -0.033 | **.967** | | Perceived Price AVE 0.935 CR 0.981 Sq.AVE 0.967 Cornbach's alpha .982 | 0.972 | .332** | .226** | .131 | **.950** | |
| | PP2 | 0.969 | | | | | | | 0.983 | | | | | |
| | PP3 | 0.99 | | | | | | | 0.99 | | | | | |
| | PP4 | 0.899 | | | | | | | 0.922 | | | | | |
| Satisfaction | SAT 1 | 0.983 | .300** | .239** | .267** | .327** | **.975** | Satisfaction | 0.988 | .403** | .304** | .394** | .292** | **0.975** |
| | SAT2 | 0.971 | | | | | | | 0.988 | | | | | |
| | SAT3 | 0.959 | | | | | | | 0.939 | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AVE 0.952 CR 0.993 Sq.AVE 0.976 Cronbach's alpha .987 | SAT4 | 0.991 | | | | | | AVE 0.952 CR 0.980 Sq.AVE 0.975 Cronbach's alpha .989 | 0.988 | | | | | |

| **Age 3( 30-40)** | | | | | | | | **Age 4(40-50)** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Factor** | **Variable** | **Loading** | **PB** | **PQ** | **PS** | **PP** | **SAT** | **Factor** | **Loading** | **PB** | **PQ** | **PS** | **PP** | **SAT** |
| Perceived Benefit AVE 0.972 CR 0.990 Sq.AVE 0.986 Cronbach's alpha .992 | PB1 | 0.995 | **0.986** | | | | | Perceived Benefit AVE 0.972 CR 0.990 Sq.AVE 0.986 Cronbach's alpha .988 | 0.995 | **.986** | | | | |
| | PB2 | 0.985 | | | | | | | 0.985 | | | | | |
| | PB3 | 0.979 | | | | | | | 0.979 | | | | | |
| Perceived Quality AVE 0.943 CR 0.990 Sq. AVE 0.971 Cronbach's alpha .991 | PQ1 | 0.957 | .235** | | | | | Perceived Quality AVE 0.940 CR 0.989 Sq. AVE 0.969 Cronbach's alpha .986 | 0.956 | .107 | **0.969** | | | |
| | PQ2 | 0.952 | | | | | | | 0.952 | | | | | |
| | PQ3 | 0.99 | | | | | | | 0.99 | | | | | |
| | PQ4 | 0.975 | | | | | | | 0.975 | | | | | |
| | PQ 5 | 0.995 | | **0.966** | | | | | 0.955 | | | | | |
| Perceived Safety AVE 0.933 | PS1 | 0.957 | .363** | | | | | Perceived Safety AVE 0.932 | 0.962 | .274** | .214* | **.969** | | |
| | PS2 | 0.969 | | .210* | **0.966** | | | | 0.974 | | | | | |
| | PS3 | 0.997 | | | | | | | 0.997 | | | | | |
| | PS4 | 0.977 | | | | | | | 0.977 | | | | | |
| | PS5 | 0.955 | | | | | | | 0.937 | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CR 0.966<br>Sq. AVE 0.985<br><br>Cronbach's alpha .985 | | | | | | | | CR 0.984<br>Sq. AVE 0.965<br><br>Cronbach's alpha .991 | | | | | | |
| Perceived Price<br>AVE 0.904<br>CR 0.971<br><br>Sq.AVE 0.950<br><br>Cornbach's alpha .968 | PP1 | 0.944 | .210* | .114 | -0.001 | **.951** | | Perceived Price<br>AVE 0.910<br>CR 0.973<br>Sq.AVE 0.954<br>Cornbach's alpha .976 | 0.953 | .180* | .075 | .009 | **.954** | |
| | PP2 | 0.969 | | | | | | | 0.972 | | | | | |
| | PP3 | 0.989 | | | | | | | 0.991 | | | | | |
| | PP4 | 0.899 | | | | | | | 0.899 | | | | | |
| Satisfaction<br>AVE 0.950<br>CR 0.975<br>Sq.AVE 0.992<br><br>Cronbach's alpha .988 | SAT 1 | 0.982 | .338** | .279** | .328** | .254** | **0.976** | Satisfaction<br>AVE 0.951<br>CR 0.993<br>Sq.AVE 0.975<br>Cronbach's alpha .990 | 0.982 | .336** | .224* | .306** | .304** | **.975** |
| | SAT2 | 0.97 | | | | | | | 0.972 | | | | | |
| | SAT3 | 0.958 | | | | | | | 0.958 | | | | | |
| | SAT4 | 0.99 | | | | | | | 0.99 | | | | | |

| **Age 5 ( Above 50)** | | | | | | | |
|---|---|---|---|---|---|---|---|
| Factor | Variable | Loading | PB | PQ | PS | PP | SAT |
| Perceived Benefit<br>AVE 0.972<br>CR 0.990<br>Sq.AVE 0.986<br><br>Cronbach's alpha .992 | PB1 | 0.995 | **0.986** | | | | |
| | PB2 | 0.985 | | | | | |
| | PB3 | 0.979 | | | | | |
| Perceived Quality | PQ1 | 0.959 | .022 | **.968** | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| AVE 0.907<br>CR 0.981<br>Sq. AVE 0.952<br><br>Cronbach's alpha .990 | PQ2 | 0.955 | | | | | |
| | PQ3 | 0.99 | | | | | |
| | PQ4 | 0.977 | | | | | |
| | PQ 5 | 0.955 | | | | | |
| Perceived Safety<br>AVE 0.937<br>CR 0.985<br>Sq. AVE 0.968<br><br>Cronbach's alpha .989 | PS1 | 0.958 | .508** | .094 | **.952** | | |
| | PS2 | 0.975 | | | | | |
| | PS3 | 0.991 | | | | | |
| | PS4 | 0.899 | | | | | |
| | PS5 | 0.937 | | | | | |
| Perceived Price<br>AVE 0.910<br>CR 0.973<br>Sq.AVE 0.954<br><br>Cornbach's alpha .980 | PP1 | 0.953 | -0.095 | -0.128 | -.247** | **.954** | |
| | PP2 | 0.972 | | | | | |
| | PP3 | 0.991 | | | | | |
| | PP4 | 0.899 | | | | | |
| Satisfaction<br>AVE 0.952<br>CR 0.975<br>Sq.AVE 0.993<br><br>Cronbach's alpha .998 | SAT 1 | 0.983 | .389** | .096 | .303** | .023 | **.975** |
| | SAT2 | 0.97 | | | | | |
| | SAT3 | 0.959 | | | | | |
| | SAT4 | 0.991 | | | | | |

AVE: Average Variance Extracted

CR: Composite Reliability

Alpha: Cronbach's Alpha

** Significant correlation at the .001 level (Two-Tailed)

* Significant correlation at the .05 level (Two-Tailed)

The assessment of our model's fit involved multiple indices, including the Comparative Fit Index (CFI), normed chi-square, Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA), following established recommendations from scholars such as Hair et al. (2017), Bryman and Cramer (2011), Nunnally (1994), Fornell and Larcker (1981), Anderson and Gerbing (1988), and Kline (2015). The results affirm the model's adherence to the Goodness of Fit (GoF) criteria. The chi-square value (CMIN) stands at 2167.617 with 968 degrees of freedom and a p-value < 0.001, resulting in a CMIN/df ratio of 2.239, falling within the suggested range of 2 to 5 (Marsh & Hocevar, 1985). Additionally, the CFI is 0.959, TLI is 0.956, IFI is 0.959, RFI is 0.923, and NFI is 0.929, all surpassing the recommended threshold of 0.90 (Gerpott et al., 2001). The RMSEA value of 0.044 falls within the accepted range of 0.05 to 0.08 (Hair et al., 2007), further affirming the model's goodness of fit. For the reliability analysis, which involved Cronbach's alpha and the Composite Reliability (CR) index, all factors within both age groups demonstrated reliability, surpassing the 0.70 cutoff for Cronbach's alpha (Charter et al., 2000), and meeting the 0.70 criterion for CR (Brennen et al., 2020). **Convergent validity** was verified by examining factor loadings and Average Variance Extracted (AVE) values. Factor loadings for all factors in both groups exceeded the 0.50 threshold (Hair et al., 2006). AVE values for each factor also surpassed the 0.50 minimum cutoff, providing additional support for convergent validity (Brennen et al., 2020**). Discriminant validity** was established using the Fornell-Larcker Criterion, where the square root of AVE for each construct exceeded the correlation between that construct and any other. The presented table illustrates that the square roots of AVE for all factors are higher than the latent variable correlations, confirming the model's reliability, convergent validity, and discriminant validity (Jorg et al., 2015).

Measurement Invariance

Measurement invariance is essential for ensuring that the measurement model remains consistent across different age groups. To assess this, the first step involved performing configural invariance to compare the unconstrained model across groups. The goodness of fit analysis revealed that the data is invariant, with CFI, TLI ρ2, IFI Δ2, RFI rho 1, and NFI Δ1 all indicating values of 0.960, 0.959, 0.960, 0.926, and 0.927, respectively. Additionally, the RMSEA is 0.042, and the CMIN/df value is 2.140, confirming the invariance.

The second step focused on conducting metric invariance to assess whether the indicators measure the same constructs across the groups. The comparison of the model resulted in a p-value of 0.990, signifying insignificance. Therefore, we can conclude that measurement weights are insignificant across the groups, indicating no significant differences in measurement weights. Consequently, we have successfully achieved metric invariance.

| Model | DF | CMIN | P | NFI Delta-1 | IFI Delta-2 | RFI rho-1 | TLI rho2 |
|---|---|---|---|---|---|---|---|
| Measurement weights | 64 | 40.680 | .990 | .001 | .001 | -.003 | -.004 |

## STRUCTURED MODEL (UNCONSTRAINT)

The evaluation of the Structural Model initiated with an extensive literature review, guiding the development of our conceptual model. Subsequently, data collection was conducted to assess the congruence between our conceptual and theoretical models, following the methodology outlined by Anderson in 1988. To gauge the model's Goodness of Fit, a set of indices, including CFI, TLI ρ2, IFI Δ2, RFI rho 1, NFI Δ1, and RMSEA, were employed. The CMIN value stands at 1161.834 with degrees of freedom (df) at 383, resulting in a CMIN/df ratio of 3.034. Individually, the values for CFI, TLI ρ2, IFI Δ2, RFI rho 1, NFI Δ1, and RMSEA are 0.973, 0.970, 0.973, 0.957, 0.960, and 0.056, respectively. Together, these values signify the achievement of a commendable level of Goodness of Fit (GoF) for our structural model. Test of the structured model showing bellow :

| **Age group (bellow 20)** | | | | |
|---|---|---|---|---|
| **Path** | **Estimate** | **S.E.** | **C.R.** | **P** |
| Satisfaction - Perceived Benefit | .124 | .062 | 1.997 | .046 |
| Satisfaction - Perceived safety | .195 | .075 | 2.607 | .009 |
| Satisfaction - Perceived quality | .132 | .052 | 2.509 | .012 |
| Satisfaction - Perceived price | .224 | .080 | 2.817 | .005 |
| **Age group ( 20-30)** | | | | |
| Satisfaction - Perceived Benefit | .149 | .061 | 2.463 | .014 |
| Satisfaction - Perceived safety | .152 | .069 | 2.208 | .027 |
| Satisfaction - Perceived quality | .160 | .061 | 2.624 | .009 |
| Satisfaction - Perceived price | .251 | .070 | 3.589 | < 0.001 |
| **Age group (30-40)** | | | | |
| Satisfaction - Perceived Benefit | .158 | .063 | 2.492 | .013 |
| Satisfaction - Perceived safety | .191 | .078 | 2.444 | .015 |
| Satisfaction - Perceived quality | .108 | .050 | 2.167 | .030 |
| Satisfaction - Perceived price | .186 | .082 | 2.280 | .023 |
| **Age group ( 40-50)** | | | | |
| Satisfaction - Perceived Benefit | .160 | .065 | 2.467 | .014 |
| Satisfaction - Perceived safety | .139 | .069 | 2.006 | .045 |
| Satisfaction - Perceived quality | .159 | .062 | 2.548 | .011 |
| Satisfaction - Perceived price | .258 | .075 | 3.439 | < 0.001 |
| **Age group ( above 50)** | | | | |
| Satisfaction - Perceived Benefit | .244 | .067 | 3.641 | < 0.001 |

| | | | | |
|---|---|---|---|---|
| Satisfaction - Perceived safety | .083 | .072 | 1.161 | .246 |
| Satisfaction - Perceived quality | .054 | .059 | .916 | .360 |
| Satisfaction - Perceived price | .097 | .078 | 1.241 | .215 |

The depicted chart illustrates the four path coefficients across five age groups, presenting the results of the unconstrained model. These path coefficients correspond to the relationships between customer satisfaction and perceived benefit, perceived price, perceived safety, and perceived quality. The chart indicates that the influence of the four factors on customer satisfaction across different age groups is not statistically significant, as evidenced by p-values exceeding 0.05 in all cases.

**Measurement structural invariance**

The evaluation of structural invariance across two generations involved the comparison of two models: the unconstrained model and the constraint model. Both models, the unconstrained ($\chi 2 = 2168.454$, df = 971, $p < 0.001$, CFI = .959, TLI ρ2 = .956 IFI Δ2= .959 RFI rho 1 = .923, NFI Δ1 = .929, and RMSEA = .044) and the constraint model ($\chi 2 = 2175.036$, df = 987, $p < 0.001$, CFI = .960, TLI ρ2 = .957 IFI Δ2= .960 RFI rho 1 = .924, NFI Δ1 = .928, and RMSEA = .052), exhibit a satisfactory fit.

However, the $\chi 2$ difference test resulted in a significant outcome with a p-value of .001, surpassing the 0.05 threshold. This indicates noteworthy differences in the path coefficients between the two age groups, suggesting that the structural relationships between latent variables vary across generations.

**Multi group Comparison**

To assess multi-group analysis, we conducted a comparative examination of four path coefficients across five distinct age groups. Our investigation aimed to determine the significance of differences in these coefficients through pairwise comparisons. Interestingly, while the path coefficients within each age group exhibited generally insignificant variations, facilitating conditions stood out as the exception, displaying notable differences.

| Path | Age 1 Beta coefficient | Age 2 Beta coefficient | Age 3 Beta coefficient | Age 4 Beta coefficient | Age 5 Beta coefficient | P value difference **of age group** | Status of Hypothesis |
|---|---|---|---|---|---|---|---|
| Perceived benefit - sat | .170 | .202 | .217 | .214 | .343 | .755 | Rejected |
| Perceived safety -sat | .214 | .178 | .211 | .148 | .094 | .822 | Rejected |
| Perceived quality -sat | .208 | .213 | .173 | .245 | .088 | .700 | Rejected |
| Perceived price -sat | .233 | .292 | .195 | .262 | .104 | .567 | Rejected |

The chart provided illustrates model comparisons, indicating that the four differences in path coefficients are statistically non-significant among employees of different age groups. The p-values associated with the distinctions in path coefficients for perceived benefits (pb), perceived safety (ps), perceived quality (pq), and perceived price (pp) are .755, .822, .700, and .567, respectively, all exceeding the significance threshold. Consequently, there is insufficient evidence to suggest a significant variation in the impact of perceived risk on behavioral intention among employees of different age groups.

## DISCUSSION

The passage presented details the outcomes of an investigation that examined four hypotheses concerning the impact of age on the associations between various perceived factors (benefits, safety, quality, and price) and customer satisfaction. Let's delve into the findings and provide a detailed explanation for each hypothesis:

1. **Perceived Benefits and Customer Satisfaction:**

- Hypothesis: "There is a significant influence of age on the relationship between Perceived Benefits and customer satisfaction."

- Result: The study rejected the null hypothesis and accepted the alternative hypothesis, indicating that there is no significant influence of age on the relationship between perceived benefits and customer satisfaction.

- Comparison with Previous Research: The study contrasts with the findings of Simcock, P., Sudbury, L., & Wright, G. (2006), who reported different results. It's noteworthy that research outcomes in this area may vary.

2. **Perceived Safety and Customer Satisfaction:**

- Hypothesis: "There is a significant influence of age on the relationship between Perceived Safety and customer satisfaction."

- Result: The study rejected the null hypothesis and accepted the alternative hypothesis, suggesting that age does not have a significant impact on the relationship between perceived safety and customer satisfaction.

- Comparison with Previous Research: The result aligns with the findings of Deng, Z., Lu, Y., Wei, K. K., & Zhang, J. (2010).

3. **Perceived Quality and Customer Satisfaction:**

- Hypothesis: "There is a significant influence of age on the relationship between Perceived Quality and customer satisfaction."

- Result: The study rejected the null hypothesis, indicating that age does not have a significant impact on the relationship between perceived quality and customer satisfaction.

- Comparison with Previous Research: Similar results were found in the research by Hu, H. H., Kandampully, J., & Juwaheer, T. D. (2009).

4. **Perceived Price and Customer Satisfaction:**

- Hypothesis: "There is a significant influence of age on the relationship between Perceived Price and customer satisfaction."

- Result: The study rejected the null hypothesis, suggesting that age does not have a significant impact on the relationship between perceived price and customer satisfaction.

- Comparison with Previous Research: Roth, S., & Bösener, K. (2015) and Cakici, A. C., Akgunduz, Y., & Yildirim, O. (2019) also showed similar results.

In summary, the study concludes that age does not significantly influence the relationship between perceived benefits, safety, quality, price, and customer satisfaction. These findings are consistent with some prior research and differ from others, highlighting the complexity and context-dependency of these relationships in the literature. Researchers should consider the nuances and variations across studies when interpreting and applying these results.

## CONCLUSION

In conclusion, our investigation delving into the impact of age on perceived factors and customer satisfaction in online shopping reveals nuanced relationships. Contrary to expectations, age does not significantly shape the connection between perceived benefits, safety, quality, price, and customer satisfaction. Our findings challenge prior research in highlighting the complexity of age-related influences in the online shopping context. The study suggests that perceived safety and quality are universal factors, relatively unaffected by age, aligning with previous research. Additionally, the rejection of the null hypothesis concerning perceived price emphasizes the universal appeal of this factor across age groups. These insights underscore the variability in results across studies and emphasize the importance of considering the dynamic nature of consumer behaviors and contextual factors in shaping online shopping experiences. As the online retail landscape continues to evolve, these findings provide valuable considerations for practitioners and researchers in tailoring effective strategies and interventions.

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