Factors influencing the adoption of online community group buying among Z generation in Shanghai, China

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Abstract

With the rapid growth of internet infrastructure, China's e-commerce sector has flourished, giving rise to online group buying (OGB). Accelerated by the COVID-19 pandemic, OGB has become popular for its affordability, product variety, and interactive shopping experience. Despite these advantages, challenges such as complex interfaces, information overload, and security concerns hinder wider adoption. This study aims to examine the influence of perceived usefulness, perceived ease of use, and perceived security on the acceptance of online group buying among Generation Z consumers in Shanghai. Based on 390 valid survey responses analyzed using structural equation modeling, the results show that all three factors significantly impact OGB acceptance, with perceived usefulness exerting the strongest influence. The findings highlight the importance of developing secure, user-friendly, and functional platforms to attract Gen Z users. This study offers practical insights for platform developers and contributes to understanding digital consumer behavior in China's evolving e-commerce landscape, aligning with sustainable consumption, digital innovation, and inclusive economic growth.

Keywords: Online group buying adoption, Perceived ease of use, Perceived security, Perceived usefulness.

1. Introduction

Online Group Buying (OGB) originated in the United States, beginning with group discount coupons and gaining global momentum with the launch of Groupon in 2008 [1]. Although Groupon initially led the OGB market, its rapid rise was followed by a sharp stock decline in 2011 due to increasing competition [2]. Nonetheless, the market continued to expand, reaching a value of $1.51 billion in 2010 and attracting major players such as Amazon and Alibaba. These developments signaled the growing integration of OGB into mainstream e-commerce, driven by advances in digital infrastructure and online business models [3]. According to Verified Market Report (VMR) [4], the global online group buying market was valued at USD 3.5 billion in 2024 and is projected to reach USD 6.8 billion by 2033, growing at a CAGR of 8.2% from 2026 to 2033. In China, community group buying has become a vital part of the digital economy, particularly in the grocery sector [5]. With a market potential exceeding RMB 11 trillion, its growth has been fueled by widespread internet access and the adoption of mobile payment technologies [3].

Following industry consolidation in 2013, platforms such as Meituan-Dianping emerged as market leaders, contributing to the development of small and microenterprises in sectors including fresh food, dining, and tourism [6]. By 2022, the community group buying industry was valued at over ¥300 billion [7]. The COVID-19 pandemic significantly accelerated the shift toward digital consumption, with consumers increasingly relying on online platforms for food and daily necessities. In 2024, global e-commerce sales rose by 20.3%, contributing to a $4.3 trillion retail market [8, 9]. In China, the number of OGB users increased from 95 million in 2016 to 626 million in 2022, with projections reaching 678 million by 2023 [10]. This growth reflects a broader shift toward inclusive digital innovation, particularly in second- and lower-tier cities, facilitated by improved digital infrastructure and evolving consumer behavior in the Internet 3.0 era [11].

Despite this progress, the adoption of OGB platforms among Generation Z, individuals born between the mid-1990s and early 2010s, remains uneven [12]. One major barrier is the lack of user-friendly interfaces. A Digital Trends Survey [13] revealed that while 68% of Gen Z users prioritize ease of use, only 42% find current platforms satisfactory in this regard, often leading to frustration and disengagement [14]. In addition, Gen Z users place a high value on relevance and quality. According to THRIVE My Way [15], 66% of them seek personalized, high-value products and services, yet nearly 60% express dissatisfaction with current offerings on group-buying platforms due to poor alignment with their preferences [16].

Security concerns also pose a significant challenge. While 80% of Gen Z users consider data protection a priority, only 55% believe that existing platforms are secure [17]. Many users cite concerns about scams, data breaches, and unsafe payment processes [18]. A 2020 survey on mobile payments in China found that 79% of users were concerned about risks such as scanning fraudulent QR codes or making incorrect transfers [19]. Addressing these challenges is essential for enhancing digital inclusivity, fostering innovation in online retail platforms, and supporting the broader ecosystem of small-scale digital enterprises. Therefore, this study aims to (1) examine the impact of perceived ease of use on the adoption of online group buying among Generation Z in Shanghai, (2) investigate the role of perceived usefulness in influencing their adoption behavior, and (3) explore the effect of perceived security on their willingness to engage with OGB platforms.

2. Literature Review

2.1. Online Group Buying Adoption

Online Group Buying (OGB) has been widely recognized in the literature as a unique e-commerce model that facilitates collective purchasing by enabling individuals with similar interests to form temporary groups in order to access discounted products or services [20]. Typically, a transaction is completed when a minimum number of participants is reached, thereby ensuring mutual cost savings [21]. This model differs from traditional online shopping by leveraging group dynamics and digital platforms to enhance consumer bargaining power and yield more favorable prices [22]. Its scalability and ability to span various sectors have contributed to its growing adoption in global markets. Multiple studies have emphasized the mutual benefits of OGB for consumers and sellers. Buyers enjoy lower prices and social interaction, while sellers benefit from increased transaction volumes, faster inventory turnover, and market expansion through customer acquisition [23, 24]. Additionally, customer satisfaction and loyalty are reinforced through positive word-of-mouth and peer recommendations [25].

In China, community group buying has become a dominant form of OGB, combining online purchasing with offline distribution networks [26]. In this context, community leaders facilitate the buying process via platforms like WeChat, acting as intermediaries who manage orders and logistics while receiving performance-based incentives [3, 10]. This approach fosters trust, enhances convenience, and embeds e-commerce within social structures. The adoption of OGB has been found to be influenced by a variety of consumer-related factors, including age, income, education, occupation, and lifestyle [27]. Younger, digitally literate consumers with higher purchasing power are more inclined to engage in OGB, demonstrating openness to emerging digital commerce formats [20]. Although gender preferences may vary, both male and female users generally maintain a positive outlook on group purchasing [28]. These demographic insights provide valuable guidance for businesses seeking to tailor their marketing strategies and optimize platform interfaces to drive adoption [29].

Among consumer groups, Generation Z has emerged as a key driver of OGB adoption. Known for their high digital fluency and trend sensitivity, Gen Z consumers in China contributed over 4.94 trillion yuan to national consumption, accounting for more than 11% of total spending [30]. Their familiarity with digital tools, such as installment-based payment methods like Huabei, further facilitates their engagement with OGB platforms [31]. Studies have shown that factors such as price sensitivity, social interaction, and convenience make OGB particularly attractive to this cohort [32]. Urban regions such as Shanghai represent ideal environments for OGB expansion due to their advanced digital

infrastructure and high concentration of tech-savvy consumers [33]. With over 3 million Gen Z residents and a digital economy contributing more than half of the city's GDP, Shanghai exemplifies the convergence of technological readiness and consumer demand that supports OGB growth [34].

Finally, several factors have been consistently identified as key drivers of OGB adoption. These include perceived economic benefits, social connectivity through digital platforms, convenience of mobile transactions, and the diversity of available products [3, 27, 28]. Beyond cost savings, the literature emphasizes the importance of user trust, platform usability, and social influence in shaping adoption decisions. A seamless and trustworthy platform experience is essential for fostering long-term loyalty and engagement.

2.2. Perceived Ease of Use

Perceived Ease of Use (PEOU) refers to the degree to which an individual believes that using a particular system would be free of effort [35]. It is a core element of the Technology Acceptance Model (TAM) and has consistently been shown to influence technology adoption behavior. In the context of online group buying (OGB), especially among Generation Z users, perceived ease of use (PEOU) plays a crucial role in driving adoption by enhancing user satisfaction and lowering cognitive barriers [36]. Several studies support the notion that perceived ease of use significantly predicts OGB adoption. For example, Lim [28] and Zhang et al. [3] emphasized that intuitive interfaces, simplified ordering steps, and streamlined payment processes positively influence user engagement and trust in OGB platforms. Luna Sanchez [37] found that platforms with easy-to-use mobile interfaces and quick checkout processes reported 22% higher repeat purchase rates compared to more complex platforms.

A survey by Wilson et al. [38] found that 71.3% of users on community group buying platforms cited "easy-to-use apps and ordering processes" as a primary reason for continued participation. Among Generation Z, over 85% stated that they are more likely to adopt digital platforms that offer clear navigation, fast payment options, and app stability [31]. Platforms like Pinduoduo and Meituan Youxuan have capitalized on this, incorporating features like one-click group joining and integration with WeChat Pay, enabling users to complete purchases within 30 seconds Yuying et al. [39]. Song et al. [40] highlighted that PEOU enhances social participation in group buying by reducing perceived risk and increasing confidence in the system. In their study, platforms perceived as easier to use showed a 31% higher group formation rate compared to those with more complex operations. Similarly, Lu and Ahn [24] found that users who rated OGB platforms as easy to navigate were 40% more likely to invite others to join group deals, a key behavior in sustaining OGB ecosystems.

From a technical perspective, usability features such as product auto-suggestions, simplified group management tools, and fast-loading mobile pages are shown to significantly improve user experience Perlman [41]. Sun et al. [22] reported a direct correlation between perceived ease of use and platform trustworthiness. Platforms rated "very easy to use" achieved trust scores that were 27% higher than average. In mobile commerce, Dang and Naresh [42] also demonstrated that usability leads to higher satisfaction levels and long-term platform loyalty. Overall, perceived ease of use is a key factor in influencing online group buying adoption, especially for digital-native consumers like Gen Z. Platforms that reduce complexity and streamline interaction processes are more likely to gain user acceptance and promote widespread adoption.

H_1: Perceived Ease of Use significantly influences Online Group Buying Adoption among Generation Z in Shanghai.

2.3. Perceived Usefulness

Perceived Usefulness (PU) is a key determinant in the Technology Acceptance Model (TAM) and its extension, TAM2, introduced by Davis [43] and later expanded by Venkatesh and Davis [44] and Davis and Granić [45]. PU is defined as the degree to which an individual believes that using a particular technology will enhance their job performance or daily efficiency [46]. In the context of Online Group Buying (OGB), especially among digital-native users like Generation Z, PU reflects the extent to which users believe that participating in group buying will provide tangible benefits such as saving money, gaining access to better deals, or achieving convenience in shopping [47]. According to Akther and Nur [48], PU is fundamentally a user-driven, subjective evaluation of whether a technological solution improves personal productivity or service accessibility. Wilson et al. [38] noted that when individuals perceive technology as beneficial, such as speeding up transactions or reducing effort, they are more inclined to adopt it. This is particularly relevant in OGB platforms, where users seek advantages like collective discounts, faster order fulfillment, and convenient payment options.

Multiple studies support the influence of PU on online shopping behaviors. For instance, Lim [28] found that perceived benefits, such as reduced product prices and access to high-quality goods through group buying, positively impacted users' intention to adopt OGB platforms. Zhang et al. [3] emphasized that PU strongly correlates with user satisfaction, especially when group buying results in tangible savings or time efficiency. Djafarova and Foots [31] also observed that Generation Z users were 2.5 times more likely to engage in online group buying when they believed the platform added value to their daily lives through convenience, price advantages, or peer recommendations. Moreover, in a survey by iResearch [49], 77% of Generation Z respondents agreed that they were more likely to adopt a platform if it demonstrated clear usefulness, such as better product variety, delivery tracking, and integration with social media.

Prastiawan et al. [50] demonstrated that perceived usefulness (PU) enhances both initial and sustained participation in group buying, especially when users feel that the platform helps them achieve better shopping outcomes. In their research, PU significantly influenced repeat usage intention. Similarly, Milly et al. [51] found that PU was a key predictor of online platform trust and continued engagement, with users reporting increased perceived value when platforms offered timely delivery updates, product recommendations, and group deal notifications. In the OGB context, platforms like Pinduoduo and Meituan have effectively leveraged PU by providing cost comparisons, integrated coupons, and transparent product reviews, which have contributed to their rapid growth and user retention.

H₂: Perceived Usefulness significantly influences Online Group Buying Adoption among Generation Z in Shanghai.

2.4. Perceived Security

Perceived security (PS) refers to an individual's confidence in the safety and protection of their personal and financial information during online transactions [52]. It plays a critical role in influencing consumer trust and behavioral intentions in e-commerce and digital platforms, including Online Group Buying (OGB). As millions of cyber vulnerabilities emerge annually, the lack of robust security measures can deter users from adopting online platforms, especially those involving financial exchanges [53]. Security concerns remain a significant barrier to the adoption of OGB [54]. Consumers are more likely to participate in group buying activities when they believe their payment data and personal information are protected. A study by Mashatan et al. [55] highlighted that perceived online transaction security significantly impacts trust, which in turn influences purchase intention in digital commerce. Similarly, Siagian et al. [56] found that perceived security directly affects users' trust in internet shopping, with higher perceived security leading to an increased willingness to complete transactions online.

From a technical perspective, secure payment systems and website encryption protocols such as Secure Sockets Layer (SSL) and Transport Layer Security (TLS) are essential [57]. TLS, the more advanced protocol, offers stronger encryption and is now the standard for ensuring secure online communications. These technologies are typically implemented through payment gateway software tools that authorize financial transactions and encrypt sensitive data between consumers, payment processors, and merchants [58]. The Payment Card Industry Data Security Standard (PCI DSS), governed by the PCI Security Standards Council, also provides a global framework for securing credit card information [59]. Websites that comply with PCI DSS are perceived as more trustworthy and secure by users, leading to a higher likelihood of engagement on platforms that handle monetary transactions.

Beyond technical safeguards, the psychological aspect of security perception is crucial [60]. Consumers often evaluate a platform's reliability based on its reputation, visibility of security icons, availability of support services, and the ability to resolve disputes. A study by Weiqi [61] confirmed that visual cues such as padlock icons, HTTPS URLs, and recognizable third-party payment methods (e.g., Alipay, WeChat Pay) significantly increase users' perceived security, especially in mobile apps. In the Chinese context, increasing concerns around telecom and online fraud have shaped user behavior [62]. According to the Supreme People's Court of China (SPC), in 2020 alone, scammers defrauded over 35 billion yuan (approximately 5 billion USD), and in 2021, over 394,000 fraud cases were investigated, leading to the arrest of more than 630,000 individuals. This rising threat landscape makes perceived security even more crucial in the decision-making process of consumers, particularly among risk-averse or older populations.

Almaiah et al. [63] emphasized that perceived security is a strong predictor of continued use of mobile payment and group buying platforms. In their study, platforms with higher user-reported security levels experienced greater retention rates. Similarly, Lim [28] found that concerns about data misuse or online fraud are among the top deterrents for non-adopters of group buying services. In conclusion, perceived security not only influences initial adoption but also long-term trust, user satisfaction, and loyalty in OGB platforms. Both technical and psychological measures must be taken to assure users of a platform's reliability and safety.

H₃: Perceived Security has a significant positive influence on Online Group Buying Adoption.

2.5. Theoretical Background

The Technology Acceptance Model (TAM), proposed by Davis [43], is widely used to explain user acceptance of new technologies. It posits that two key factors, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), influence a user's behavioral intention to adopt a technology [45]. Perceived Usefulness refers to the belief that using a system enhances job performance, while Perceived Ease of Use reflects the belief that using the system requires minimal effort [38]. According to TAM, when users find a technology easy to use, they are more likely to perceive it as useful, which in turn positively influences their intention to adopt the system [45].

TAM was later extended into TAM2, incorporating additional constructs such as Subjective Norm, Image, Job Relevance, Output Quality, and Result Demonstrability [64]. These factors provide a more comprehensive view of technology adoption, accounting for social and cognitive influences [51]. Subjective norm refers to the influence of people important to the user, while image reflects the belief that using the technology enhances social status [65]. Job relevance assesses whether the system is applicable to one's work, and output quality represents the perceived performance of the system in task execution. Result demonstrability is defined as the clarity and tangibility of benefits experienced from using the technology [42].

Empirical validation of TAM2 has demonstrated that it can explain up to 60% of the variance in Perceived Usefulness and 37–52% of the variance in Behavioral Intention [66], demonstrating its robustness across different contexts. To further enhance TAM's applicability, especially in the financial and e-commerce sectors, security has been recognized as an additional critical factor. Studies show that perceived security strongly affects users' trust and acceptance, particularly in online payment and banking technologies [67]. TAM and its extensions, including security factors, provide a solid framework for understanding technology adoption, particularly in the context of online group buying platforms. This theoretical foundation will guide the investigation of the factors influencing Generation Z's adoption of these platforms.

2.6. Research Framework

The research framework of this study is grounded in the Technology Acceptance Model (TAM), incorporating three key constructs: Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Perceived Security (PS). These

independent variables are examined in relation to their influence on the dependent variable, Online Group Buying (OGB) Adoption among Generation Z consumers. The framework posits that when users perceive OGB platforms as useful, easy to navigate, and secure, their likelihood of adopting such platforms increases. This model provides a structured approach to understanding technology acceptance behaviors in the context of digital group buying.
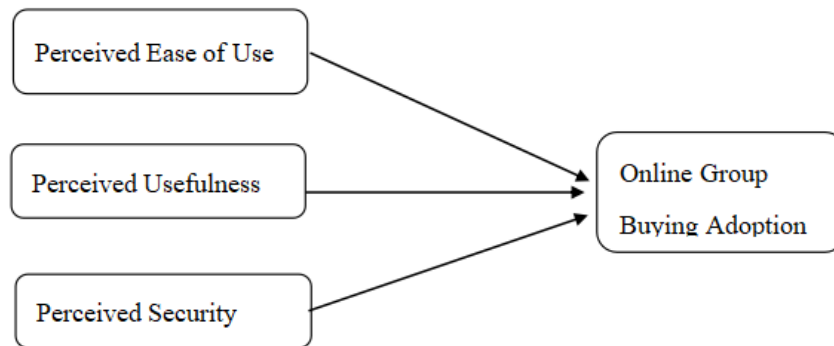
Figure 1.
Research Framework.

3. Research Methodology

This study employs a quantitative research method to investigate the factors influencing the adoption of online community group buying among Generation Z in Shanghai, China. Quantitative research involves collecting and analyzing numerical data to explore patterns and relationships between variables. The research design includes data collection techniques, sampling methods, target population, and considerations regarding research interference. It also outlines the data analysis procedures, questionnaire design aligned with the theoretical framework, and the approach for assessing the validity and reliability of the research instrument [68].

3.1. Sampling Design

This study focuses on individual respondents within the Generation Z demographic in Shanghai, China, specifically young adults aged 18 to 24. The unit of analysis is students in Shanghai, as they represent active participants in online community group buying [69]. A non-probability convenience sampling method is employed, utilizing email and social media platforms to distribute the questionnaire. This approach is suitable for reaching digitally engaged youth and allows for efficient data collection despite limitations such as potential sampling bias and restricted reach [70]. Based on Krejcie and Morgan [71] sample size determination table, a minimum of 384 responses is required for populations exceeding one million. With an estimated Generation Z population of over 3.15 million in Shanghai [3] sample size is statistically sound. To mitigate the risk of non-response, approximately 400 questionnaires will be distributed.

3.2. *Research Instrument*

This study employs a structured quantitative questionnaire comprising 20 items, distributed online via social media platforms to reach Generation Z respondents in Shanghai. The questionnaire is divided into three main sections. Section A gathers demographic information, including age, gender, race, education level, occupation, and monthly expenses, to provide context for the analysis. Section B focuses on the dependent variable, Generation Z's satisfaction with and intention to adopt online payment systems, measured using five items. Section C explores three independent variables: Perceived Ease of Use (4 items), Perceived Usefulness (5 items), and Perceived Security (5 items). All items are adapted from established literature and measured on a five-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The questionnaire is designed to be clear and concise, ensuring ease of response and capturing meaningful insights into the key factors influencing online payment adoption among young adults in Shanghai.

Table 1.
Questionnaire Design Table.

Section	Variable	Items	Source	Adopt/Adapt
A	Demographic Profile	6	Sekaran and Bougie [72] and Zikmund et al. [73]	Adapt
B (DV)	Adoption of Online Payment Among Gen Z in Shanghai	5	Seemiller and Grace [74], Taylor [75] and Lu [76]	Adapt
C (IVs)	Perceived Ease of Use (PEOU)	4	Ozturk et al. [77]	Adapt
	Perceived Usefulness (PU)	5	Putra [78] and Sharifzadeh et al. [79]	Adapt
	Perceived Security (PS)	5	Kassim [80] and Hajli and Lin [81]	Adapt

3.3. Data Analysis

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS), a widely used tool for quantitative data analysis. Descriptive statistics were applied to summarize the demographic profile of the respondents [82].

Pearson correlation tests were employed to assess the relationships between the independent variables, Perceived Ease of Use, Perceived Usefulness, and Perceived Security, and the dependent variable, online group buying adoption.

A significance level (p-value) of 0.05 was used to determine statistical significance. Regression analysis was also conducted to evaluate the strength and direction of associations between variables. R-squared (R^2) values were interpreted accordingly on Cohen's [83] guideline: Values below 0.02 indicate a very weak relationship; 0.02 to 0.13 indicate a weak relationship; 0.13 to 0.26 indicate a moderate relationship; and values equal to or greater than 0.26 suggest a substantial relationship [84]. Cronbach's Alpha was used to measure the internal consistency of the questionnaire constructs, with values between 0.70 and 0.90 considered acceptable for reliability, as suggested by Watkins [85].

4. Results and Discussion

A total of 430 questionnaires were distributed to participants, and 390 valid responses were successfully collected, resulting in a response rate of approximately 90.70 percent. All returned questionnaires were complete, with no missing data or incomplete answers. As a result, the entire dataset was suitable for further analysis.

4.1. Demographic Profile of Respondents

A total of 390 valid responses were analyzed. The majority of respondents were male (54.6%) and within the 18–20 age range (51.3%). Most participants held a Diploma or Foundation qualification (43.3%). In terms of employment status, the highest proportion was unemployed (31.3%), followed closely by entrepreneurs (30.3%). Regarding monthly expenses, more than half of the respondents (56.4%) reported spending less than RMB 100.

Table 2.
Demographic Profile of Respondents.

		Count	Column N %
Gender	Male	213	54.60%
	Female	177	45.40%
Age	18-20 years	200	51.30%
	21-24 years	178	45.60%
	24 and above	12	3.10%
Education Background	High School	84	21.50%
	Diploma/Foundation Program	169	43.30%
	Bachelor's degree or equivalent	120	30.80%
	Master's degree	14	3.60%
	Doctoral Degree	3	0.80%
Occupation	Student	55	14.10%
	Employed	66	16.90%
	Unemployed	122	31.30%
	Entrepreneur	118	30.30%
Monthly Expenses	Less than RMB 100	220	56.40%
	RMB 1001-RMB 5000	97	24.90%
	RMB 5001- RMB 8000	51	13.10%
	More than RMB 8000	22	5.60%

4.2. Online Group Buying Behavior and Preferences

Most respondents had several group buying apps installed on their phones, with 48.5% having 3–5 apps and 27.9% having more than 5. WeChat Pay was the dominant platform used in the past three months (61.5%), followed by AliPay (26.7%). Travel/transportation (44.1%) and food & beverage (43.3%) were the most frequently purchased items through online group buying.

Table 3.
Online Group Buying Behavior and Preferences.

		Count	Column N %
How many online group buying applications are installed on your phone?	1-3 apps	71	18.20%
	3-5 apps	189	48.50%
	More than 5 apps	109	27.90%
Which online group buying platform have you frequently used in the past 3 months?	Ali Pay	104	26.70%
	WeChat Pay	240	61.50%
	Union Pay	43	11.00%
	Cai Fu Tong	1	0.30%
	JDPAY.com	1	0.30%
	Apple Pay	1	0.30%
	Others	0	0.00%
What types of products or services do you most frequently purchase through online group buying?	Travel/Transportation	172	44.10%
	Food & Beverage	169	43.30%
	Clothing and shoes	16	4.10%
	Daily Necessities	12	3.10%
	Others	12	3.10%

4.3. Reliability Test Result

Based on the results presented in Table 4, the Cronbach's Alpha values for both the dependent and independent variables indicate a satisfactory level of internal consistency. The dependent variable, online group buying adoption, recorded a Cronbach's Alpha value of 0.819, reflecting a high degree of internal reliability. Among the independent variables, perceived ease of use achieved a Cronbach's Alpha of 0.824, showing consistent responses across its items. Perceived usefulness had a value of 0.725, which, although lower, still meets the acceptable threshold for exploratory research. Perceived security obtained a Cronbach's Alpha of 0.933, signifying excellent reliability. According to Febryana et al. [86], these values confirm that all constructs maintain acceptable internal consistency, making them suitable for subsequent analysis.

Table 4.
Reliability test (Cronbach's Alpha) (n=43).

Variable	Construct	Cronbach's Alpha	Number of Items
Dependent	Online Group Buying Adoption	0.819	5
Independent	Perceived Ease of Use	0.824	4
	Perceived Usefulness	0.725	5
	Perceived Security	0.933	5
Overall		**0.825**	20

4.4. Multiple Regression

The multiple regression results, presented in Table 5, show a correlation coefficient (R) of 0.719, indicating a strong association between the independent variables and the dependent variable. The coefficient of determination (R^2) is 0.517, which suggests that 51.7 percent of the variance in the acceptance of online group buying can be explained by the model. The remaining 48.3 percent of the variance is likely influenced by other variables not included in the study. According to Obeng et al. [87], an R^2 value between 0.1 and 0.5 is considered acceptable in behavioral research. Therefore, the obtained R^2 value of 0.517 indicates a reliable and valid model, especially considering the complexity of consumer behavior.

Table 5.
Multiple regression – model summary.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.719[a]	0.517	0.513	0.296

Note: a. Predictors: (Constant), IV3, IV1, IV2.

4.5. Analysis of Variance (ANOVA)

As shown in Table 6, the ANOVA results support the statistical significance of the regression model. The F-ratio is 137.813, and the p-value is less than 0.001. This indicates that the combined effect of perceived ease of use, perceived usefulness, and perceived security significantly explains the variation in the acceptance of online group buying among the respondents. Consequently, the null hypothesis is rejected, affirming that at least one of the predictors meaningfully contributes to the model. This finding is consistent with Liu et al. [27], who also found significant effects of these factors on online group buying adoption.

Table 6.
ANOVA

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.158	3	12.053	137.813	0.000ᵇ
	Residual	33.758	386	0.087		
	Total	69.916	389			

Note: a. Dependent Variable: DV.
b. Predictors: (Constant), IV3, IV1, IV2.

4.6. Beta Coefficient and Multicollinearity

Table 7 provides further insight into the individual contributions of each independent variable to the dependent variable. Perceived ease of use has a standardized beta coefficient of 0.174 with a p-value less than 0.001, indicating a statistically significant positive relationship. This suggests that for every one-unit increase in perceived ease of use, the acceptance of online group buying increases by 0.174 units. The variance inflation factor (VIF) for this variable is 1.467, suggesting no issues with multicollinearity. Perceived usefulness has the strongest impact, with a beta coefficient of 0.377 and a p-value less than 0.001, implying that a one-unit increase in perceived usefulness results in a 0.377-unit increase in acceptance. Its VIF is 3.306, which remains within acceptable limits. Lastly, perceived security also shows a significant positive effect, with a beta value of 0.256 and a p-value less than 0.001. The VIF for perceived security is 3.245, indicating no multicollinearity problem. These results demonstrate that all three independent variables significantly influence the acceptance of online group buying [88].

Table 7.
Multiple regression – coefficients.

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.564	0.166		9.393	0	1.237	1.891		
	IV1	0.162	0.04	0.174	4.069	0	0.084	0.241	0.682	1.467
	IV2	0.318	0.054	0.377	5.87	0	0.211	0.424	0.303	3.306
	IV3	0.203	0.051	0.256	4.017	0	0.104	0.302	0.308	3.245

4.7. Discussion

The findings of this study provide a nuanced understanding of the factors influencing the adoption of online group buying among Generation Z consumers in Shanghai, China. The analysis indicates that perceived usefulness, perceived security, and perceived ease of use significantly influence users' behavioral intention to adopt online group buying platforms. Perceived usefulness emerged as the most significant predictor (Beta = 0.377), suggesting that Generation Z users are more likely to adopt online group buying when they perceive the platform as beneficial in enhancing their efficiency, convenience, or overall shopping experience. This underscores the importance of functional value in shaping user adoption behavior, particularly among a demographic that is highly engaged with digital technologies.

Perceived security was identified as the second most influential factor (Beta = 0.256), highlighting the critical role of trust and safety in digital transactions. Concerns related to privacy, data protection, and secure payment processes appear to significantly affect users' willingness to engage with online group buying platforms. This finding reflects the growing importance of secure system design in fostering consumer confidence in e-commerce environments. Perceived ease of use also demonstrated a positive and statistically significant effect on adoption intention (Beta = 0.174), indicating that platforms with intuitive interfaces and user-friendly features are more likely to attract and retain users. The result reinforces the relevance of usability in system design, particularly for digital-native consumers who value seamless interaction and minimal effort in navigating online services.

Collectively, these findings offer practical implications for platform developers, marketers, and e-commerce strategists. Emphasizing system usefulness, enhancing security measures, and optimizing usability are essential strategies for increasing adoption rates among Generation Z consumers. These insights contribute to the broader literature on technology acceptance by highlighting the specific expectations and preferences of younger consumers in the context of online group buying.

5. Conclusion

5.1. Summary of Findings

Table 8 summarizes the outcomes of hypothesis testing concerning the influence of perceived ease of use, perceived usefulness, and perceived security on the acceptance of online group buying among Generation Z in Shanghai, China. The results indicate that all three variables significantly impact user acceptance. Perceived usefulness demonstrates the strongest influence (p < 0.001, β = 0.377), followed by perceived security (p < 0.001, β = 0.256), and perceived ease of use

(p < 0.001, β = 0.174). These findings highlight the importance of platform functionality, trust in transaction security, and user-friendliness in encouraging the adoption of online group buying among this demographic.

Table 8.
Hypothesis test result.

Hypothesis Statement	Findings	Conclusion
H1: Perceived Ease of Use significantly influences the Online Group Buying Adoption among Generation Z in Shanghai, China.	p-value: <0.001, β: 0.174	Accepted
H2: Perceived Usefulness significantly influences the Online Group Buying Adoption among Generation Z in Shanghai, China.	P-value < 0.001, β value = 0.377	Accepted
H3: Perceived Security significantly influences the Online Group Buying Adoption among Generation Z in Shanghai, China.	P-value < 0.001, β value = 0.256	Accepted

These findings are consistent with previous studies that emphasize the role of technology-related perceptions in influencing user behavior in digital environments. Ou et al. [25] emphasized the significance of perceived usefulness and perceived ease of use in predicting technology adoption. Similarly, Garcia et al. [21] confirmed that ease of navigation and interface simplicity play a vital role in enhancing user acceptance. Furthermore, the importance of perceived security has been established by researchers such as Guan et al. [7] and Zhang et al. [3] who highlighted its contribution to building consumer trust in online transactions. Collectively, these results suggest that successful online group buying platforms should prioritize usefulness, ensure security, and maintain a user-friendly design to effectively appeal to Generation Z consumers.

5.2. Implications

The findings of this study offer several important implications for e-commerce platform developers, digital marketers, and businesses aiming to enhance the adoption of online group buying among Generation Z consumers in Shanghai. First, the strong influence of perceived usefulness highlights the necessity for platforms to deliver clear functional value. Developers should focus on integrating features that enhance shopping convenience, enable cost savings, and improve the overall user experience [50]. Demonstrating the tangible benefits of online group buying through personalized recommendations, discounts, and time-saving options may significantly strengthen user engagement [51].

Second, the role of perceived security as a key determinant suggests that users are highly sensitive to the trustworthiness of online platforms. To address this, businesses must prioritize the implementation of robust security measures, such as encrypted payment systems, verified seller ratings, and transparent data protection policies [56]. Building trust through visible security features and responsive customer service can enhance user confidence and drive participation in group buying activities. Furthermore, the significance of perceived ease of use indicates that an intuitive and user-friendly interface design is essential for capturing the attention of Generation Z users, who value seamless digital interactions [53]. Simplifying navigation, minimizing steps in the purchasing process, and ensuring mobile optimization are practical steps that can lower entry barriers and encourage adoption.

Collectively, these insights suggest that fostering online group buying adoption requires a comprehensive strategy that combines functional utility, security assurance, and ease of interaction. Businesses and platform operators should align their service design and marketing efforts with the expectations and behaviors of tech-savvy, convenience-driven Gen Z consumers. By doing so, they can enhance user satisfaction, increase platform loyalty, and ensure sustainable growth in the competitive e-commerce landscape.

5.3. Limitations and Future Research

While this study offers valuable insights into the factors influencing the acceptance of online group buying among Generation Z in Shanghai, several limitations should be acknowledged. First, the sample primarily consisted of respondents from urban areas, which may limit the generalizability of the findings to rural populations where access to technology and online shopping behaviors may differ significantly. Additionally, the majority of participants were aged between 18 and 24, potentially excluding the perspectives of older members of Generation Z or other age cohorts who may exhibit different patterns of technology adoption. Ethnic diversity within the sample was also limited, with a predominant representation of Chinese ethnicity, potentially overlooking cultural or behavioral variations among minority groups residing in Shanghai. Moreover, the study focused on three key factors: perceived ease of use, perceived usefulness, and perceived security, while excluding other potentially influential variables such as price sensitivity, trust in sellers, social influence, or perceived enjoyment. These omitted factors could provide additional explanatory power in understanding consumer behavior in online group buying contexts. Although data on respondents' monthly expenses were collected, the study did not examine the relationship between income levels and group buying adoption, which may be an important economic consideration [1].

Future research should aim to address these limitations by adopting a more diverse and representative sampling approach that includes participants from both urban and rural settings, broader age groups, and varying ethnic backgrounds. Investigating the role of additional demographic variables such as education level, occupation, and income could yield a more comprehensive understanding of adoption behavior. Expanding the scope of the theoretical framework beyond the Technology Acceptance Model (TAM) could enhance the explanatory depth of future studies. Incorporating constructs from other models, such as perceived enjoyment from the Unified Theory of Acceptance and Use of Technology (UTAUT)

or social influence from the Diffusion of Innovation theory, may provide a more nuanced perspective on the motivations and barriers affecting adoption. Future research efforts should adopt a multidimensional approach that considers diverse populations, broader sets of variables, and integrated theoretical perspectives to advance knowledge on online group buying behavior among Generation Z and beyond.

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