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Product Quality Control Activities and Repurchase Intention in Agro-product E-commerce

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Abstract

Purpose: This study aims to explore the critical factors in the quality control activities of agricultural products in e-commerce companies and analyze how these factors affect customers' perceived value and repurchase intention. Finally, it further reveals the mediating role of perceived value between the factors of quality control activities of agricultural products and customer repurchase intention. **Research design, data and methodology:** This study identified six independent factors within agricultural product quality control activities: freshness, assurance, diversity, grading, packaging, and timeliness. Subsequently, the impact of these factors on customer repurchase intention was analyzed. Additionally, perceived value was considered as an intermediary variable between the independent and dependent variables. Data was gathered from 269 Chinese consumers who had experience purchasing on agricultural product e-commerce websites. **Results:** The study results indicate that the relevant factors within agricultural product quality control activities strongly influence customer repurchase intention, with perceived value mediating this relationship. **Conclusions:** The significance of this study lies in its exploration of the relevant factors within agricultural product e-commerce's product quality control activities. It identifies their impact on customer repurchase intention and confirms the mediating role of perceived value. The results of this research offer valuable insights and practical guidance for academics in related research fields and practitioners in the agricultural product e-commerce industry.

Keywords: Agro-product E-commerce, Product Quality Control Activities, Perceived Value, Customer Repurchase Intention.

JEL Classification Code : C12, L15, L81, O13, Q13

1. Introduction

E-commerce plays a crucial role in contemporary international trade, and the development of agricultural e-commerce has driven the optimization of rural industrial structures and advancements in agricultural production. This has enhanced agricultural products' circulation

efficiency and competitiveness, thereby stimulating the vigorous growth of rural economies. Simultaneously, it has provided abundant opportunities for individuals residing in rural and remote areas of the BRICS countries to improve their living standards and eradicate poverty (Georgiou, 2009; Karine, 2021). Agricultural e-commerce brings extensive product choices and cost-effective transactions to consumers, provides abundant product information and

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facilitates barrier-free access from different locations (Bulut, 2015; Shin et al., 2013). According to Alibaba's "Agricultural E-commerce White Paper" in 2021, the sales of agricultural products on the Alibaba platform reached 397.5 billion yuan in the same year (Zhong, 2021). This indicates a significant surge in consumer enthusiasm and demand for purchasing agricultural products online.

Online purchasing of agricultural products has become a primary consumption method in consumers' daily lives. With the emergence of more and more agricultural product e-commerce platforms, consumers face multiple choices when selecting agricultural products. Improving competitiveness and achieving sustainable development in the fiercely competitive market is a crucial challenge for agricultural product e-commerce platforms. It is essential to enhance product quality, optimize brand promotion through effective marketing strategies, improve corporate reputation and visibility through electronic word of mouth (Donthu et al., 2021), and retain loyal customer groups by enhancing consumers' willingness to make repeat purchases.

Previous research has consistently shown that product quality significantly affects the willingness to repurchase (Cuong, 2022; Mahendrayanti & Wardana, 2021). Quality products also form the foundation of customer satisfaction (Parasuraman et al., 1985). The advantage brought by product quality plays a crucial role in maintaining customer trust and market leadership (Berry et al., 1994; Parasuraman et al., 1985). At the same time, in the agricultural product field, product quality is a primary criterion for consumer selection. However, the uncertainty of online agricultural product quality increases consumers' risks. Online agricultural products must meet consumers' expectations to avoid decreased satisfaction and hindered growth of the agricultural product e-commerce markets. Effectively ensuring the quality of agricultural products is a crucial concern for enterprises. Therefore, agricultural product e-commerce platforms must continue to focus on product quality and control product quality through corresponding activities to improve competitiveness and promote sustainable development. However, in the relevant academic research, the study of quality control activities for agricultural products has yet to receive widespread attention, and finding relevant empirical studies is challenging. This article conducts an in-depth investigation of six indicators related to agricultural product quality control activities, selected across three dimensions: the intrinsic quality of agricultural products, classification, and distribution, and explores their impact on customer willingness to repurchase.

However, scholarly investigation into the interplay of product quality control activities and repurchase intentions within the domain of agro-product e-commerce remains notably limited. Current academic inquiries on the e-commerce of agricultural products predominantly center on

three principal dimensions: the developmental status and diverse modes of agricultural product e-commerce (Huo & Mu, 2017; Liu & Walsh, 2019); logistics distribution and optimization of agricultural product e-commerce channels (Juan & Yadong, 2021; Liu, 2021); and the determinants influencing purchase intention and customer satisfaction in agricultural product e-commerce (Guo et al., 2022; Liu & Kao, 2022). Zeithaml (2000) has identified that the relationship between quality and purchase also influences perceived value. Previous studies assert that customer perceived value significantly influences repurchase intention (Ali & Bhasin, 2019; Chatzoglou et al., 2022; De et al., 2018; Dlačić et al., 2014; Wu et al., 2014). Furthermore, perceived value plays a pivotal mediating role between product quality and purchase intentions (Chatzoglou et al., 2022). The purpose of this study is to achieve the following three research objectives: firstly, to review previous studies to identify the factors that influence agricultural product quality management activities; secondly, to determine through empirical analysis the relationship between the factors in agricultural product quality management activities and consumers' repurchase intentions; and finally, to explore whether perceived value acts as a mediating factor between agricultural product quality management activities and consumers' repurchase intentions. This study conducted a comprehensive literature review to achieve these research objectives and constructed a conceptual framework to describe the relationship between product quality control activities and customer repurchase intentions in agricultural e-commerce. This framework provides theoretical foundations and offers distinctive insights based on empirical evidence, thereby contributing to the advancement of agricultural e-commerce theory and practice.

2. Background

2.1. E-commerce of Agricultural Products

With the advancement of information technology and transportation improvements, agricultural products are now transacted efficiently through open communication networks such as the Internet. The sale and distribution of fresh agricultural products are no longer confined to local markets but have expanded to national and global levels (Van der Vorst et al., 2002). In recent years, with the support of national policies in China, the development of "Internet + agriculture" cannot be underestimated. Many e-commerce companies, including platforms such as Taobao, Douyin, and Kuaishou, have increasingly focused on agricultural product e-commerce. According to data from the Ministry of Commerce, the average annual growth rate of online

retail sales of agricultural products in China exceeds 30%, and this growth trend is continuing. Particularly noteworthy is the year 2020 when, amid the outbreak of the COVID-19 pandemic, national online retail sales experienced negative growth. However, online sales of agricultural products demonstrated a robust growth rate of 31%, four times higher than the corresponding figure in 2019 (Guo et al., 2022). This indicates China is a big e-commerce market for agro-products and an increasing consumer reliance on e-commerce platforms to procure agricultural products (Tzeng et al., 2021).

The agricultural products e-commerce industry exhibits strong growth potential and expansive developmental space. The primary motivations behind using e-commerce for agricultural products include factors such as convenience, cost-effectiveness, access to products unavailable through other channels, time-saving attributes, and efficient delivery services (Apriadi & Saputra, 2017). Despite the prosperity of the fresh food e-commerce market, its success is underpinned by fierce competition. After a period of rapid development, the market entered a phase of restructuring, marked by the closure or acquisition of smaller enterprises lacking competitive advantages (Sigurdsson et al., 2020). This outcome stems from the unique challenges faced by agricultural products compared to industrial goods; they are regionally constrained, subject to cyclical production patterns, and highly perishable, resulting in notable price fluctuations, significant post-production losses, and inconsistent product quality (Teng & Lu, 2016). This developmental inadequacy has given rise to a critical issue: consumers lack sustained purchasing intentions. Consequently, within the realm of agricultural e-commerce, the augmentation of consumers' repurchasing intentions has emerged as a major concern among scholars (Gu et al., 2019; Kim & Ha, 2021; Xu et al., 2022; Yu et al., 2020; Zhe et al., 2023).

2.2. Product Quality Control Activities

Quality refers to the degree to which a product meets the needs or successfully serves the purpose of the consumer (Kahn et al., 2002). It is paramount in academic and business management fields (Chou et al., 2015). Empirical studies confirm that product quality significantly influences consumer satisfaction and the intention to make repeat purchases (Cuong, 2022; Mahendrayanti & Wardana, 2021n). Due to their distinct regional, cyclical, and perishable characteristics, agricultural products exhibit inherent variability in product quality. Consequently, consumers prioritize product quality when selecting agricultural products (Dominici et al., 2021; Venkatesh & Davis, 2000). Currently, consumer groups from the post-80s and post-90s generations demonstrate a willingness to

elevate their personal consumption standards because they have heightened expectations for an improved quality of life. Thus, high-quality products are crucial for the successful penetration of agricultural products into the market (Clements et al., 2008). Product quality acts as a reflection of the benefits that the product imparts to customers (Liu & Kao, 2022).

In the agribusiness and food industry, quality control is universally acknowledged as fundamental in achieving food quality (Luning & Marcelis, 2006). Quality control, constituting a fundamental aspect of food quality management, aims to maintain product properties, production processes, and human processes within acceptable tolerances. It is an ongoing process of evaluating the performance of both technological and human processes and undertaking corrective actions as needed. Control activities focus on gathering information to reduce uncertainty, albeit not ambiguity (Luning & Marcelis, 2006). Enterprises should recognize the critical importance of implementing product quality control measures.

However, in most instances, the quality of agricultural products is examined through a single dimension, with quality control factors as part of various key factors, requiring a comprehensive and holistic analysis of the factors affecting quality control activities. This study focuses on quality control activities. We are exploring aspects such as the inherent quality of products, categorization, and delivery quality. The selection of quality control activity factors mainly takes into account the following aspects: First, quality considerations encompass various aspects such as inherent product quality, product assurance, and product freshness (Wang & Zhang, 2020). It is directly related to the core quality of the product and the consumer's confidence in the product. When viewed from the perspective of product categorization, the diversity and grading of products form integral components of agricultural product quality control activities (Ligon, 2002), and help consumers better understand and choose agricultural products. Likewise, from the standpoint of product distribution, adequate product packaging plays a pivotal role in ensuring product quality and enhancing product value (Kwaku & Fan, 2020). Furthermore, this study references SERVQUAL and logistics service quality (LSQ) and incorporates service quality assurance indicators and logistics service quality and timeliness indicators based on the characteristics of the e-commerce model for agricultural products (Do et al., 2023; Mentzer et al., 1999; Parasuraman et al., 1985; Uvet, 2020). In service quality, assurance has been identified as a significant factor influencing repurchase intent (Chen et al., 2019; Rasaily et al., 2023; Uvet, 2020). Similarly, within logistics service quality, timeliness is a critical factor affecting customer

satisfaction, trust, and repurchase intentions (Do et al., 2023; Jain et al., 2021; Lee & Kim, 2008; Liu & Joo, 2023).

Based on the abovementioned considerations, a thorough exploration is conducted into the various dimensions of quality control activities for agricultural products. These dimensions encompass the intrinsic characteristics of agricultural products (freshness and assurance), categorization (diversity and grading), and distribution (packaging and timeliness). These factors play a crucial role in the company's management of agricultural product quality and the enhancement of consumer relationships.

2.3. Customer Repurchase Intention

In the theory of planned behavior (TPB), behavioral intention is shaped by behavioral attitudes and subjective norms (Jiang & Zhao, 2016), with behavioral intention as the precursor to individual actions. Repurchase intention, within the context of this study, refers to a customer's expressed willingness to continue patronizing a specific merchant in the future, encompassing the decision to repurchase the same or different products (Hellier et al., 2003; Khalifa & Liu, 2007). Notably, the theoretical underpinnings and content of repurchase intention significantly differ from initial purchase intention (Chatzoglou et al., 2022). Repurchase intention is inherently more favorable than purchase intention as it signifies a commitment to continued future purchases (Zeithaml et al., 2013). Recognized as vital to business success, it is acknowledged that retaining existing customers is more cost-effective than acquiring and serving new ones (Spreng et al., 1995). Consequently, numerous scholars have extensively researched the determinants of customers' repurchase intentions across diverse fields (Anshu et al., 2022; Chiu et al., 2009; Kim et al., 2012; Law et al., 2022; Zhe et al., 2023).

In much of repurchase intention research, scholars often explore how transactional benefits, including interface quality, effective web design, satisfaction, and lower prices, influence repurchase intention (Anderson & Srinivasan, 2003; Jones et al., 2000; Keaveney & Parthasarathy, 2001; Ranganathan & Ganapathy, 2002). The rationale behind customers choosing the same service provider and making repeated purchases is rooted in their prior experiences. Olaru (2008) posited that perceived value positively influenced repurchase intention and suggested that repurchase intention serves as a guide for recommending the same product to others. Moreover, Chen (2019) confirmed the positive correlation between perceived value and repurchase intention, highlighting its mediating role between airline service quality and customers' repurchase intentions. Therefore, this paper selects perceived value as the

mediating variable. Based on the above discussion, the research questions for this study are as follows:

1. What are the factors of product quality control activities of agricultural e-commerce companies?
2. How do the characteristics of agricultural e-commerce companies' product quality control activities affect customers' repurchase intentions?
3. Does perceived value play a mediating role between the characteristics of product quality control activities in agricultural e-commerce companies and customers' purchase intentions?

2.4. Building Hypotheses

Based on previous research, this study considers agricultural product quality control activities to include three aspects: intrinsic qualities of agricultural products, classification, and distribution. Taking factors related to the intrinsic quality of agricultural products (freshness, assurance), categorization (diversity, grading), and distribution (packaging, timeliness) as independent variables sets perceived value as a mediating variable to explore how these factors influence customers' repurchase intentions.

2.4.1. Freshness

Freshness stands out as a paramount characteristic of agricultural products due to their inherent susceptibility to spoilage and perishability. When purchasing fruits or vegetables, freshness emerges as the pivotal criterion to consider (Péneau et al., 2006). European consumers prioritize freshness as the primary factor influencing their food choices, followed by considerations such as taste and healthy eating (Lennernäs et al., 1997). Xu (2020) confirms that maintaining the freshness of produce significantly enhances service quality, thereby elevating customer satisfaction. The demand for agricultural products is intricately tied to their freshness (Feng et al., 2022), which sets agricultural products apart from others in the market (Jaeger et al., 2023). Freshness is an intrinsic characteristic of agricultural products, and it is only through ensuring freshness that product quality can be guaranteed. Thus, the hypotheses are made as follows:

H1a: Quality control activities for freshness will positively affect perceived value in the e-commerce of agricultural products.

H1b: Quality control activities for freshness will positively affect repurchase intentions in the e-commerce of agricultural products.

2.4.2. Timeliness

The term timeliness in the context of agricultural product

e-commerce refers to the performance of the entire distribution system linking buyers and sellers, encompassing order cycle time and the duration between placing and receiving an order for the buyer (Koufteros et al., 2014). It stands out as the most traditional and pivotal characteristic within the domain of logistics service quality (Uvet, 2020). Among the various LSQ dimensions on e-commerce platforms, timeliness emerges as the most critical factor influencing customer satisfaction in e-fulfillment (Melián-González, 2022; Murfield et al., 2017). Given the limited shelf life of agricultural products, merchants must deliver orders promptly to safeguard the quality of the product. Consequently, timeliness may serve as an indicator of product quality control activities in the e-commerce of agricultural products. It also holds significant importance as a feature of enterprises' quality control activities for agricultural products. Thus, the hypotheses are made as follows:

H2a: Quality control activities for timeliness will positively affect perceived value in the e-commerce of agricultural products.

H2b: Quality control activities for timeliness will positively affect repurchase intentions in the e-commerce of agricultural products.

2.4.3. Assurance

In the service quality model, assurance encompasses the knowledge and consideration exhibited by employees, coupled with their ability to instill confidence and trust in customers (Rasaily et al., 2023). Within this framework, quality assurance adopts a preventative approach addressing all potential hazards associated with the food processing steps. It serves as a quality control mechanism at each stage of the process, reducing the risk of microbial contamination and instilling confidence in the final product. This involves the implementation of documented procedures with specific and necessary verifications (Gonçalo, 2003). In the context of online agricultural product purchases, customers lack the ability to directly inspect the quality of the products. Consequently, the control activities related to product quality assurance are important for customers. These activities encompass a company's capacity to provide product safety certificates and the quality assurance measures employed by companies to facilitate product returns and replacements in case of failure. Thus, the hypotheses are made as follows:

H3a: Quality control activities for assurance will positively affect perceived value in the e-commerce of agricultural products.

H3b: Quality control activities for assurance will positively affect repurchase intentions in the e-commerce of

agricultural products.

2.4.4. Diversity

Product diversity denotes the presence of various products within a specific category, such as different brands of the same product (Lancaster, 1990). It further categorizes diversity into spatial diversity, representing variations in products across different points in time, and generational diversity, reflecting differences in products across future generations. Additional products can augment the core of a product, thereby adding value to it (Fu, 2022). The characteristics of a product are typically gauged by the diversity of individuals, signifying distinctions in product quality. Ding's (2023) research demonstrates that an increase in product diversity can expand residents' consumption, broaden consumers' choice range, and enhance the likelihood of purchasing satisfactory goods, consequently elevating consumer welfare. Based on the above research, the following hypotheses are made:

H4a: Quality control activities for diversity will positively affect perceived value in the e-commerce of agricultural products.

H4b: Quality control activities for diversity will positively affect repurchase intentions in the e-commerce of agricultural products.

2.4.5. Grading

Grading systems in the context of agricultural products involve the classification of goods based on vertical differences in quality characteristics (Ligon, 2002; Zusman, 1967). These characteristics may include aspects readily identifiable by consumers, such as size, or those more challenging to discern before consumption, like flavor profiles. Some characteristics may be impossible for consumers to identify independently. From the supply side perspective, grading systems play a crucial role in enhancing the quality of agricultural products available on the demand side. They serve as a means to provide consumers with grading information, facilitating well-informed decisions regarding food quality (Nie & Zhu, 2020). As the incomes of Chinese consumers rise, there is a discernible shift in dietary preferences towards higher-quality food (Yu, 2018; Yu & Abler, 2009). Grade labeling emerges as an effective tool for providing consumers with the information needed to make informed food purchasing decisions (Choi et al., 2018), saving them time in making food quality choices. This, in turn, stimulates businesses to respond to the growing consumer demand for high-quality food (Hoa et al., 2019). Based on the above research, the following hypotheses are made:

H5a: Quality control activities for grading will positively

affect perceived value in the e-commerce of agricultural products.

H5b: Quality control activities for grading will positively affect repurchase intentions in the e-commerce of agricultural products.

2.4.6. Packaging

Packaging a product with pertinent product details significantly influences consumer buying behavior. The inclusion of names, features, and attractive product packaging plays a pivotal role in capturing consumer attention. The packaging and marketing strategies employed for a product exert a considerable impact on consumer perception. Regardless of the inherent quality of a product, the influence of its packaging on customer purchasing decisions remains high (Li et al., 2021; Naseem et al., 2021; Rundh, 2009). The primary objective of packaging is to ensure the safety, wholesomeness, and overall quality of the product. Well-designed packaging has the potential to extend the useful postharvest life of agricultural products, provided the quality and condition of the product at harvest allow for it. This, in turn, guarantees that the product's quality is maintained throughout the supply chain until it reaches the end consumer, ensuring its optimal utilization (Kwaku & Fan, 2020). Therefore, the hypotheses are made as follows:

H6a: Quality control activities for packaging will positively affect perceived value in the e-commerce of agricultural products.

H6b: Quality control activities for packaging will positively affect repurchase intentions in the e-commerce of agricultural products.

2.4.7. Perceived value

Perceived value has emerged as a key determinant of repurchase intention (Sullivan & Kim, 2018; Wu et al., 2014). In essence, if a product or service is perceived as having low value due to factors such as low quality or a high price, the intention to purchase is anticipated to be low. It has been established that consumer value forms the fundamental basis for all exchange activities and plays a pivotal role in driving buying intentions (Wu et al., 2014). While it is commonly argued that a consumer's purchase decision is primarily shaped by expected utility before the actual purchase, it is important to note that perceived value from a previous purchase can also exert an influence on the consumer's repurchase decision (Ali & Bhasin, 2019; Chatzoglou et al., 2022; De et al., 2018). In the post-purchase phase, consumers may reevaluate the product's value by balancing actual costs against tangible benefits. If the benefits outweigh the costs, consumers are more likely

to express a repurchase intention (Jensen, 2001). Thus, the hypotheses are made as follows:

H7: Perceived value will positively affect repurchase intention in the e-commerce of agricultural products.

H8: Perceived value will play a mediating role in the relationships between quality control activities and customers' repurchase intention in the e-commerce of agricultural products.

2.5. Research model

This study investigated the impact of product quality control activities (freshness, timeliness, assurance, diversity, grading, and packaging) on repurchase intention in agricultural product e-commerce. Additionally, it examined whether customer satisfaction and perceived value could mediate the relationship between product quality control activities and repurchase intention. Based on previous studies, a research model was developed that reflects the research hypotheses as shown in Figure 1.

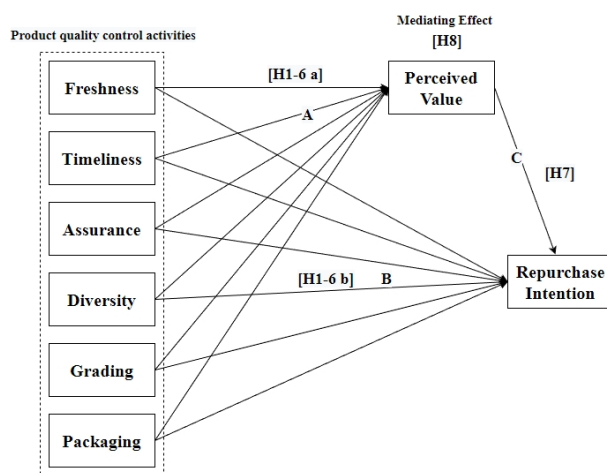


Figure 1: Research Model

3. Empirical Study

3.1. Method

3.1.1. Data Collection

Given the rapid development of e-commerce in China and the background that platforms such as Taobao, Jingdong, Meituan, and Ele have a large number of loyal customers, Chinese consumers were chosen as the target population of this study in order to explore the relationship between agricultural product quality activities and the willingness to make repeat purchases. Simultaneously, we employed a

convenient researcher-centric simple random sampling method for data collection, encompassing a diverse group of university students with a greater inclination towards online purchases. The questionnaire utilized in this study was distributed to Chinese consumers online through one of the most influential survey platforms in China-Wenjuanxing (<https://www.wjx.cn>). A total of 269 questionnaires were collected during a one-month period from May 16 to June 20, 2023. The selection criteria for the questionnaire included: 1) Prior experience purchasing agricultural products on e-commerce platforms, 2) Complete answers to all the questions, and 3) Honest and reliable responses. Finally, 269 valid responses were collected and utilized for the formal data analysis.

Table 1 shows the demographic information of the respondents. With regard to gender, 54.3% of the respondents were female ($n = 146$) and 45.7% were male ($n = 123$). The age is mainly concentrated between 20 to 29 years old, accounting for 59.5% ($n = 160$). In terms of academic qualifications, the majority of respondents were college students at 33.5% ($n = 90$) and college graduates at 33.8% ($n = 91$). In the sample population, the proportion of students is as high as 41.3% ($n = 111$), followed by staff at 26.8% ($n = 72$), and civil servants at 11.5% ($n = 31$). Income is concentrated at 2000-5000 yuan (39.8%) and <2000 yuan (29.7%). There were 201 respondents with more than 1 year of experience in purchasing agricultural products online, accounting for 74.8% of the total respondents. The concentrated frequency of purchasing agricultural products online per month is 1-4 times (60.6%) and 5-8 times (24.5%). Overall, the female sample was slightly higher than the male sample, but the overall sample was more uniform; the sample age distribution was relatively young; the overall level of education was high enough to fully understand the questionnaire content; the length of time buying produce online was long enough; and the monthly purchase frequency was high. To sum up, the respondents well represent the consumer groups who purchase agricultural products online, which lays a good foundation for subsequent research and analysis.

Table 1: Demographics

Items		Frequency	Percentage
Gender	Male	123	45.7
	Female	146	54.3
Age	<20	6	2.2
	20~29	160	59.5
	30~39	57	21.2
	40~49	30	11.2
	>49	16	5.9
Education	High school graduate or below	50	18.6
	Be at college	90	33.5

	College graduates	91	33.8
	Master degree or above	38	14.1
Occupation	Student	111	41.3
	Staff	72	26.8
	Civil Servant	31	11.5
	Housewife	19	7.1
	Self-employed Entrepreneurs	19	7.1
	Other	17	6.3
Income (Yuan)	<2000	80	29.7
	2000~5000	107	39.8
	5000~10000	65	24.2
	>10000	17	6.3
Experience (Years)	<1	68	25.3
	1~2	118	43.9
	2~4	63	23.4
	>4	20	7.4
Frequency (Months)	1~4	163	60.6
	5~8	66	24.5
	9~12	35	13
	>=13	5	1.9
Total		269	100

3.1.2. Measurement Development

In order to examine the relationship between quality control activities (freshness, timeliness, assurance, diversity, grading, and packaging) and perceived value, as well as repurchase intention in agro-product e-commerce, this study referred to survey instruments used in previous research and made modifications and additions to align with the research objectives (Xu & Chen, 2020; Uvet, 2020; Da et al., 2006; Ding et al., 2023; Nie & Zhu, 2021; Kwaku & Fan, 2020; Zhao et al., 2021; Patma et al., 2021; Ge, 2019). A total of 17 measurement items were included in the questionnaire. All measurements in this study were conducted using a 5-point Likert scale (1= strongly disagreeing ~ 5= strongly agreeing). In addition to the core constructs, the questionnaire also incorporated questions regarding consumer demographics such as gender, age, income level, education level, occupation, shopping experience, and frequency.

3.2. Analysis

3.2.1. Reliability and Validity

In this study, the measurement items of freshness, timeliness, assurance, diversity, grading, packaging, perceived value, and repurchase intention, which serve as key factors in this study, were developed using measurement items and variables that have been thoroughly validated in previous research reports. Necessary adjustments and additions were made to ensure their alignment with the

research objectives. To assess the reliability and validity of the measurements, exploratory factor analysis was conducted using IBM SPSS Version 25, and the KMO value and Bartlett's test of sphericity was calculated to evaluate the adequacy of the sampling. The KMO value of 0.94 and the Bartlett's test of sphericity ($\chi^2=6145.99$, $p=0.00$) show that the data is suitable for factor analysis. Reliability indicates whether the same measured value can be obtained by repeatedly measuring the same concept, confirming the accuracy and consistency of the concept to be measured. For reliability verification, the internal consistency of the items was confirmed with Cronbach's alpha coefficient (Hair et al., 2006). The results of the analysis show that all Cronbach's alpha values were above 0.8, confirming that the measured variables of this study had high consistency. Validity checks whether the concept to be measured is accurately measured. EFA was performed using the orthogonal Varimax rotation method to verify the conceptual validity of the measurement items of the measurement variables. We Specified to extract eight factors and used cutoff values related to moderate primary loadings (≥ 0.50), cross-loadings (≤ 0.38), and cross-loading differences (≥ 0.15) as criteria (Howard, 2023). Measurement items that did not meet any of these cutoff criteria were eliminated. The explanatory value of the independent variable's cumulative variance (the rolling sum of squares loading) was 68.77%. The reliability and validity verification results are shown in Table 2. In addition, this study employed bivariate correlation analysis to examine the relationship between the dependent variables and the independent variables. A correlation exceeding 0.80 indicates that there is significant overlap between the constructs, and the discriminant validity is relatively poor. In addition, this study used bivariate correlation analysis to investigate the relationship between the dependent and independent variables. The findings in Table 3 indicate that the highest correlation value is 0.69, below 0.8. Hence, the correlation among all variables in this study can be considered acceptable.

Table 2: Reliability and validity

Construct and Items	F.L.*	α **
(Freshness) ·The company conducts activities to maintain freshness. ·Employees of the company tries to keep freshness. ·The company has the capability to delivery fresh products. ·The company tries to keep freshness.	0.69 0.65 0.63 0.62	.85
(Timeliness) ·The company tries to shorten the time between purchase and delivery. ·The company deliver the goods on the date promised. ·The company chooses fast logistics. ·The company improves its timeliness in dealing with after-sales problems. ·The company has a fast delivery rate after orders.	0.77 0.72 0.71 0.68 0.63	

(Assurance) ·The company provides diverse ways for quality assurance. ·The company controls products quality to meet promised standards. ·The company provides quality assurance when needed. ·The company provides strict quality control standards.	0.76 0.66 0.64 0.57	.82		
(Diversity) ·Customer can find diverse products. ·The company offers a wide range of products. ·The company has a high diversity of products. ·The company tries to offer various products.	0.78 0.68 0.63 0.63		.84	
(Grading) ·The grade of the company's products are accurate. ·The company offers a variety of grade controls for products. ·The company offers products of different quality grades. ·The company provides detailed grading criteria for products. ·The company grades the products properly.	0.71 0.69 0.69 0.64 0.61			.89
(Packaging) ·Packing tries to improve the quality and reputation of products. ·Packaging keeps products from expected damage. ·Packaging tries to add value to products. ·Packaging protects products effectively. ·Packaging support freshness.	0.69 0.69 0.64 0.61 0.60			
(Perceived Value) ·The company's products are worth buying. ·I think the shopping experience is excellent. ·Provide valuable products. ·The company's products are cost-effective. ·A variety of values can be provided.	0.72 0.64 0.64 0.61 0.58	.86		
(Repurchase Intention) ·I would recommend it to others. ·That is the right choice to buy again. ·I am willing to continue using the service. ·I would like to buy it again from the company.	0.60 0.57 0.55 0.53		.82	

Note: * Factor Loading, ** Cronbach's α

3.2.2. Common Method Bias

Since this study collected data through the cross-sectional approach, common method bias might be an issue in the measurement model. Common method bias is a severe problem because systematic error variance appears within structural relationships and distorts the relationship between concepts (Hair et al., 2006). To mitigate the possibility of common method bias in this study, the respondents were explicitly informed that the survey was anonymous and solely for academic research purposes, aiming to encourage honest and accurate responses while reducing potential biases due to social expectations and response tendencies. Additionally, we conducted an unrotated exploratory factor analysis to perform Harman's single-factor test, assessing the presence of common method bias in the measurement model. All factors are grouped into a single factor using the principal axis factoring method and do not set any rotation method. The results reveal that a single constrained factor accounted for only 43.21% of the variance, significantly below the threshold of 50%. Therefore, the research data in this study does not exhibit severe common method bias (Podsakoff et al., 2003).

3.2.3. Hypothesis Test

In order to verify the hypotheses, this study conducted multiple regression analyses for each path. The relationship statistics showed that both R-squared and F-values were significant. Although the R-squared value is low, in social science research, consumer behavior is more complex and challenging to measure than physical processes. However, according to Falk and Miller (1992), the R² value is acceptable. To assess the adequacy of the regression model, the Durbin-Watson value, which measures the correlation between residuals, was examined. The obtained values of 1.45 to 2.01, close to the threshold of 2, indicated no significant correlation among residuals and suggested that there were no distortions in the regression analysis results or inflation of t-values and p-values. Therefore, the regression

model in this study was interpreted as appropriate, and it was confirmed that there were no multicollinearity issues. The tolerance limit is the variance inflation factor (VIF), and it was reciprocal and had a value of 0.1 or greater, showing no multicollinearity problems. Moreover, if VIF is less than 10, it is assumed that there is no multicollinearity. The analysis results showed that both tolerance and VIF values exhibited normal levels, indicating the absence of multicollinearity. According to the results of the multiple regression analysis presented in Table 4, freshness, timeliness, assurance, grading, and packaging significantly influenced perceived value, while freshness, timeliness, assurance, diversity, grading, and packaging had an impact on repurchase intention. Moreover, it was confirmed that perceived value positively influenced repurchase intention.

Table 3: Correlation Analysis

Construct	Mean	St. D	1	2	3	4	5	6	7	8
Freshness	3.99	0.73	1							
Timeliness	4.01	0.74	.54**	1						
Assurance	4.03	0.69	.56**	.53**	1					
Diversity	4.01	0.69	.63**	.58**	.54**	1				
Grading	3.91	0.76	.66**	.60**	.63**	.58**	1			
Packaging	4.08	0.66	.62**	.57**	.60**	.61**	.61**	1		
Perceived Value	4.08	0.67	.65**	.63**	.58**	.58**	.66**	.63**	1	
Repurchase Intention	4.02	0.68	.64**	.63**	.63**	.62**	.64**	.63**	.69**	1

Note: ** Correlation is significant at the 0.01 level (two-tailed)

Table 4: Hypotheses Testing Results

Hypothesis	Standard β	t	Test Result
H1a Freshness → Perceived Value	0.20	3.51***	Accept
H2a Timeliness → Perceived Value	0.22	4.15***	Accept
H3a Assurance → Perceived Value	0.09	1.66*	Accept
H4a Diversity → Perceived Value	0.04	0.84	Reject
H5a Grading → Perceived Value	0.20	3.31***	Accept
H6a Packaging → Perceived Value	0.16	2.90***	Accept
H1b Freshness → Repurchase Intention	0.17	2.97***	Accept
H2b Timeliness → Repurchase Intention	0.21	4.04***	Accept

H3b Assurance → Repurchase Intention	0.19	3.59***	Accept
H4b Diversity → Repurchase Intention	0.14	2.63***	Accept
H5b Grading → Repurchase Intention	0.11	1.88*	Accept
H6b Packaging → Repurchase Intention	0.12	2.10**	Accept
H7 Perceived Value → Repurchase Intention	0.69	15.95***	Accept
A: R ² = 0.60, F= 65.86(0.000), VIF= 1.92~2.43, Durbin-Watson= 1.45.			
B: R ² = 0.61, F= 69.37(0.000), VIF= 1.92~2.43, Durbin-Watson= 2.01.			
C: R ² = 0.48, F= 254.54(0.000), VIF= 1.00~1.00, Durbin-Watson= 1.96.			
Note: * p<0.1, ** p<0.05, *** p<0.01			

3.2.4. Mediating Effect

Mediating effect refers to the impact of a third variable or concept that intervenes between the independent and dependent variables. Complete mediation occurs when there is no direct effect between the independent and dependent variables, and only indirect effects are present. Complementary mediation suggests that the mediating variable's indirect and direct effects are significant.

The Sobel Test (Sobel, 1982) was employed to confirm the mediating effect in this study. The Sobel Test calculates

the standard error of the indirect effect using the standard error of the direct effect, then computes a result using the standard errors (Sobel, 1982). In this study, the Sobel Test estimates of the indirect effects were calculated using an online Sobel Test calculator developed by Preacher and Leonardelli (2001). The test results are presented in Table 5.

As shown in Table 5, freshness, timeliness, grading, and packaging significantly affect perceived value and repurchase intention (Z value=3.45***, 4.03***, 3.22***, 2.86***). This indicates that perceived value partially mediates the relationship between freshness, timeliness,

grading, packaging, and repurchase intention. Assurance significantly impacts perceived value and repurchase intention, but the Z value (1.63) is not significant. Therefore, perceived value does not mediate the relationship between assurance and repurchase intention. Diversity has no significant impact on perceived value, but it significantly impacts repurchase intention (Z value=0.83). Thus, perceived value does not mediate the relationship between diversity and repurchase intention, and diversity only directly affects repurchase intention.

Table 5: Mediating Effect

Path	Indirect effect	Z value	Test Result
Freshness → Perceived Value → Repurchase Intention	0.14	3.45***	Accept (Partial Mediation)
Timeliness → Perceived Value → Repurchase Intention	0.15	4.03***	Accept (Partial Mediation)
Assurance → Perceived Value → Repurchase Intention	0.06	1.63	Reject (Direct Effect)
Diversity → Perceived Value → Repurchase Intention	0.03	0.83	Reject (Direct Effect)
Grading → Perceived Value → Repurchase Intention	0.14	3.22***	Accept (Partial Mediation)
Packaging → Perceived Value → Repurchase Intention	0.11	2.86***	Accept (Partial Mediation)

Note: * p<0.1, ** p<0.05, *** p<0.01

4. Summary and Discussion

This study focuses on urban residents in China who are consumers of agricultural product e-commerce platforms, and aims to explore the internal mechanisms and influencing factors behind their repurchase behavior. This study fills the gap in the research field of consumer repurchase behavior of agricultural products on e-commerce platforms. Drawing from a comprehensive review of classical theoretical models and considering the unique characteristics of agricultural products, this paper constructs and validates a research model that investigates the impact of product quality control activities on consumers' repurchase intentions in the realm of agricultural product e-commerce. The research model incorporates perceived value as an intermediary factor influencing consumers' repurchase intentions. Recognizing that consumers seldom base their purchasing decisions on a single factor and are presented with multiple shopping options, this study extends beyond previous research that typically treats consumer purchasing behavior as an outcome variable. Instead, this study proposes to examine

consumer repurchase behavior as the outcome variable, thereby broadening the scope of research and offering a theoretical perspective for the academic field of consumer repurchase behavior in e-commerce. The conclusions of this study are as follows:

Firstly, of the agricultural product quality management activities, only product diversity does not exert a significant impact on consumers' perceived value. However, all other factors, namely freshness, assurance, grading, packaging, and timeliness, play a pivotal role in influencing consumers' perceived value. While the inclusion of a diverse range of agricultural products holds considerable appeal for businesses and directly influences customer repurchase intentions, it does not necessarily translate into a heightened perceived value for customers. Consequently, product diversity alone does not directly contribute to enhancing customers' perceived value. In the context of the uncertainties and risks associated with online shopping, businesses that prioritize offering agricultural products characterized by high levels of freshness, assurance, intact packaging, and prompt delivery enable customers to more effectively perceive the value of these products. Moreover, considering the challenges associated with storing agricultural products and the limited visibility of different product grades in traditional offline purchases, providing a variety of product grades aligns better with customer demands and serves to enhance overall customer perceived value.

Secondly, in terms of agricultural product quality control activities, all factors exert a direct influence on consumers' repurchase intentions. Taking a long-term perspective, the primary strategic focus for agricultural e-commerce businesses revolves around establishing core competencies on the supply side, emphasizing the provision of high-quality products to enhance overall competitiveness. Given the inherent challenge of the limited shelf life of agricultural products, companies engage in rigorous quality control measures to ensure products boast high freshness and assurance, thereby strengthening customer repurchase intentions. Furthermore, recognizing the perishable nature of agricultural products, companies enhance product preservation capabilities by refining packaging and ensuring timely delivery as part of their quality control activities, which contributes to heightened customer repurchase rates. Notably, compared to traditional offline shopping, online agricultural product companies have the flexibility to offer a diverse array of product types and various quality grades, catering to the diverse needs of different customer demographics and effectively bolstering customer repurchase intentions.

Thirdly, the dimensions of freshness, grading, packaging, and timeliness within the framework of product quality control activities exert a direct or indirect influence on

customers' repurchase intentions, with perceived value acting as a partial mediator in this relationship. Perceived value emerges as a significant factor with a direct impact on customers' intentions to repurchase. These research outcomes highlight that customers who perceive a high value in a product demonstrate an increased likelihood of engaging in repeat purchases on the same e-commerce platform. Additionally, these customers exhibit a greater propensity to share their positive purchasing experiences with others, thereby encouraging potential buyers to participate in similar buying behaviors. The pivotal role of perceived value in consumers' repurchase decision-making is evident, as it not only enhances their willingness to repurchase but also emphasizes that effective quality control measures implemented by businesses can significantly reduce decision-making costs, alleviate purchase concerns, and foster increased trust and reliance on the company.

5. Conclusions

The study's characteristics and innovations manifest in three primary facets. Firstly, while existing research has explored the determinants of consumers' repurchase intention in agricultural product e-commerce comprehensively, this study introduces and elucidates the concept of product quality control activities. It uniquely analyzes the relationship between these activities and consumers' purchase intentions in agricultural e-commerce from the enterprise perspective. Secondly, recognizing the distinctive features of quality control activities in agricultural e-commerce, this study identifies and examines six influential factors (freshness, assurance, diversity, grading, packaging, and timeliness), successfully confirming their impact on consumers' repurchase intentions. Lastly, by introducing customer perceived value as the mediating variable, the study investigates the mechanism through which product quality control activities influence consumers' repeat purchase behaviors. In conclusion, this research serves as a valuable reference for future investigations into agricultural product e-commerce and repurchase intention, offering a scientific foundation for e-commerce enterprises in the agricultural sector to enhance their repurchase rates. For agricultural product e-commerce enterprises, quality control activities are crucial, and it is necessary to comprehensively consider and implement aspects such as the inherent quality, classification, and delivery quality of products. Enterprises must establish a sound quality management system and establish quality standards and processes. The primary task is to ensure the inherent quality of products, develop different quality control standards and processes based on product classification and grading, and ensure that all types of

products meet the required quality requirements. At the same time, enterprises should also optimize agricultural products' circulation process and improve product delivery quality. By continuously improving product and service quality, we can meet the needs and expectations of customers and take multiple measures to promote the sound development of e-commerce of agricultural products and help rural revitalization.

While this study has yielded meaningful conclusions, its research capacity is not without limitations. First, This study used a simple random sampling method to collect data. The subjects were all Chinese, with the largest age group being those in their 20s (160 people, accounting for 59.5%). However, it is difficult to accurately summarize the research results and explain all cases due to the limitations of not considering age differences. Future research should use more precise sampling methods to collect data for different cultural backgrounds and age groups, considering regional characteristics. Second, this study collected data online, and the reliability of the measurement items in the exploratory factor analysis was relatively low. This may be due to the inaccuracies and the need for more depth in online surveys. To address this issue, future research needs to design more rigorous data collection processes to ensure the accuracy and reliability of the data. Additionally, Future research could incorporate data from diverse sources, such as online consumer reviews, to provide a more comprehensive understanding of customer sentiments. Traditional face-to-face surveys can obtain more comprehensive and in-depth results. Third, the study exclusively focused on consumers' repeat purchases of agricultural products through online channels, overlooking the significance of offline channels, the primary venues for fresh consumption. Future research endeavors should consider expanding the scope to encompass an omni-channel approach. Fourth, the factors influencing customers' repurchase intentions in agricultural e-commerce, including product quality, service quality, and social factors, warrant more in-depth exploration, particularly in the realm of service quality control. In addition, this study also identified the mediating role of perceived value as an intermediary variable between agricultural product quality control activities and customer repurchase intentions. Future research can choose other persuasive mediating variables based on actual conditions and further explore the mechanism between them. While this study concentrates on the activities of Chinese consumers on fresh food e-commerce platforms, the established research model invites further examination of cultural differences. Subsequent studies could validate and analyze the model across consumers from various countries or cultural backgrounds. Although this paper successfully derives conclusions through case studies, it acknowledges the existence of numerous issues yet to be explored and

discussed.

References

- Ali, A., & Bhasin, J. (2019). Understanding customer repurchase intention in e-commerce: Role of perceived price, delivery quality, and perceived value. *Jindal Journal of Business Research*, 8(2), 142-157.
- Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. *Psychology & marketing*, 20(2), 123-138.
- Anshu, K., Gaur, L., & Singh, G. (2022). Impact of customer experience on attitude and repurchase intention in online grocery retailing: A moderation mechanism of value Co-creation. *Journal of Retailing and Consumer Services*, 64, 102798.
- Apriadi, D., & Saputra, A. Y. (2017). E-Commerce berbasis marketplace dalam upaya mempersingkat distribusi penjualan hasil pertanian. *Jurnal RESTI (Rekayasa Sistem dan Teknologi Informatika)*, 1(2), 131-136.
- Berry, L. L., Parasuraman, A., & Zeithaml, V. A. (1994). Improving service quality in America: lessons learned. *Academy of Management Perspectives*, 8(2), 32-45.
- Bulut, Z. A. (2015). Determinants of repurchase intention in online shopping: A Turkish consumer's perspective. *International Journal of Business and Social Science*, 6(10), 55-63.
- Chatzoglou, P., Chatzoudes, D., Savvidou, A., Fotiadis, T., & Delias, P. (2022). Factors affecting repurchase intentions in retail shopping: An empirical study. *Heliyon*, 8(9), e10619.
- Chen, L., Li, Y. Q., & Liu, C. H. (2019). How airline service quality determines the quantity of repurchase intention-Mediate and moderate effects of brand quality and perceived value. *Journal of Air Transport Management*, 75, 185-197.
- Chiu, C. M., Chang, C. C., Cheng, H. L., & Fang, Y. H. (2009). Determinants of customer repurchase intention in online shopping. *Online information review*, 33(4), 761-784.
- Chou, S., Chen, C. W., & Lin, J. Y. (2015). Female Online Shoppers Examining The Mediating Roles of e – Satisfaction and e-Trust on e-Loyalty Development. *Internet Research*, 25(4), 542 – 561.
- Choi, Y. W., Lee, J. Y., Han, D. B., & Nayga Jr, R. M. (2018). Consumers' Valuation of Rice-Grade Labeling. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie*, 66(3), 511-531.
- Clements, M. D., Lazo, R. M., & Martin, S. K. (2008). Relationship connectors in NZ fresh produce supply chains. *British Food Journal*, 110(4/5), 346-360.
- Cuong, D. T. (2022). The relationship between product quality, brand image, purchase decision, and repurchase intention. *Proceedings of International Conference on Emerging Technologies and Intelligent Systems* (pp: 533-545). Springer International Publishing.
- Da Cruz, A. G., Cenci, S. A., & Maia, M. C. (2006). Quality assurance requirements in produce processing. *Trends in Food science & technology*, 17(8), 406-411.
- De Toni, D., Eberle, L., Larentis, F., & Milan, G. S. (2018). Antecedents of perceived value and repurchase intention of organic food. *Journal of Food Products Marketing*, 24(4), 456-475.
- Ding, C., Zhang, R., & Wu, X. (2023). The impact of product diversity and distribution networks on consumption expansion. *Journal of Business Research*, 161, 113833.
- Dlačić, J., Arslanagić, M., Kadić-Maglajlić, S., Marković, S., & Raspor, S. (2014). Exploring perceived service quality, perceived value, and repurchase intention in higher education using structural equation modelling. *Total Quality Management & Business Excellence*, 25(1-2), 141-157.
- Donthu, N., Kumar, S., Pandey, N., Pandey, N., & Mishra, A. (2021). Mapping the electronic word-of-mouth (eWOM) research: A systematic review and bibliometric analysis. *Journal of Business Research*, 135, 758-773.
- Dominici, A., Boncinelli, F., Gerini, F., & Marone, E. (2021). Determinants of online food purchasing: The impact of socio-demographic and situational factors. *Journal of Retailing and Consumer Services*, 60, 102473.
- Do, Q. H., Kim, T. Y., & Wang, X. (2023). Effects of logistics service quality and price fairness on customer repurchase intention: The moderating role of cross-border e-commerce experiences. *Journal of Retailing and Consumer Services*, 70, 103165.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. Akron, Ohio: University of Akron Press.
- Feng, L., Wang, W. C., Teng, J. T., & Cárdenas-Barrón, L. E. (2022). Pricing and lot-sizing decision for fresh goods when demand depends on unit price, displaying stocks and product age under generalized payments. *European Journal of Operational Research*, 296(3), 940-952.
- Fu, Y., Kim, J. H., Cho, S. E. (2022). Relationship between Product Characteristics and Customer Purchase Intention in Cross-Border Online Shopping: Focus on Chinese Consumers. *The Journals of Economics, Marketing & Management*, 10(6), 47-57.
- Ge, A. Y. (2019). The Repurchase Intention on Agricultural Products' Characteristics and Consumers' Characteristics of EC in China. *Journal of Distribution and Management Research*, 22(6), 21-34.
- Georgiou, M. N. (2009). E-commerce has a positive impact on economic growth: A panel data analysis for Western Europe. *SSRN Electronic Journal*. doi:10.2139/ssrn.1484687.
- Gonçalo, E. B. (2003). Certificação de sistemas de qualidade na indústria de laticínios. *Revista do Instituto de Laticínios Cândido Tostes*, 58(333), 9-14.
- Guo, J., Jin, S., Zhao, J., Wang, H., & Zhao, F. (2022). Has COVID-19 accelerated the E-commerce of agricultural products? Evidence from sales data of E-stores in China. *Food Policy*, 112, 102377.
- Guo, J., Hao, H., Wang, M., & Liu, Z. (2022). An empirical study on consumers' willingness to buy agricultural products online and its influencing factors. *Journal of Cleaner Production*, 336, 130403.
- Gu, W., Bao, P., & Lee, J. H. (2019). A Study on the continuance intention of O2O fresh agricultural products E-commerce. *The Journal of Industrial Distribution & Business*, 10(10), 35-44.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis*, (6th ed). New Jersey, Prentice Hall.
- Hellier, P. K., Geursen, G. M., Carr, R. A., & Rickard, J. A. (2003). Customer repurchase intention: A general structural equation model. *European journal of marketing*, 37(11/12), 1762-1800.

- Hoa, V. B., Seong, P. N., Cho, S. H., Kang, S. M., Kim, Y. S., Moon, S. S., Choi, Y. M., Kim, J. H., & Seol, K. H. (2019). Quality characteristics and flavor compounds of pork meat as a function of carcass quality grade. *Asian-Australasian journal of animal sciences*, 32(9), 1448-1457.
- Howard, M. C. (2023). A systematic literature review of exploratory factor analyses in management. *Journal of Business Research*, 164, 113969.
- Huo, Y., & Mu, H. (2017). Research on the Development of E-commerce Model of Agricultural Products. *13th Global Congress on Manufacturing and Management* (02040). MATEC Web of Conferences.
- Jaeger, S. R., Antúnez, L., & Ares, G. (2023). An exploration of what freshness in fruit means to consumers. *Food Research International*, 165, 112491.
- Jain, N. K., Gajjar, H., & Shah, B. J. (2021). Electronic logistics service quality and repurchase intention in e-tailing: Catalytic role of shopping satisfaction, payment options, gender and returning experience. *Journal of Retailing and Consumer Services*, 59, 102360.
- Jensen, H. R. (2001). Antecedents and consequences of consumer value assessments: implications for marketing strategy and future research. *Journal of Retailing and Consumer Services*, 8(6), 299-310.
- Jones, M. A., Mothersbaugh, D. L., & Beatty, S. E. (2000). Switching barriers and repurchase intentions in services. *Journal of retailing*, 76(2), 259-274.
- Juan, W., & Yadong, T. (2021). Reverse integration and optimisation of agricultural products E-commerce omnichannel supply chain under Internet technology. *Acta Agriculturae Scandinavica, Section B—Soil & Plant Science*, 71(7), 604-612.
- Kahn, B. K., Strong, D. M., & Wang, R. Y. (2002). Information quality benchmarks: product and service performance. *Communications of the ACM*, 45(4), 184-192.
- Karine, H. A. J. I. (2021). E-commerce development in rural and remote areas of BRICS countries. *Journal of Integrative Agriculture*, 20(4), 979-997.
- Keaveney, S. M., & Parthasarathy, M. (2001). Customer switching behavior in online services: An exploratory study of the role of selected attitudinal, behavioral, and demographic factors. *Journal of the academy of marketing science*, 29(4), 374-390.
- Khalifa, M., & Liu, V. (2007). Online consumer retention: contingent effects of online shopping habit and online shopping experience. *European Journal of Information Systems*, 16, 780-792.
- Kim, S., & Ha, G. (2021). The Effect of the Characteristics of Agri-Food Open Market on the Repurchase Intention: Focusing on the Moderating Effect of Innovation. *Asia-Pacific Journal of Business Venturing and Entrepreneurship*, 16(4), 153-165.
- Kim, C., Galliers, R. D., Shin, N., Ryoo, J. H., & Kim, J. (2012). Factors influencing Internet shopping value and customer repurchase intention. *Electronic commerce research and applications*, 11(4), 374-387.
- Koufteros, X., Droge, C., Heim, G., Massad, N., & Vickery, S. K. (2014). Encounter satisfaction in e-tailing: are the relationships of order fulfillment service quality with its antecedents and consequences moderated by historical satisfaction?. *Decision Sciences*, 45(1), 5-48.
- Kwaku, A. R., & Fan, Q. (2020). Effect of good product design and packaging on market value and the performance of agricultural products in the Ghanaian market. *Open Access Library Journal*, 7(9), 1-14.
- Law, C. C., Zhang, Y., & Gow, J. (2022). Airline service quality, customer satisfaction, and repurchase Intention: Laotian air passengers' perspective. *Case Studies on Transport Policy*, 10(2), 741-750.
- Lancaster, K. (1990). The Economics of Product Variety: A Survey. *Marketing Science*, 9(3), 189-206.
- Lee, Y. O., & Kim, M. (2008). The effect of logistics service quality on customer satisfaction and repurchase intention: focusing on company size as a moderator. *Journal of International Logistics and Trade*, 6(1), 55-73.
- Lennernäs, M., Fjellström, C., Becker, W., Giachetti, I., Schmitt, A., De Winter, A. M., & Kearney, M. (1997). Influences on food choice perceived to be important by nationally-representative samples of adults in the European Union. *European Journal of Clinical Nutrition*, 51, S8-S15.
- Liu, X., & Walsh, J. (2019). Study on development strategies of fresh agricultural products e-commerce in China. *International Business Research*, 12(8), 61-70.
- Liu, X., & Kao, Z. (2022). Research on influencing factors of customer satisfaction of e-commerce of characteristic agricultural products. *Procedia computer science*, 199, 1505-1512.
- Liu, X. (2021). Empirical study on B2C e-commerce logistics network optimisation of agricultural products. *Acta Agriculturae Scandinavica, Section B—Soil & Plant Science*, 71(5), 346-362.
- Liu, Y. Y., & Joo, S. H. (2023). A Study on the Effect of the Quality of Logistics Service on Customer Loyalty of Jingdong E-Commerce Platform in China. *Regional Industry Review*, 46(2), 255-276.
- Liu, M., Jia, W., Yan, W., & He, J. (2023). Factors influencing consumers' repurchase behavior on fresh food e-commerce platforms: An empirical study. *Advanced Engineering Informatics*, 56, 101936.
- Ligon, E. (2002). Quality and Grading Risk. In: Just, R.E., & Pope, R.D. (Eds), *A Comprehensive Assessment of the Role of Risk in U.S. Agriculture. Natural Resource Management and Policy*, vol 23 (pp. 353-369). Boston, MA: Springer.
- Luning, P. A., & Marcelis, W. J. (2006). A techno-managerial approach in food quality management research. *Trends in Food Science & Technology*, 17(7), 378-385.
- Li, F., Larimo, J., & Leonidou, L. C. (2021). Social media marketing strategy: definition, conceptualization, taxonomy, validation, and future agenda. *Journal of the Academy of Marketing Science*, 49(1), 51-70.
- Jiang, L. Q., & Zhao, Y. Y. (2016). The Effects of Corporate Hypocrisy on Consumer' s Purchase Intention—A Study based on the Theory of Planned Behavior. *Commercial Research*, 58(9), 174-180.
- Mahendrayanti, M., & Wardana, I. M. (2021). The effect of price perception, product quality, and service quality on repurchase intention. *American Journal of Humanities and Social Sciences Research*, 5(1), 182-188.

- Melián-González, S. (2022). Gig economy delivery services versus professional service companies: Consumers' perceptions of food-delivery services. *Technology in Society*, 69, 101969.
- Mentzer, J. T., Flint, D. J. & Kent, J. L. (1999). Developing a logistics service quality scale. *Journal of Business Logistics*, 20(1), 9-32.
- Murfield, M., Boone, C. A., Rutner, P., & Thomas, R. (2017). Investigating logistics service quality in omni-channel retailing. *International Journal of Physical Distribution & Logistics Management*, 47(4), 263-296.
- Naseem, S., Mohsin, M., Hui, W., Liyan, G., & Penglai, K. (2021). The investor psychology and stock market behavior during the initial era of COVID-19: a study of China, Japan, and the United States. *Frontiers in Psychology*, 12, 626934.
- Nie, W., Li, T., & Zhu, L. (2020). Market demand and government regulation for quality grading system of agricultural products in China. *Journal of Retailing and Consumer Services*, 56, 102134.
- Olaru, D., Purchase, S., & Peterson, N. (2008). From customer value to repurchase intentions and recommendations. *Journal of Business & Industrial Marketing*, 23(8), 554-565.
- Patma, T. S., Fienaningsih, N., Rahayu, K. S., & Artatanaya, I. G. L. S. (2021). Impact of information quality on customer perceived value, experience quality, and customer satisfaction from using Gofood Application. *Journal of Indonesian Economy and Business*, 36(1), 51-61.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of marketing*, 49(4), 41-50.
- Péneau, S., Hoehn, E., Roth, H. R., Escher, F., & Nuessli, J. (2006). Importance and consumer perception of freshness of apples. *Food quality and preference*, 17(1-2), 9-19.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Preacher, K. J., & Leonardelli, G. J. (2001). Calculation for the Sobel test. Retrieved January, 20, 2009.
- Rasaily, P., Shah, N. K., & Adhikari, B. (2023). Relationship between Service Quality and Customer Repurchase Intention in Cafés of Kathmandu Valley, Nepal. *Quest Journal of Management and Social Sciences*, 5(1), 14-27.
- Ranganathan, C., & Ganapathy, S. (2002). Key dimensions of business-to-consumer web sites. *Information & management*, 39(6), 457-465.
- Rundh, B. (2009). Packaging design: creating competitive advantage with product packaging. *British food journal*, 111(9), 988-1002.
- Shin, J. I., Chung, K. H., Oh, J. S., & Lee, C. W. (2013). The effect of site quality on repurchase intention in Internet shopping through mediating variables: The case of university students in South Korea. *International Journal of Information Management*, 33(3), 453-463.
- Sigurdsson, V., Larsen, N. M., Alemu, M. H., Gallogly, J. K., Menon, R. V., & Fagerström, A. (2020). Assisting sustainable food consumption: The effects of quality signals stemming from consumers and stores in online and physical grocery retailing. *Journal of Business Research*, 112, 458-471.
- Sobel, M. E. (1982). Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models. *Sociological Methodology*, 13, 290-312.
- Spreng, R. A., Harrell, G. D., & Mackoy, R. D. (1995). Service recovery: impact on satisfaction and intentions. *Journal of Services marketing*, 9(1), 15-23.
- Sullivan, Y. W., & Kim, D. J. (2018). Assessing the effects of consumers' product evaluations and trust on repurchase intention in e-commerce environments. *International Journal of Information Management*, 39, 199-219.
- Teng, C. C., & Lu, C. H. (2016). Organic food consumption in Taiwan: Motives, involvement, and purchase intention under the moderating role of uncertainty. *Appetite*, 105, 95-105.
- Tzeng, S. Y., Ertz, M., Jo, M. S., & Sarigöllü, E. (2021). Factors affecting customer satisfaction on online shopping holiday. *Marketing Intelligence & Planning*, 39(4), 516-532.
- Uvet, H. (2020). Importance of logistics service quality in customer satisfaction: An empirical study. *Operations and Supply Chain Management: An International Journal*, 13(1), 1-10.
- Van der Vorst, J. G., Van Dongen, S., Nouguié, S., & Hilhorst, R. (2002). E-business initiatives in food supply chains; definition and typology of electronic business models. *International Journal of Logistics*, 5(2), 119-138.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.
- Wang, X., & Zhang, J. (2020). Factors influencing Chinese online shopping distributions of fresh agricultural products. *Journal of Distribution Science*, 18(10), 53-64.
- Wu, L. Y., Chen, K. Y., Chen, P. Y., & Cheng, S. L. (2014). Perceived value, transaction cost, and repurchase-intention in online shopping: A relational exchange perspective. *Journal of Business Research*, 67(1), 2768-2776.
- Xu, X., & Chen, J. Y. (2020). Research on the Influence of E-commerce service quality of fresh Agricultural products on customer satisfaction. *2020 International Conference on Agricultural Science and Technology and Food Engineering: Vol 189 (01022)*. August 21-23, Changchun, China, E3S Web of Conferences.
- Xu, A., Wei, C., Zheng, M., Sun, L., & Tang, D. (2022). Influence of Perceived Value on Repurchase Intention of Green Agricultural Products: From the Perspective of Multi-Group Analysis. *Sustainability*, 14(22), 15451.
- Yu, W., Bian, W., Li, W., & Han, X. (2020). Influencing factors of fresh food online repurchase intention. *Proceedings of the Fourteenth International Conference on Management Science and Engineering Management: Volume 1 (pp. 757-770)*. July 30-August 2, Moldova. ICMSEM.
- Yu, X. (2018). Engel curve, farmer welfare and food consumption in 40 years of rural China. *China Agricultural Economic Review*, 10(1), 65-77.
- Yu, X., & Abler, D. (2009). The demand for food quality in rural China. *American Journal of Agricultural Economics*, 91(1), 57-69.
- Zeithaml, V. A. (2000). Service quality, profitability, and the economic worth of customers: what we know and what we need to learn. *Journal of the academy of marketing science*, 28, 67-85.

- Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of marketing*, 60(2), 31-46.
- Zhao, H., Yao, X., Liu, Z., & Yang, Q. (2021). Impact of pricing and product information on consumer buying behavior with customer satisfaction in a mediating role. *Frontiers in Psychology*, 12, 5016.
- Zhong, Y., Lai, I. K. W., Guo, F., & Tang, H. (2021). Research on government subsidy strategies for the development of agricultural products E-commerce. *Agriculture*, 11(11), 1152.
- Zusman, P. (1967). A theoretical basis for determination of grading and sorting schemes. *Journal of Farm Economics*, 49(1), 89-106.