

Pria	41	S3	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Pria	35	S1	Freelance	Sekitar dua kali dalam satu bulan
Pria	33	S1	Wirausaha	Satu kali dalam satu bulan
Pria	35	S2	Wirausaha	Sekitar dua kali dalam satu bulan
Pria	35	S1	Freelance	Hampir setiap hari
Wanita	31	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Pria	45	SMA	Freelance	Hampir setiap hari
Wanita	44	S1	Freelance	Satu kali dalam satu bulan
Pria	45	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Pria	32	S1	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	35	D3	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Wanita	22	SMA	Mahasiswa	Sekitar satu kali setiap dua atau tiga hari
Pria	20	SMA	Mahasiswa	Sekitar satu kali setiap dua atau tiga hari
Wanita	40	D3	Pegawai swasta	Sekitar dua kali dalam satu bulan
Wanita	23	S1	Wirausaha	Sekitar satu kali setiap dua atau tiga hari
Pria	30	S1	Pegawai negeri sipil	Satu kali dalam satu bulan
Pria	45	S1	Freelance	Sekitar satu kali setiap dua atau tiga hari
Wanita	44	S1	Freelance	Sekitar dua kali dalam satu bulan
Wanita	22	D3	Pegawai swasta	Sekitar dua kali dalam satu bulan
Wanita	44	D3	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	25	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari

Wanita	33	S2	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan
Pria	23	S1	Freelance	Sekitar dua kali dalam satu bulan
Pria	40	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	35	S1	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	35	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Wanita	25	S1	Pegawai swasta	Satu kali dalam satu bulan
Wanita	21	SMA	Mahasiswa	Sekitar satu kali setiap dua atau tiga hari
Wanita	26	D3	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	40	S2	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Wanita	32	S1	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan
Wanita	32	S1	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan
Wanita	42	S1	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	43	S1	Pegawai negeri sipil	Satu kali dalam satu bulan
Wanita	26	S1	Freelance	Sekitar dua kali dalam satu bulan
Wanita	45	S1	Pegawai negeri sipil	Hampir setiap hari
Pria	45	S2	Pegawai swasta	Sekitar satu kali setiap dua atau tiga hari
Wanita	20	SMA	Mahasiswa	Hampir setiap hari
Pria	34	S1	Freelance	Sekitar dua kali dalam satu bulan
Wanita	30	SMA	Wirausaha	Sekitar dua kali dalam satu bulan
Pria	40	S2	Freelance	Sekitar satu kali setiap dua atau tiga hari
Pria	35	S1	Wirausaha	Sekitar satu kali setiap dua atau tiga hari

Wanita	36	S1	Wirausaha	Hampir setiap hari
Pria	25	S1	Freelance	Sekitar dua kali dalam satu bulan
Wanita	27	S2	Wirausaha	Sekitar dua kali dalam satu bulan
Pria	36	S1	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan
Wanita	34	D3	Pegawai negeri sipil	Hampir setiap hari
Wanita	35	S2	Freelance	Hampir setiap hari
Pria	22	SMA	Mahasiswa	Sekitar satu kali setiap dua atau tiga hari
Pria	21	SMA	Mahasiswa	Sekitar satu kali setiap dua atau tiga hari
Wanita	20	SMA	Mahasiswa	Hampir setiap hari
Wanita	43	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	27	D3	Pegawai negeri sipil	Satu kali dalam satu bulan
Wanita	26	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	27	SMA	Wirausaha	Sekitar satu kali setiap dua atau tiga hari
Wanita	29	S2	Freelance	Sekitar satu kali setiap dua atau tiga hari
Pria	25	S1	Wirausaha	Hampir setiap hari
Pria	23	SMA	Freelance	Satu kali dalam satu bulan
Wanita	39	S1	Freelance	Hampir setiap hari
Pria	44	S3	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	31	S2	Wirausaha	Sekitar dua kali dalam satu bulan
Pria	34	S2	Freelance	Sekitar dua kali dalam satu bulan
Pria	35	S2	Freelance	Sekitar satu kali setiap dua atau tiga hari
Wanita	24	S1	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan

Pria	32	S1	Wirausaha	Satu kali dalam satu bulan
Pria	36	S1	Pegawai swasta	Satu kali dalam satu bulan
Pria	31	S1	Freelance	Sekitar satu kali setiap dua atau tiga hari
Wanita	36	SMA	Wirausaha	Sekitar satu kali setiap dua atau tiga hari
Pria	25	S1	Pegawai swasta	Sekitar satu kali setiap dua atau tiga hari
Wanita	26	S1	Freelance	Sekitar satu kali setiap dua atau tiga hari
Pria	44	S1	Pegawai swasta	Sekitar dua kali dalam satu bulan
Wanita	43	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	27	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Pria	23	S1	Pegawai swasta	Sekitar satu kali setiap dua atau tiga hari
Pria	34	S1	Pegawai swasta	Hampir setiap hari
Pria	34	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Pria	30	S2	Freelance	Sekitar dua kali dalam satu bulan
Pria	24	S1	Freelance	Sekitar dua kali dalam satu bulan
Wanita	42	S3	Freelance	Sekitar dua kali dalam satu bulan
Pria	23	SMA	Wirausaha	Sekitar dua kali dalam satu bulan
Pria	37	S2	Freelance	Satu kali dalam satu bulan
Wanita	37	D3	Freelance	Sekitar dua kali dalam satu bulan
Pria	38	S2	Wirausaha	Sekitar satu kali setiap dua atau tiga hari
Pria	44	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Pria	43	S1	Pegawai negeri sipil	Hampir setiap hari
Wanita	21	SMA	Mahasiswa	Sekitar satu kali setiap dua atau tiga hari

Wanita	30	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	41	S1	Wirausaha	Hampir setiap hari
Wanita	40	S1	Freelance	Sekitar dua kali dalam satu bulan
Wanita	23	S1	Wirausaha	Hampir setiap hari
Wanita	26	SMA	Freelance	Sekitar satu kali setiap dua atau tiga hari
Pria	28	S1	Wirausaha	Sekitar satu kali setiap dua atau tiga hari
Wanita	33	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Pria	35	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	22	S1	Wirausaha	Sekitar satu kali setiap dua atau tiga hari
Pria	41	D3	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	33	D3	Freelance	Sekitar satu kali setiap dua atau tiga hari
Wanita	31	S2	Wirausaha	Hampir setiap hari
Wanita	23	S1	Pegawai negeri sipil	Hampir setiap hari
Pria	25	D3	Pegawai swasta	Sekitar satu kali setiap dua atau tiga hari
Wanita	31	S2	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	28	D3	Freelance	Satu kali dalam satu bulan
Wanita	38	S1	Freelance	Sekitar dua kali dalam satu bulan
Wanita	32	S2	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan
Wanita	35	D3	Freelance	Sekitar satu kali setiap dua atau tiga hari
Wanita	26	S1	Freelance	Hampir setiap hari
Pria	35	S1	Pegawai swasta	Sekitar dua kali dalam satu bulan
Wanita	33	D3	Wirausaha	Satu kali dalam satu bulan
Wanita	23	S1	Pegawai swasta	Sekitar dua kali dalam satu bulan

Pria	44	S3	Pegawai swasta	Sekitar satu kali setiap dua atau tiga hari
Pria	42	S1	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan
Wanita	36	SMA	Pegawai negeri sipil	Hampir setiap hari
Pria	30	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Wanita	41	S1	Freelance	Satu kali dalam satu bulan
Wanita	37	S1	Wirausaha	Hampir setiap hari
Pria	41	S3	Pegawai negeri sipil	Hampir setiap hari
Wanita	22	SMA	Mahasiswa	Sekitar satu kali setiap dua atau tiga hari
Wanita	22	SMA	Mahasiswa	Hampir setiap hari
Pria	45	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Pria	34	S2	Pegawai negeri sipil	Hampir setiap hari
Pria	37	D3	Freelance	Hampir setiap hari
Wanita	28	S1	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	31	SMA	Freelance	Sekitar dua kali dalam satu bulan
Wanita	32	S1	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	30	D3	Freelance	Hampir setiap hari
Wanita	44	S3	Pegawai swasta	Sekitar satu kali setiap dua atau tiga hari
Wanita	29	SMA	Pegawai negeri sipil	Satu kali dalam satu bulan
Pria	38	D3	Pegawai negeri sipil	Hampir setiap hari
Wanita	37	S1	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari

Pria	35	SMA	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan
Wanita	20	SMA	Mahasiswa	Satu kali dalam satu bulan
Pria	26	S1	Wirausaha	Sekitar satu kali setiap dua atau tiga hari
Pria	32	D3	Pegawai swasta	Sekitar dua kali dalam satu bulan
Pria	35	SMA	Pegawai negeri sipil	Sekitar satu kali setiap dua atau tiga hari
Pria	45	S1	Pegawai negeri sipil	Sekitar dua kali dalam satu bulan
Pria	23	D3	Wirausaha	Sekitar satu kali setiap dua atau tiga hari
Wanita	35	S2	Wirausaha	Sekitar dua kali dalam satu bulan
Wanita	44	S1	Pegawai negeri sipil	Hampir setiap hari
Pria	22	S1	Pegawai swasta	Hampir setiap hari
Wanita	56thn	SMA	Wirausaha	Hampir setiap hari
Pria	52	S1	Pegawai swasta	Hampir setiap hari
Wanita	49	D3	Pegawai swasta	Hampir setiap hari

Lampiran 3 *Screen Shoot* Hasil *Smart PLS*



Outer Loadings

Matrix		Copy to Clipboard				
	CM_	DV	PE	PI	PQ	PV
CM1	0.859					
CM2	0.844					
CM3	0.867					
DV1		0.859				
DV2		0.844				
DV3		0.857				
PE1			0.840			
PE2			0.874			
PE3			0.830			
PI1				0.867		
PI2				0.852		
PI3				0.888		
PQ1					0.817	

R Square

Matrix	R Square	R Square Adjusted
PE	0.454	0.447
PI	0.443	0.432
PQ	0.564	0.558
PV	0.467	0.452

f Square

Matrix	f Square	Copy to Clipboard:				
	CM_	DV	PE	PI	PQ	PV
CM_			0.192		0.288	0.090
DV			0.144		0.233	0.007
PE				0.101		0.030
PI						
PQ				0.069		0.030
PV				0.022		

Construct Reliability and Validity

Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Average V
	Cronbach's Al...	rho_A	Composite Rel...	Average Varian...
CM_	0.820	0.832	0.892	0.734
DV	0.814	0.821	0.889	0.728
PE	0.805	0.808	0.885	0.720
PI	0.838	0.842	0.902	0.755
PQ	0.808	0.818	0.886	0.722
PV	0.838	0.840	0.903	0.755

Discriminant Validity

Fornell-Larcker Criteri...		Cross Loadings	Heterotrait-Monotrait R...	Heterotrait-Monotrait R...	Copy to Clipboard	
	CM_	DV	PE	PI	PQ	PV
CM_	0.857					
DV	0.599	0.853				
PE	0.613	0.592	0.848			
PI	0.581	0.588	0.606	0.869		
PQ	0.680	0.662	0.675	0.595	0.850	
PV	0.620	0.518	0.565	0.502	0.600	0.869

Discriminant Validity

Fornell-Larcker Criteri...		Cross Loadings		Heterotrait-Monotrait R...		Heterotrait-Monotrait R...		Copy to Clipboard	
	CM_	DV	PE	PI	PQ	PV			
CM_									
DV	0.720								
PE	0.744	0.717							
PI	0.696	0.705	0.733						
PQ	0.825	0.805	0.833	0.717					
PV	0.735	0.620	0.684	0.599	0.726				

Path Coefficients

	Mean, STDEV, T-Values, P-Val...	Confidence Intervals	Confidence Intervals Bias Co...	Samples	
	Original Sampl...	Sample Mean (...)	Standard Devia...	T Statistics (IO/...	P Values
CM_ -> PE	0.404	0.400	0.099	4.090	0.000
CM_ -> PQ	0.442	0.437	0.093	4.755	0.000
CM_ -> PV	0.319	0.324	0.084	3.810	0.000
DV -> PE	0.350	0.351	0.101	3.458	0.001
DV -> PQ	0.398	0.402	0.090	4.408	0.000
DV -> PV	0.085	0.084	0.072	1.174	0.240
PE -> PI	0.334	0.335	0.086	3.867	0.000
PE -> PV	0.181	0.179	0.079	2.306	0.021
PQ -> PI	0.284	0.277	0.094	3.009	0.003
PQ -> PV	0.204	0.198	0.095	2.142	0.032
PV -> PI	0.143	0.146	0.080	1.798	0.072

LV Prediction Summary

PLS		PLS Prediction Error (Descriptives)		PLS Predictions (Descriptives)	
		RMSE		MAE	Q ² _predict
PE		0.777		0.557	0.422
PI		0.802		0.545	0.384
PQ		0.696		0.512	0.539
PV		0.806		0.535	0.387



How Do Display Cues Affect Purchase Intention in the Live-Streaming Context: The Moderating Role of Perceived Value

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Abstract. An increasing amount of evidence indicates that product display cues are crucial in consumers' online purchasing behavior. As a special category of online sales, agricultural products have their characteristics and needs that distinguish them from other products. The current body of research examining the influence of agricultural product presentation in live-streaming on individuals' purchase intention is rather limited. This study explored the display cues of agricultural products in live-streaming Drawing on the Stimulus-Organism-Response (S-O-R) model and integrating the Perceived Value Theory, to analyze the factors affecting consumers' perceived benefits and purchase intention. The outcomes revealed that display visibility and cue multiplicity in agricultural products live-streaming offer significant advantages in terms of perceived benefits. The variables of display visibility and cue multiplicity jointly augmented consumers' perceived quality, while cue multiplicity had no discernible impact on consumers' perceived entertainment. Furthermore, consumers' purchase intentions were strengthened by perceived quality, perceived entertainment, and perceived value. This study will broaden the application scope of the S-O-R model and the perceived value theory. It will help us better understand how product display cues affect purchase intentions during live-streaming, and provide theoretical backing and practical advice for successful online marketing.

Keywords: Display cues · Agricultural products · Purchase intention · Live-streaming · Perceived value

1 Introduction

In the current context of deepening digitization and informatization, live-streaming e-commerce combines the features of traditional e-commerce with streaming media technology, has emerged. It offers consumers with a more immersive and interactive experience with visibility, interactivity, and entertainment. In contrast to traditional e-commerce, live-streaming e-commerce provides consumers with product displays in real-time videos. It is able to present more detailed product information through streamer interaction and consumer group interaction, which quickly enhances consumers' knowledge of the products [48]. Based on the 52nd Statistical Report on China's Internet

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Development, by June 2023, the number of live-streaming users in China reached 765 million. This represented an increment of 14.74 million compared to December 2022 and accounted for 71.0% of the total Internet user population, showing its strong market prospects.

Unlike general consumer goods and services, agricultural products are non-standardized, and traditional sales of agricultural products face many problems, such as a single market channel, asymmetric information, and too many intermediate links. In the face of increasing consumer demand for high product quality, quality origin traceability and flexible purchasing methods, the traditional sales model has made it challenging to satisfy consumers' various demands. Live-streaming of agricultural products realizes the direct docking between agricultural producers and consumers, minimize the gap between supply and demand, and improve the efficiency and transparency of agricultural sales. Despite the various advantages of agricultural products live-streaming, and the fact that it is in the stage of booming development, improving consumer satisfaction and increasing the conversion rate is still a significant challenge for retailers. In addition, compared with other live-streaming, agricultural e-commerce has the public welfare of helping farmers, and the consumer decision-making scene is given a specific social nature. Therefore, in the agricultural products live-streaming shopping, consumers expect to reduce consumer decision-making bias and realize satisfactory consumption during the purchase process while achieving the goal of helping agriculture and other social values.

As agricultural product live-streaming e-commerce becomes increasingly popular, academics have launched many studies on enhancing live-streaming strategies to help farmers from various perspectives, such as the current status of agricultural products live-streaming, scene characteristics, consumer trust, and marketing system. In macro research, based on scene marketing related theories, scholars have put forward feasible countermeasures, such as optimizing the quality of agricultural products, live scene, content, and data, to enhance the scene-based marketing strategy for agricultural products [1]. In terms of consumer trust, the information exchange mechanism and information transfer asymmetry between streamers and consumers, makes it possible to provide quality endorsement of agricultural products through the reputation of officials' streamers and to show consumers the supply chain of agricultural products through diversified information [38]. In the context of live-streaming e-commerce marketing characteristics, it constructs the marketing process and mode of agricultural products under the promotion of live-streaming e-commerce. It puts forward optimization strategies in terms of reconstructing the live-streaming marketing system, planning the overall marketing scheme and constructing the live-streaming marketing ecosystem [11]. On this basis, more in-depth research has also been carried out on the agricultural products live-streaming room, such as the situational interaction in the live-streaming environment, the on-site arrangement in the spatial scene, the richness of the product introduction, the emotional arousal of the streamer traits and the social proximity of the scenario atmosphere, and many other factors can exert varying degrees of impact on the effect of agricultural products live-streaming. Regarding the impact of streamer characteristics on consumers' intentions, streamer popularity, professionalism, authenticity, interactivity, individual attributes, etc., can all influence consumers' purchase intentions.



However, with the depth of the research, the current live-streaming of agricultural products still has certain problems. First, in the context of e-commerce live-streaming, the streamer occupies an absolutely dominant position, which has a pivotal and direct impact on the quality of live-streaming, product conversion rate and user stickiness. Some live-streaming have exaggerated propaganda, low standardization and low consumer trust. This requires e-commerce streamers to have the ability to live-streaming expertise, providing consumers with sufficient and adequate information [35]. Moreover, in the current agricultural products live-streaming situation, with a professional background in e-commerce, live-streaming talent is relatively scarce, and there need for a practical ability to quickly learn the live strategy to streamer professional live training to enhance live skills and professional quality [30]. Secondly, the important advantage of live-streaming as one type of e-commerce lies in the real-time information display and interaction, which brings consumers intuitive, accurate display and sufficient information about commodity-related cues [17]. At present, the theoretical and practical research on how problems such as unclear expression of product traceability, low authenticity, unintuitive product display, and too little commodity-related cue information of live agricultural products affect consumers' consumption experience and purchasing decision is still insufficient. The lack of theoretical models for the traits of agricultural products and the guidance of the display skills and display strategies in practice affects the conversion of agricultural products into consumption to a certain extent.

Based on this, this study focuses on consumers' explicit demand for product quality and consumption experience, looks at the product display cues of agricultural products live-streaming, and explores the mechanism of the influence of product display attributes of agricultural products live-streaming on consumers' purchase intentions by integrating the S-O-R model and the perceived value theory, with the mediation of consumers' perceived value, and enhances the merchants' understanding of the consumers. The study enriches the results of theoretical research on agricultural products live-streaming, and guides practical strategies. Therefore, in this study, we attempt to address the following research questions:

RQ1: How do product presentation attributes affect consumer-perceived value in agricultural products live-streaming?

RQ2: How does consumer-perceived value affect purchase intention in agricultural products live-streaming?

RQ3: How does perceived value mediate between product presentation attributes and purchase intention?

By solving the above three problems, our study can enrich the theoretical model of agricultural products live-streaming e-commerce research, explore the optimization path through an in-depth analysis of the traits of agricultural products live-streaming, explore the breakthrough point of agricultural products live-streaming at the level of product display, put forward a more targeted strategy of agricultural products live-streaming, and offer theoretical backing and practical direction for the effective online marketing of agricultural products.

2 Literature Review and Theoretical Background

2.1 Live-Streaming E-Commerce of Agricultural Products

Recently, the expansion of the live-streaming market and the fast advancement of live-streaming technology have led to a new business model, live e-commerce, in which streamers present in real-time via video to discuss and respond to viewers' questions [55], and sell goods and services directly to their customers through the online visual media. Compared to traditional e-commerce, it provides consumers with a highly interactive and novel shopping experience, which generates more significant incentives to drive consumer behavior. The brisk growth of live e-commerce also provides new sales channels for traditional industries such as agricultural products.

Compared with other product categories, consumers are becoming more circumspect when it comes to purchasing agricultural products. The traditional sales model has high communication costs, and consumers' concerns about product quality and product sources are not conducive to transactions. Agricultural products e-commerce live-streaming combines the strengths of multiple media, provides consumers with more prosperous and more vivid stimulus cues, realizes the optimization from static pictures to real-time dynamic video, highly visual interface from multiple senses to increase the consumer's sense of immersion and sense of presence, the streamer can also communicate with consumers about how they feel and what the product looks or smells which affects the consumer's product price, quality, characteristics and other perception. In addition, for consumers of agricultural products, the multi-dimensional dynamic information display capability of the agricultural live platform can transmit the growing environment, production process, product characteristics and other information of agricultural products to the audience in a clipless manner, presenting a "what you see is what you get" offline shopping environment, and enhancing the consumer's sense of trust. Compared with traditional e-commerce, rely on customer service response and user feedback after the interaction mode, live-streaming e-commerce supports consumers and streamers and viewers' real-time interaction; information feedback is more rapid, accurate, and personalized and can effectively help consumers make a purchase decision. The real-time intervention of the streamer can help consumers obtain product information more quickly and efficiently.

For the live-streaming of agricultural products, the existing research mainly researches the product supply chain model, development model and consumers' purchase intentions. The research on product supply chain and development model is relatively macroscopic. In contrast, the specific refinement to the optimization strategy research on live-streaming, the analysis of consumers' purchase intentions can effectively understand the factors affecting consumer experience and decision-making to improve the quality of live-streaming. Researchers have discussed the effect of e-commerce streamer characteristics on consumers' purchase intentions, such as credibility, interactivity and professionalism. However, considering the unique attributes of agricultural products, the purchasing decisions made by consumers hinge not merely on the ultimate quality of the product, but also on the online selling scenario, the environment, and the presentation format [50]. Therefore, further clarification is needed on how agricultural product

presentation cues influence consumers' purchase intention and consumers' perceptual experience in agricultural product live-streaming rooms.

2.2 The Stimulus-Organism-Response Model

In order to conduct a scientific and systematic research on the influencing factors and mechanisms of agricultural consumers' purchase intention, this paper adopts the Stimulus-Organism-Response (S-O-R) theoretical model. Psychology which was first proposed by Mehrabian and Russell in 1974 [30]. The model is effective in explaining the influence of the external environment on human behavior and is also extensively applied in environmental psychology in retail environments [14]. Where S stands for the stimulus of the external environment (Stimulus), O stands for the organism with cognition (Organism) and R stands for the action-wise and psychological response (Response).

In the shopping environment, stimulus variables belong to the external influences that cause changes in consumers' emotions and cognition, and are composed of marketing variables and other environmental factors; organism variables are composed of individuals' perceptual, mental, and thinking activities and include both emotional and cognitive dimensions, in which perceived entertainment, satisfaction, etc. in the realm of emotion, while perceived benefits, etc. belong to the category of cognition; response variables are consumers' under the influence of various stimuli. The final output of the psychological or behavioral response, such as direct order, add to cart and other purchase decisions [12].

With the development of marketing science, the S-O-R model has been widely used with different scenarios such as retailing and online shopping, and is also applicable to the live-streaming context. There have been some research results to explore the mechanism of the external environment stimulating individuals to generate purchase intention internally in the context of agricultural products live-streaming e-commerce. From the aspect of live atmosphere, the live interactive atmosphere and supportive atmosphere in the agricultural products live-streaming e-commerce context have a significant positive effect on consumers' perceived trust, perceived entertainment and perceived usefulness, which in turn influences consumers' purchase intentions; from the perspective of consumer cognition, the normality, authenticity, visibility, quality value, public welfare, etc., presented in the agricultural products live-streaming room can augment consumers' perceived value and perceived trust, and it is conducive to improving consumers' purchase intentions and subsequent repeat purchase intentions; from the perspective of streamer attributes, when consumers face the streamer with high trust, high interactive attributes and strong professional ability, their emotional experience when watching live-streaming e-commerce to help agricultural products will also be enhanced, which will improve their purchase intentions and viewing viscosity.

At present, the application of the S-O-R model to analyze specific product categories, such as agricultural products with unique characteristics, etc., is less research. In the study of agricultural products live-streaming lack of live agricultural products information display attributes on consumer experience and purchase intentions of in-depth research.

2.3 Perceived Value Theory

Perceived Value Theory originated in business research and was first proposed by Zeithaml in 1988 [43]. The model of Perceived Value Theory concludes that perceived value represents a customer's comprehensive assessment of the utility of a product or service, which is founded on the perceived benefits and costs, so that increasing the perceived value of a customer can be achieved by either increasing the perceived benefits or decreasing the perceived costs of the customer.

The model proposed by Zeithaml [44] divides elements into three levels: low-level attributes, perception of low-level attributes and high-level attributes. The theoretical model of perceived value in the aspect of e-commerce live-streaming consists of four levels: low-level attributes, low-level perception, high-level cognitive attributes, and purchase intention/decision-making, in which the low-level attributes are the attributes of the live-streaming room; the low-level perception is the consumer's perception of the attributes of the live-streaming room; the high-level cognitive attributes include the consumer's perceived benefits and perceived costs, and the combination of both of these attributes is the perceived value; this ultimately affects the purchase intentions.

The key concepts in the perceived value theoretical model include perceived benefits, perceived payments and perceived value. Among these, perceived benefits are the positive effects or benefits that consumer feel when using or owning a product or service. These advantages can be useful (e.g., the utility and performance of the product), emotional (e.g., the pleasure and satisfaction that comes from using the product), and social (e.g., the social status and identity that comes from using the product). Consumers consider these benefits together in the decision-making process to assess whether the product or service can fulfil their demands and expectations. Perceived payments refer to the various costs or prices consumers must pay to acquire a product or service. These payments include not only monetary costs (the price of the product) but also a variety of non-monetary costs, such as time costs (the time it takes to buy and use the product), psychological costs (the psychological pressure and uncertainty in the decision-making process), and effort costs (the cost of the effort and learning required to use the product), and so on. Perceived value is a consumer's overall evaluation of a product or service after considering perceived benefits and perceived payments. After weighing the benefits and payments, it reflects the consumer's subjective value perception after weighing the benefits and payments. In e-commerce live-streaming scenarios, perceived value directly affects consumers' purchasing decisions and satisfaction and is an important basis for merchants to develop live-streaming marketing strategies.

The perceived value theoretical model has been used extensively in online shopping and live e-commerce (as shown in the Table 1). There are specific research results to explore how the attributes of the live-streaming room in the context of live e-commerce affect the perceived value, which in turn influences the customer's intention to participate or purchase. From the aspect of streamer features, when consumers face highly credible, interactive, professional streamers, they will have trust in them, so that the emotional experience of watching live e-commerce to help agricultural products will be enhanced, and their purchase intentions and viewing viscosity will be improved. From the perspective of product display, product knowledge, product display, product and background matching degree in the live e-commerce context plays a crucial positive role in affecting

consumer perceived entertainment, and perceived value, which in turn influences consumer purchase intention. From the perspective of consumer perception, the attributes of live-streaming can improve consumers' perceived usefulness, perceived entertainment and symbolic value, which is conducive to increasing consumers' purchase intentions and subsequent repeat purchase intentions.

For the agricultural products live-streaming, consumers' experience of functionality and emotion in perceived benefits is the most prominent, i.e., perceived quality and perceived entertainment are considered. Therefore, this study focuses on perceived quality and perceived entertainment in perceived benefits and combines the comprehensive analysis of perceived value as a cognitive organism (O) to analyze the influence mechanism of the display attributes of agricultural products live-streaming on consumers' purchase intentions mediated by consumers' perceived value.

Table 1. Related Research Variables of Perceived Value Theory.

Main influence factors	Authors	Main Research Variables
Characteristics of live streamers	Meng & Lin (2023)	Professionalism, Credibility, Attractiveness, Interactivity, Perceived Value, Trust, Satisfaction
	Zhou & Huang (2023)	Professionalism, Attractiveness, Interactivity, Image Matching, Perceived Practical Value, Perceived Emotional Value
	Lee & Chen (2021)	Attractiveness, Trustworthiness, Expertise, Perceived Enjoyment, Perceived Usefulness
Product display	Zhang (2023)	Product Showcase, Time Pressure
	Shang, Ma & Wang (2023)	Product-background fit, Perceived pleasure, Purchase intention
	Wongkitrungrueng et al. (2020)	Perceived usefulness value, perceived entertainment value, perceived symbolic value, trust in product/streamer

3 Research Model and Hypotheses

The research model of this study is presented in Fig. 1. Drawing on the S-O-R model and perceived value theory, the product display information (including display visibility and cue multiplicity) is regarded as the external stimulus S; consumers' perceived gain is taken as the organism O, including perceived quality, perceived entertainment, and perceived value. Drawing on the S-O-R model and perceived value theory, the product

display information (including display visibility and cue multiplicity) is taken as the external stimulus *S*; consumers' perceived gain is taken as the organism *O*, including perceived quality, perceived entertainment, and perceived value; and purchase intention is taken as the response *R*. In addition, the gender, income, age, and education background of consumers are considered as control variables.

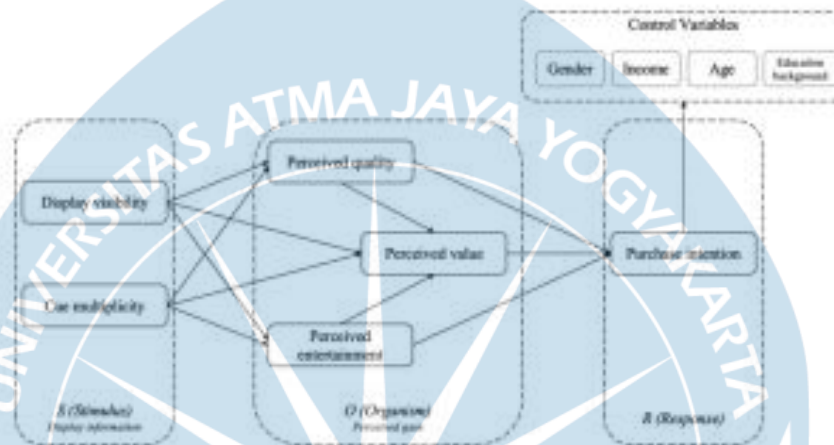


Fig. 1. The research models.

3.1 Relationship Between Product Display Information and Consumers' Perceptions

A comprehensive display of products is required in the agricultural live-streaming context to provide consumers with comprehensive visualized information and multi-sensory cues, so this study selects display visualization and cue multiplicity for the agricultural display information.

Display visibility in live e-commerce refers to the degree of visual perception of the consumer of the product and the degree of visualization of the product information when watching the live-streaming, including the interactivity, immersion, and conception of the live-streaming [2]. Live-streaming through the form of real-time video allows consumers to have a more intuitive understanding of the commodity, the streamer through the direct display of commodity details and with multifaceted explanations to enhance the consumer's awareness of the product and the immersion in the process of watching the live-streaming [19]. In the agricultural products e-commerce live-streaming, the streamer's display and introduction of an agricultural product can be carried out from various aspects, such as: combining with the edible scene using the corresponding utensils to contain the food for display, describing the flavor of the food such as the aroma and the taste of the food when tasting, and displaying the details of the appearance of the goods in detail, and so on. According to the theory of mind flow, when consumers' attention is focused on one thing, its perceived value will be enhanced [13].

Compared with traditional online shopping, live-streaming can bring consumers rich three-dimensional visibility and provide diversified display methods, thus significantly improving the perceived quality of the product and the perceived entertainment in the viewing.

Cue multiplicity refers to using multiple cues or factors to explain a phenomenon or relationship in a study. In consumer behavior research, cue multiplicity refers to the diversity of information that consumers need to face when making online purchases, i.e., the information from multiple channels and sources that consumers are subjected to when searching, browsing, and learning about a product [21]. Consumers will have difficulty in making decisions when these conflicting information and evaluations of a product from different websites, platforms, and social media, and when these information about a product from multiple perspectives and sources all point positively to the product's strengths, it will improve the consumer's perceptions of the product.

In the context of agricultural products live-streaming e-commerce, the delivery of cue information has channel diversity, and consumers can not only understand the product information through the text and pictures in the product detail page but also combine the verbal and non-verbal information of the streamer [43]. Among them, the streamer's introduction of an agricultural product can often be carried out from multiple aspects, such as the cultural knowledge of the source region of the agricultural product, the planting and growing information of the agricultural product, and the various processing and eating methods of the agricultural product, and so on. These multiple aspects of information and cues related to agricultural products will affect the consumer's understanding of the product and the perception of the atmosphere of the live-streaming room. The multifaceted information of commodities in the same scene can complement each other, thus forming a strong explanation of commodities, bringing multifaceted and effective information stimulation to consumers, improving their perception of commodities [30], and positively affecting perceived entertainment.

Based on this, the following assumptions are made:

H1a. Display visibility has positive influences on consumers' perceived quality.

H1b. Display visibility has positive influences on consumers' perceived entertainment.

H1c. Display visibility has positive influences on consumers' perceived value.

H2a. Cue multiplicity has positive influences on consumers' perceived quality.

H2b. Cue multiplicity has positive influences on consumers' perceived entertainment.

H2c. Cue multiplicity has positive influences on consumers' perceived value.

3.2 Consumers' Perceptions

Agricultural products are distinguished from other product categories by their non-standardization and hierarchical quality. Consumers need to confirm the quality of the product to obtain a positive experience of consumption. The streamer will provide support for consumers to confirm the quality of the product by introducing the relevant and practical information about each stage of the product for consumers to reduce the possibility of poor viewing and consumption experience caused by consumers' concern and distrust of the quality of the product.

Entertainment is the pleasure objectively felt by an individual while performing a particular behavior or activity [36]. Research has shown that entertainment marketing activities (e.g., publishing entertainment content) can influence consumer attitudes and behaviors [39]. In agricultural products live-streaming, streamers will utilize interesting and helpful technologies (e.g., virtual reality) to demonstrate products, etc. In addition, some streamers will use humor to make communication with their customers and make them feel cozy and happy in the live-streaming. Since the streamers will present information about the agricultural products in an entertainment interaction, the consumers will get some degree of utilitarian value in the entertainment interaction.

Based on this, the following hypotheses were put forward for this study.

H3. Perceived quality has positive influences on perceived value.

H4. Perceived entertainment has positive influences on perceived value.

3.3 Relationship Between Consumers' Perceptions and Purchase Intention

In agricultural live e-commerce, perceived quality indicates to the degree to which the consumer, through the description, characteristics, and price of the goods shown in the live-streaming room and the actual situation, including the quality of the goods, features, size, and other aspects of the product quality judgment. Compared with traditional online shopping, live e-commerce can present the goods in an accurate and complete way, with a high degree of product reproduction to consumers. At the same time, the live-streaming of the streamer's real-time introduction, interaction, and other behaviors will also enhance the consumer's perception and confirmation of product quality [56]. In the live-streaming of agricultural products e-commerce, the streamer's introduction of the authenticity of a commodity can be carried out in many ways, such as introducing the source information of agricultural products, demonstrating the freshness of agricultural products, and making reliable quality assurance and commitment.

The perceived quality of agricultural products directly influences consumers' purchase decisions and consumption experience [30]. On the one hand, if during the live-streaming, consumers find that the streamer or the product detail page conveys product information that is inconsistent with reality, they will have a sense of mistrust, lowering their trust in the streamer and the product, which in turn affects the purchase intention; on the other hand, if consumers find that the product is inconsistent with the description in the live-streaming after they have purchased it, it will lead to a decline in consumer satisfaction, an increase in the rate of return, and the formation of a negative word of mouth about the e-commerce platform and the streamer. When consumers are more positive about the perceived quality of agricultural products, they are more likely to recognize the live-streaming and the streamer. They are more willing to immerse themselves in the entertainment atmosphere of the live-streaming [15].

Consumer-perceived entertainment refers to a sense of mental, psychological satisfaction generated in the process of consumers experiencing a product or service, emphasizing the pleasure brought by this experience process itself rather than just the gains brought by the results. When consumers watch e-commerce live-streaming, their goal is not only to buy the goods they want at a low price in the center of the live-streaming room but also to obtain a pleasurable viewing and shopping experience and emotional value. In live e-commerce, consumers' perceived entertainment will receive the influence of

streamer, pop-up area comments, other consumers' interactive behavior, and a variety of interactive games such as live red packets, etc. A variety of forms of product introduction, the lively and active atmosphere of the pop-up area, the positive interaction of other viewers to grab the purchase behavior and high frequency, high participation in the grabbing of the red packets, etc., will improve the perceived entertainment of the consumers while watching e-commerce live-streaming. This kind of interesting and diverse live content is often more able to attract the attention of consumers and enhance their pleasure, which in turn increases the length of time consumers watch the live-streaming, improves the exposure rate of products, and thus promotes the purchase intention.

Research has demonstrated that perceived entertainment plays a crucial role in consumer decision-making and purchasing processes, influencing consumers' purchase intentions and continued usage behavior. Koo & Ju [23] demonstrated that consumers' perceived entertainment during the experience process significantly influences their purchase intentions. In addition, other scholars have proved that consumers' perceived entertainment has positive influences on their satisfaction with the entire purchasing behavior, increasing their intentions to make a second purchase and their trust in the merchant after completing the transaction chain [20].

Perceived value represents a consumer's comprehensive assessment of a product or service's utility during the acquisition process. It comes from the consumer's consideration of both the benefits obtained and the costs incurred due to the purchase behavior [53]. Sweeney and Soutar [44] suggest that perceived value is the increasing effect of social self-concept brought by a consumer when purchasing a product with exceptional social value. In the live-streaming scenario of agricultural products, the perceived value of consumers can be divided into two aspects: one is the purchase of original, high-quality, original and high-quality agricultural products at a lower price, and the other is the psychological fulfillment of consumer poverty alleviation that consumers get from purchasing agricultural products to contribute to the cause of poverty alleviation in poverty-stricken areas, and so on. These together constitute the perceived value of agricultural products to live consumers.

The assessment of perceived value is a dynamic process which is influenced by consumers' personal characteristics, purchasing environment, and other factors, thus affecting their purchasing intentions and behavior. Jin, Lee & Lee [22] stated that consumers' perceived value of an important determinants of consumers' purchasing decisions.

Based on this, the following assumptions are made:

H5. Perceived quality has positively influence on consumers' purchase intentions.

H6. Perceived value has positively influence on consumers' purchase intentions.

H7. Perceived entertainment has positively influence on consumers' purchase intentions.

4 Methodology

4.1 Variables and Measurements

This study empirically tests the proposed theoretical model using a questionnaire based on the methodology of previous studies. By reviewing previous studies, we found a validation scale corresponding to the model variables proposed in this paper and validated

by scholars. We adjusted and modified this to create a scale that is more in line with the characteristics of agricultural products live-streaming. The measure of display visibility draws on Liu et al. [29] with three question items; the measure of cue multiplicity draws on Vickery et al. [45] with three question items; the measure of perceived quality draws on Beverland et al. [6] with three question items; the measure of perceived entertainment is measured by Shen et al. [41] and consists of 3 items; perceived value is measured by Davis et al. [10] and consists of 3 items; and purchase intention is measured by Creyer [9] and others and consists of 3 items. All item scales were measured using a five-point Likert scale, where 1 indicates complete disagreement, and 5 indicates complete agreement. Participants were asked to answer truthfully. The variables and scales are shown in the Table 2.

Table 2. Variables and measurements

Variables	Measurements	References
Display visibility (DV)		
DV1	I thought the appearance of the agricultural products in the live-streaming room was comprehensive and transparent in its presentation	Liu et al. (2013)
DV2	The descriptions of the different sensory experiences in the live-stream gave me a fuller understanding of the agricultural products	
DV3	Using the corresponding utensils to display the agricultural products helped me visualize the serving scenario	
Cue multiplicity (CM)		
CM1	I want the streamer to introduce culture to increase my understanding of the agricultural products	Vickery et al. (2004)
CM2	I want the streamer to present information about the production to increase my understanding of the agricultural products	
CM3	I would like the live-streaming room to introduce a variety of serving methods to increase my knowledge of the agricultural products	
Perceived quality (PQ)		
PQ1	When watching a live-streaming of agricultural products, I want to learn about the source of the agricultural products	Beverland et al. (2008)
PQ2	When watching a agricultural products live-streaming, I consider the freshness and style flavors of the products	
PQ3	I expect reliable quality assurance and commitment from live sellers	
Perceived entertainment (PE)		
PE1	I had a great time watching the streamers bring in the agricultural products	Shen et al. (2010)

(continued)

Table 2. (continued)

Variables	Measurements	References
PE2	I thought the streamer's presentation of the agricultural products was very original and unique	
PE3	I'd like to watch the agricultural products live-streaming as a pastime	
Perceived value (PV)		
PV1	Buying agricultural products on the live feed can make my daily life easier	Davis et al. (1989)
PV2	I can shop for a wider variety of agricultural products in the live-streaming	
PV3	I can feel the advantage of buying agricultural product in the live-streaming over buying it at the supermarket	
Purchase intention (PI)		
PI1	I'm willing to add agricultural products to my cart when watching the live-streaming	Creyer (1997)
PI2	I'm willing to order agricultural products right off the live-streaming	
PI3	I'm willing to buy back agricultural products in the live-streaming many times over	

4.2 Data Collection

This study builds on previous research by using a questionnaire to collect data, a survey data collection method that is recognized in management science as a reliable method for collecting large amounts of individual-level data [3, 5]. The questionnaire for this study was created using the Questionnaire Star platform (<https://www.wjx.cn/>) to ensure data collection reliability and randomization. Questionnaire Star is a platform that provides questionnaire creation and data collection services. The questionnaire was distributed to potential customers through WeChat, China's leading social media channel. The link to the questionnaire is shared across multiple WeChat groups. Users can voluntarily answer the questionnaire, and each user ID can only answer the questionnaire once. Participants who fill out the questionnaire will be paid a certain amount. The restriction on recruiting participants must be at least 18 years old.

The online questionnaire was divided into four sections. The first section introduced the source and topic of the questionnaire and outlined the survey's objectives. The aim was to eliminate the respondents' defenses and guide them to answer sincerely based on the actual situation. In the second part, to ensure the questionnaire's validity, platform screening questions were set up according to the research theme, limiting the respondents to consumers of live e-commerce who watched agricultural products live-streaming or purchased products in the live-streaming room. The third part deals with the respondents' personal information, including gender, age, occupation, education level,

monthly income, etc. The fourth part is the main structure of the questionnaire, which contains the research variables of the proposed dimensions and consists of 18 questions.

The questionnaire was collected from May–June 2024. A pre-survey was first conducted to test the applicability of the questionnaire questions; this was followed by data collection from a large sample. With 413 participants, we first excluded consumers who had watched agricultural products live-streaming. In addition, invalid correspondences were excluded (e.g., too long or too short completion time, duplicates or too many outliers, etc.). The final number of valid questionnaires was 337, with a validity rate of 81.6%. This sample size is considered acceptable in live research [7]. Among all the respondents, 57.0% were female, and 43.0% were male; most of the respondents were between 18 and 30 years old (62.61%), which is the same as the age group of the current Chinese e-commerce consumers; most of the respondents had an education of bachelor's degree or below (83.68%); and the respondents' incomes were centered on 3,000–8,999 RMB (64.1%). This study believes that the data of this questionnaire reflects the basic situation of current e-commerce on-site consumers more realistically, which is representative to a certain extent and can support the subsequent research and analysis.

4.3 Control Variables

Four control variables were incorporated into the study to guarantee the reliability of the results. These control variables limit the effects of unrelated.

This may disrupt the strength and direction of the link between stimulus, organism, and response. Based on previous studies [24]. We used demographic variables such as gender, age, educational background, and income as control variables.

5 Data Analysis Results

5.1 Reliability and Validity

SPSS 25.0 was used to analyze the data for reliability, and AMOS 28.0 was used to validate the factor analysis. The overall Cronbach's α of the scale was 0.886, and the Cronbach's α of each variable was more significant than 0.7, indicating that the observed variables can better explain the variables. The factor loadings for each variable were higher than 0.7, indicating that the variables can be better explained by the observed variables. An analysis of the aggregation validity of the scale revealed that the AVE of each variable was greater than 0.5, and the combined reliability was greater than 0.7, indicating that the scale has good aggregation validity. In addition, the square root of the AVE for each variable was higher than the correlation coefficient, indicating that the discriminant validity of the scale was high (as shown in the Table 3).

Table 3. Loadings, AVE, and CR.

Constructs	Items	Loadings	Cronbach's α	AVE	CR
Display visibility (DV)	DV1	0.705	0.815	0.5977	0.8162
	DV2	0.811			
	DV3	0.799			
Cue multiplicity (CM)	CM1	0.762	0.794	0.5627	0.7942
	CM2	0.760			
	CM3	0.728			
Perceived quality (PQ)	PQ1	0.824	0.821	0.6044	0.8206
	PQ2	0.741			
	PQ3	0.765			
Perceived value (PV)	PV1	0.752	0.836	0.6013	0.8187
	PV2	0.749			
	PV3	0.823			
Perceived entertainment (PE)	PE1	0.800	0.815	0.6306	0.8366
	PE2	0.805			
	PE3	0.777			
Purchase intention (PI)	PI1	0.754	0.827	0.6121	0.8255
	PI2	0.812			
	PI3	0.780			

From the results of the structural equation modeling (SEM) fitness test in the Table 4, it can be seen that the RMSEA value is 0.062, which is in the range of 0.05 ~0.08, indicating that the model fits well; the chi-square degrees of freedom ratio (χ^2/df) is 2.343, which is less than 3, indicating that the hypothesized model fits well with the actual sample data; the values of TLI, NFI, IFI, and CFI are all greater than 0.9, which reached the fitness standard, indicating that the model constructed in this paper fits well with the actual collected data. The results show that the model constructed and the hypotheses proposed in this paper fit well with the actual data.

Table 4. Model Fitness results

Adaptation index	χ^2/df	PGFI	PNFI	RMSEA	TLI	NFI	IFI	CFI
Recommended	< 3	> 0.5	> 0.5	< 0.08	> 0.9	> 0.9	> 0.9	> 0.9
Model	2.343	0.665	0.730	0.062	0.926	0.900	0.940	0.940
Conclusion	Supported	Supported	Supported	Supported	Supported	Supported	Supported	Supported

5.2 Hypothesis Testing

The research model was estimated using AMOS 28.0 to obtain the structural equation model path (as shown in the Fig. 2). The parameter estimation of the structural equation model was organized according to the above results. The original hypotheses, regression paths, standardized path coefficients, p-values, and results of hypothesis testing are listed in the Table 5. Among the 11 hypotheses, only hypothesis H2b is not supported, indicating that cue multiplicity in the agricultural products live-streaming has no impact on consumers' perceived entertainment. ($\beta = 0.063$, $p = 0.402$). From the support path, display visibility and cue multiplicity have positive influences on consumers' perceived quality, and display visibility has positive influences on consumers' perceived entertainment; consumers' perceived quality, perceived value, and perceived entertainment have positive influences on consumers' purchase intentions, with the influences of perceived value being more significant ($\beta = 0.38$, $p = 0.000$).

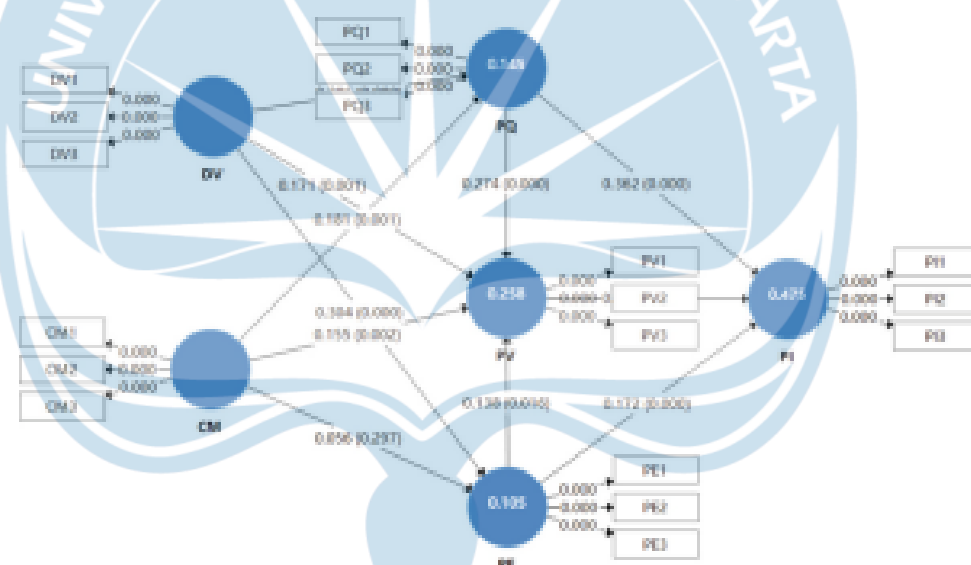


Fig. 2. Model with path coefficients.

Table 5. Model Path Coefficients and Hypothesis Test

Hypothesis	Relationship	Estimates	P-value	Conclusion
H1a	Display visibility - > Perceived quality	0.286	0.000	Supported
H1b	Display Visibility - > Perceived Entertainment	0.171	0.002	Supported
H1c	Display visibility - > Perceived Value	0.304	0.000	Supported
H2a	Cue multiplicity - > Perceived quality	0.181	0.001	Supported

(continued)

Table 5. (continued)

Hypothesis	Relationship	Estimates	P-value	Conclusion
H2b	Cue multiplicity - > Perceived Entertainment	0.155	0.002	Unsupported
H2c	Cue multiplicity - > Perceived Value	0.056	0.293	Supported
H3	Perceived quality - > Perceived Value	0.274	0.000	Supported
H4	Perceived Entertainment - > Perceived Value	0.138	0.015	Supported
H5	Perceived quality - > Purchase Intention	0.362	0.000	Supported
H6	Perceived Entertainment - > Purchase Intention	0.37	0.000	Supported
H7	Perceived Value - > Purchase Intention	0.172	0.000	Supported

Note: *, ** and *** indicate significant at the 10%, 5% and 1% statistical levels, respectively

Table 6. Mediating effect results

Relationship	Estimates	P-value
CM - > PE - > PI	0.01	0.367
DV - > PE - > PI	0.052	0.002
CM - > PQ - > PI	0.066	0.004
DV - > PQ - > PI	0.103	0.000
CM - > PV - > PI	0.057	0.006
DV - > PV - > PI	0.063	0.005
CM - > PE - > PV - > PI	0.003	0.364
PE - > PV - > PI	0.051	0.018
DV - > PE - > PV - > PI	0.016	0.032
CM - > PQ - > PV - > PI	0.018	0.011
PQ - > PV - > PI	0.101	0.000
DV - > PQ - > PV - > PI	0.029	0.000
CM - > PE - > PV	0.008	0.366
DV - > PE - > PV	0.042	0.031
CM - > PQ - > PV	0.05	0.010
DV - > PQ - > PV	0.078	0.000

In order to further test whether the mediating variables (perceived quality, perceived value, and perceived entertainment) mediate the effects of external variables (display

visibility, cue multiplicity) on purchase decisions, this study used the Bootstrap mediation effect test to test whether the mediation effect is significant. AMOS 28.0 was used in the testing process, and the significance and coefficients of the product of the mediating effect coefficients of perceived quality, perceived entertainment, and perceived value were calculated using the nonparametric percentile Bootstrap method. Setting a sample of 5000 times, if the confidence interval does not contain zero at a confidence level of 95%, the coefficient product is significant, and there is a mediating effect.

The results are shown in the Table 6. Each mediating effect model passes the test at the 95% probability level.

6 Conclusion and Discussions

This study applies the S-O-R model, combined with the Perceived Value Theory, to explain the effects of product display cues on consumers' perceived value and purchase intention in the agricultural products live-streaming. In this study, the attributes of product display visibility and cue multiplicity in the agricultural products live-streaming are taken as stimuli, the perceived quality, perceived value, and perceived entertainment, which represent the factors of consumer experience, are taken as organisms, and the consumers' purchase intentions in the live-streaming is taken as reaction. The study results show that the expressions of cue multiplicity of commodity information in the agricultural products live-streaming have no impact on consumers' entertainment. Display visibility and cue multiplicity jointly augmented consumers' perceived quality, and display visibility has positive influence on consumers' perceived entertainment; consumers' perceived quality, perceived value, and perceived entertainment have positive influences on consumers' purchase intentions, and the effect of perceived value is more significant.

In the S-O-R model, stimuli can trigger an individual's perception. Display visibility and cue multiplicity in the agricultural products live-streaming can enhance consumers' perceived benefits. The actual display of agricultural products in the live-streaming and the streamer's commitment to the quality of the product can convey the quality and value of the product and enhance the consumer's perception of the value of the product through the live-streaming, the consumer can directly see the specific details of the agricultural products, and this intuitive display allows the consumer to comprehend the product more intuitively and accurately, which will enhance the consumer's perceived benefits in the purchase; the streamer in the live-streaming of the agricultural products related to other cues in the live-streaming such as: production location, production methods, consumption methods, etc. can provide consumers with more product information, thus enhancing the perception of product value.

The display of visibility in the live-streaming of product e-commerce can enhance the consumer's perception of entertainment. Live show of the real scene and the real production process so that consumers can feel the live-streaming of the growth of agricultural products, picking, and other processes; this life experience can trigger the emotional resonance of consumers, increase the sense of participation and interactivity, so that consumers are more willing to participate in and invested in live-streaming, thus enhancing the perceived entertainment when watching live-streaming; live-streaming of

real-time display of high-definition images and colorful The real-time display of high-definition images and colorful images of agricultural products in the live-streaming can bring visual, intuitive feelings to consumers in the live-streaming, and this visual immersion can improve the viewing experience of consumers and enhance the perceived entertainment. The effect of cue multiplicity in live-streaming on consumers' perceived entertainment is insignificant and is considered to have no effect. The possible reason is that the introduction and display of other product-related information in the agricultural products live-streaming is too dull to be combined with entertaining information and cannot cause consumers to be entertained when watching.

Consumers' perceived benefits in agricultural products live-streaming can enhance their purchase intentions in the live-streaming room. E-commerce live-streaming not only provides product information but also accompany various preferential activities, limited-time discounts and so on. Consumers watching the agricultural products live-streaming agricultural products can feel the value of the product itself and the public welfare value of supporting the cause of helping farmers. This increase in perceived value stimulates the consumer's desire to buy.

Consumers' perceived entertainment in agricultural live-streaming e-commerce can enhance their purchase intentions in the live-streaming room. Entertainment, an important feature of e-commerce live-streaming, provides consumers with an easy and interesting shopping experience. In the live-streaming process, the streamer will usually use humorous language, vivid expressions, and actions to introduce the product; through the entertaining content display and explanation, the streamer can transfer the complex product information to the consumer in a simple and easy-to-understand way, making it easier for consumers to understand and accept, and enhancing consumer pleasure. This sense of pleasure can increase the interest of consumers in live content so that they are more willing to stay in the live-streaming room, further understand the product, and produce purchase intentions.

6.1 Theoretical Implications

The live-streaming e-commerce market is growing rapidly, and while there are many academic studies on the influence of live e-commerce on consumer purchasing decisions, consumer behavior is still evolving in the context of the emerging and innovative live e-commerce market. Moreover, there is still a lack of in-depth research on agricultural products, a product category with its product characteristics. Thus, this study aims to address the research gap by exploring the relationship between the display information of agricultural products and consumers' perceptions and purchase intentions based on the characteristics of agricultural products.

6.2 Managerial Implications

The results of this study also provide practical insights for live-streaming managers and platforms. Our findings suggest that comprehensive visual product information needs to be provided in agricultural live-streaming. High-definition photography and video equipment can be used to ensure that consumers can clearly see the details of agricultural products, including color, shape, and texture, and that all aspects and details of

the agricultural products are displayed through multi-angle displays and lens zooms to provide consumers with a more comprehensive understanding of the appearance and characteristics of the products. Combining text, pictures, videos, and other media to provide consumers with a comprehensive introduction.

To enhance multi-sensory-based cue multiplicity, the production methods and planting techniques of agricultural products can be introduced during the live-streaming, so that consumers can better understand the production standards and quality assurance measures of the products; the consumption methods and cooking suggestions of agricultural products can be provided, including recipe recommendations and food combinations, so that consumers can better understand the diversified uses and nutritional value of the products; the features and advantages of agricultural products can be demonstrated through comparison and demonstration, such as taste. Through comparisons and demonstrations, we demonstrate the characteristics and advantages of agricultural products, such as taste, nutritional value, variety, etc.; and share consumers' use cases and experiences, including word-of-mouth evaluations and purchasing feelings, so as to enable consumers to obtain cues and insights from other people's real experiences, and to increase the sense of trust in the products.

In an increasingly homogenized live-streaming environment, it is critical to incorporate advanced technologies to create live-streaming environments that satisfy consumers' positive perceptions of agricultural product quality, attractiveness, and entertainment benefits. These optimization strategies can improve the display and design elements associated with agricultural products live-streaming to increase consumer conversions during live-streaming and ultimately increase sales.

6.3 Limitations and Future Research Directions

There is a large variety of agricultural products, and no detailed studies are conducted according to specific categories. Live-streaming platforms are diverse, and there are refinement possibilities for different platforms and different consumer types. Perceived benefit, positive impact perspective, no perceived loss incorporated in modeling.

While the results of this study provide relevant theoretical and practical contributions, there are limitations that provide guidance and opportunities for future research directions. Due to the cost and time constraints of the study, this study sampled from the audience of live e-commerce in China, and investigating a broader sample would allow for more generalizability of the results. Although our sample is representative, the sample size is limited and may not fully reflect the purchasing behavior of all consumers. In addition, in terms of product categories, agricultural products cover a wide range of specific product categories, and the specific needs of different product categories vary.

In terms of theoretical modeling, this study does not refine the different types of live-streaming platforms. The multiplicity of streamer types and product types of live-streaming merchants makes their operation models, audience groups, and consumers' purchasing decision paths different. Future research can analyze different types of live-streaming platforms in depth, establish more refined theoretical models, and better explain and predict the path of influence of different types of live-streaming e-commerce attributes on consumers' purchase decisions. In addition, this study only analyzes the perceived benefits of consumers in the agricultural products live-streaming, lacks the

study of perceived losses in the research model, and has not analyzed the role of live-streaming of agricultural products in social benefits, which can be used as a focus for future research.

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