New Trend in Online Shopping: L-commerce (Live stream commerce) and A Model Proposal for Consumer Adoption

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Çevrimiçi Alışverişte Yeni Trend: C-Ticaret (Canlı Yayın Ticareti) ve Tüketici Adaptasyonu İçin Bir Model Önerisi	New Trend in Online Shopping: L-commerce (Live Stream Commerce) and a Model Proposal for Consumer Adoption
Öz	**Abstract**
Çalışmanın amacı, çevrimiçi alışverişte yeni bir tür olarak ortaya çıkan c-ticaret olgusunu açıklığa kavuşturmak ve diğer modellerden ayrılan niteliklerini teşhis etmektir. C-ticaret literatürü ele alınmış ve çalışmaların ağırlıklı olarak Uzakdoğu ülkelerinde canlı yayın alışverişlerinde satın alma niyetine odaklanıldığı saptanmıştır. Çalışma aynı zamanda yeni pazarlarda tüketicilerin c-ticarete nasıl adapte olabileceklerini ve bunu nasıl kabullenebileceklerini aydınlığa kavuşturmayı hedeflemektedir. Buna doğrultuda, Teknoloji Kabul Modeli (TAM) temel alınarak teknolojik (algılanan kullanım kolaylığı ve kullanışlılık), psikolojik (algılanan finansal, sosyal, psikolojik ve zamanla ilgili risk) ve sosyal (tele-bulunma ve sosyal buradalık) bileşenlerden oluşan kavramsal bir model önerisi sunulmuştur. Çalışmanın teorisyenler, c-ticaret platform yöneticileri ve girişimcilere yön göstermesi beklenmektedir.	The study aims to clarify the L-commerce phenomenon, emerging as a novel model in online shopping, and distinguish the attributes separated from other models. The L-commerce literature was also revisited. Past attempts mainly focused on the intention to purchase in live stream shopping platforms in far eastern provinces. The study also proposes enlightening how consumers can adapt and accept L-commerce in new markets. Accordingly, a conceptual model including technological (*perceived ease of use and usefulness*), psychological (*perceived financial, social, psychological and time risk*) and social (*telepresence and social presence*) components were brought forward based on the Technology Acceptance Model (TAM). It is expected to shed light on theoreticians, L-commerce platform managers and entrepreneurs.
Anahtar Kelimeler: Tüketici Davranışı, Çevrimiçi Alışveriş, E-ticaret, Sosyal Medya Alışverişi, Canlı Yayın Ticareti	**Keywords:** Consumer Behavior, Online Shopping, E-commerce, Social Media Shopping, Live Stream Commerce
JEL Kodları: M31, M37, L81	**JEL Codes:** M31, M37, L81

Araştırma ve Yayın Etiği Beyanı	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
Yazarların Makaleye Olan Katkıları	Tamamı yazar tarafından hazırlanmıştır.
Çıkar Beyanı	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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1. Introduction

Consumers' retail shopping habits have recently shifted from conventional channels to digital platforms due to the COVID-19 pandemic. Therefore, consumers prefer online rather than physical shopping (Ma, 2021), particularly in the last three years. Recent developments provide emerging novel electronic commerce models with penetrating digital communication technologies like L-commerce (*live stream commerce*).

L-commerce first appeared through Taobao, supported by Alibaba, established in China in 2016. The model allows sellers to advertise products by influencers or agents in a live-stream video on a platform. It also permits consumers to view the videos simultaneously and give an order during the live streaming through the platform. Thanks to live-stream shopping, users can ask questions about products or features and receive the responses instantly. Broadly, it is stated that L-commerce arises from the combination of e-commerce and live-stream broadcasting applications. Additionally, it provides a new communication channel between seller and buyer during the shopping experience.

Live commerce revenues have risen dramatically. According to Arore et al.'s (2021) report published by McKinsey, Alibaba's gain reached $7.5 billion in 30 minutes in a live-stream shopping campaign in 2020. Moreover, the share of livestream shopping in total e-commerce is expected to be 10% or 20% by 2026. Most product types sold in L-commerce are fashion and apparel, with 35.6%. Then, the share of cosmetics is 7.6%, and food products is 7.4%. On the other hand, livestream shoppers were mainly born in the 90s and 2000s identified as Generation Z and millennials. Though livestream shopping is being implemented in the U.S. and Europe worldwide, China constitutes the majority of trading volume.

L-commerce is a digital face-to-face selling from vendors to consumers in the online environment. L-commerce derives from other e-commerce models by providing benefits to consumers and sellers. First, unlike traditional *Business-to-Customer* (B2C) and *Customer-to-Customer* (C2C) models, it allows instantaneous knowledge exchange between vendors and buyers. Consumers even communicate with other customers (Guo et al., 2021). It also minimizes the asymmetric information among the parties. Likewise, L-commerce decreases the prospecting time in the consumer decision-making process (Hamilton et al., 2014) and helps persuade consumers through dynamic communications. However, it does not exist in conventional e-commerce since communication between seller and buyer is restricted to e-mails, chatbox or website forms. Therefore, social interaction in online shopping remains limited (Lu et al., 2016) in e-commerce model.

The second discrepancy between L-commerce and other models paves the way for seller-buyer engagement through various technological elements. Vendors simultaneously interact with users, connected via a live streaming platform, with visual materials such as emojis and gifs. Thus, L-commerce platforms deliver users with an enjoyable shopping experience. (Lu et al., 2018). The interactivity may also reduce consumers' risk perceptions and motivate purchase intention.

The scope of previous studies about L-commerce can be divided into *platform-oriented* and *social commerce-oriented*. Platform-oriented viewpoint assumes L-commerce as encountering sellers and buyers on a live streaming broadcast in an e-commerce platform. It mediates livestream shopping as Taobao originated in China (Lyu et al., 2022; Xu et al., 2020; Wongsunopparat & Deng, 2021; Lee & Chen, 2021). On the other hand, the social commerce-

oriented approach assumes L-commerce as advertising products or services during an influencers' or opinion leaders' live streaming videos on their social media accounts such as Facebook Live or Instagram Live. Streamers also share photos or videos on their accounts (Wongkitrungrueng et al., 2020; Doong, 2022).

The study embraces the platform-oriented perspective since live-stream shopping is evaluated through e-commerce. Therefore, L-commerce contains shopping that occurs by selling products during a live stream broadcast on an online business platform, providing interactivity, and instantly placing an order. However, research on L-commerce is infant, and the characteristics of live-streaming commerce are elusiveness. It might generate particular issues for theoreticians and implementers. Consequently, the study aims to introduce live-streaming commerce as a new generation of online shopping and propose a conceptual model for acceptance of L-commerce to guide further research and practitioners or entrepreneurs.

In the study, the first section classifies the electronic commerce models to recognize L-commerce from others. Then, what determinations have been put forward by previous attempts in L-commerce is described. The subsequent section creates the research question to develop a conceptual model to enlighten the consumer adoption of L-commerce. Eventually, implications from the proposed model are discussed, and suggestions for future research are made.

2. Classifications of Online Commerce Models

The study compares three classifications of online shopping, e-commerce, s-commerce and L-commerce, to distinguish the characteristics. Initially, the operational differences among the online shopping models should be described. E-commerce means electronic commerce, representing that individuals or institutions can exchange products or services from a platform and pay the price via various financial instruments provided by a third-party payment service supplier in the online environment. There are also distinct sorts of e-commerce, such as *business-to-consumer* (B2C), *consumer-to-consumer* (C2C) or *business-to-business* (B2B) (Jain et al., 2021). On the other hand, s-commerce initiates social media commerce and allows individuals to communicate with each other and do interpersonal shopping on social media network sites (e.g. Facebook, Instagram) (Zafar et al., 2021). Likewise, L-commerce symbolizes live-stream commerce, permitting consumers to shop and interact with the streamer when viewing a live-stream broadcast on an e-commerce platform.

To compare online shopping models, determining a few criteria helps elucidate the main differences. The criteria were constructed by the author by revisiting the literature (Kumar et al., 2021; Wirtz, 2021; Abed et al., 2015; Liang & Turban, 2011; Liu & Wang, 2023; Wongkitrungrueng et al., 2020) to practicalize the comparison. Consequently, online commerce can be classified by interpersonal relationships (*providing interactivity, face-to-face encounters, instant communications between seller and buyer*) and technological features (*product visibility, security precautions, platform assurance*). Table 1 illustrates the general comparison of online shopping models by the criteria.

Table 1: Classifications of Online Commerce Types

Criteria	E-commerce	S-commerce	L-commerce
Interactivity	Low	High	High
Face-to-face encounters	Low	High	High
Instant communications	Low	High	High
Product visibility	Low	High	High
Security precautions	High	Low	High
Platform assurance	High	Low	High

Source: Originated by author.

According to Table 1, s-commerce and L-commerce have higher interactivity than e-commerce. Users and sellers can send visual materials such as emojis and gifs to each other during the live stream broadcasting on social networking sites or L-commerce platforms. However, due to the interface, e-commerce is limited to interacting in the marketplace. On the other hand, broadcasters and viewers can digitally encounter face-to-face via social network sites (e.g. Facebook Live) or live broadcasting platforms (e.g. Taobao Live). Buyers are exposed to streamers' or influencers' visual expressions, attractiveness, expertise, facilitating persuasive efforts. Nevertheless, due to restricted design features, e-commerce platforms predominantly do not allow face-to-face encounters. It also restrains instant communications, yet it is possible if only chatbots with actual customer care representatives can exist on the platform. However, s-commerce and L-commerce allow simultaneous contact since users can ask queries about advertised products or services via conversation.

Table 1 also summarizes the differences in technical features of electronic shopping models. Product visibility cannot be flexible in e-commerce platforms since only static or 3D images and videos can be presented. It limits the picture of the product image, too. However, during the s-commerce and L-commerce live streaming, the broadcaster can expose the product by showing the materials and how it works, or consumers can use it. Even the presentation process can be shaped by users' demands. Taking security precautions is feasible for e-commerce and L-commerce. Both shopping models can be subject to a distance trading regulation ruled by macro environment actors such as governments and public trade institutions. The regulations could minimize the exploitation of consumers due to asymmetric information during online shopping and impose sanctions on sellers.

Nevertheless, it is improbable for s-commerce. Social network sites provide sellers and buyers advertising the products or services in a digital selling channel, yet they do not directly involve the exchange process. The buyer can communicate with the seller without social media and shop with each other through their approved payment method. Therefore, security issues and risks should arise in these circumstances.

Facilitating platform assurance in e-commerce and L-commerce is feasible since marketplaces could offer various assurance implementations like 100% refund of money, making a complaint to the seller, delivery guarantee, payment security, and customer protection policy. The platform entirely mediates the shopping relationship between vendors and customers, which can provide a safe buying experience. However, platform assurance is restrained in s-commerce since social network sites only mediate online product or service presentation and transactional-based exchange like placing an order through the seller's Instagram store. They do not offer additional platform assurance since they prioritize content sharing over shopping.

The following section summarizes past attempts at L-commerce after distinguishing its characteristics by classification of online shopping models.

3. Previous Studies on L-Commerce

Previous studies were inspected in terms of theoretical and methodological aspects through a literature review and demonstrated in Table 1. Featured research is explained in this section.

Sun et al. (2019) investigated live commerce according to affordance theory and found that the relationship between information technology affordance and engagement should influence consumers' purchase intention on live stream and social media commerce. On the other hand, Xu et al. (2020) uncovered that information quality, para-social interactions, and broadcaster attractiveness may impact consumer behaviour. Lee & Chen (2021) questioned impulsive buying on live-streaming platforms in the SOR (stimulus-organism-response) model, and though enjoyment affects impulsive buying intention, usefulness does not. Furthermore, Zhang et al. (2022a) examine the continued intention in Taobao Live based on socio-technical system theory and imply that live interactivity and technological facilitators can enhance trust, and trust may affect continued intention. Studies indicate technical dynamics (*e.g. technological affordance, information quality, technological facilitators*) and affective states (*e.g. attractiveness, enjoyment*) are critical indicators of L-commerce shopping that should improve users' adoption intention on L-commerce platforms.

Huang et al. (2023) attempt to comprehend the role of influencers in watchers' purchase intention by interrelating social presence, emotions, and immersive experience according to interpersonal interaction theory. Likewise, Lee et al. (2023) found out that the attributes of live commerce impact value perception, influencing purchase intention. Moreover, Hu & Chaudhry (2020) examined relational bonds (*financial, social and structural*) between seller and buyer regarding relationship marketing in Taobao Live. They detected that relational bond shape emotional commitment to the seller and platform, then emerge consumer engagement. Likewise, Lu & Chen (2021) analyze the intention to purchase via L-commerce platforms in the signaling theory context and reveal that if users perceive similar characteristics and value with sellers, the uncertainty of shopping may decrease, and trust may be acquired. The mentioned investigations imply the function of social exchange in L-commerce that expands seller-buyer interaction, ultimately triggering behavioural intention. Therefore, social components should be a determinant of L-commerce adoption.

Doong (2022) investigated Facebook Live users' purchase intention in Taiwan based on the SOR model and implied that vendors' reputation and interactivity correlate with trust and perceived value toward vendors. Besides, trust and value ultimately influence buying intention. Additionally, Wongkitrungrueng and Assarut (2020) analyze Facebook Live shoppers in terms of consumption values theory and reveal that symbolic, utilitarian, and hedonic values play a role in customer engagement. On the other hand, Bao & Zhu (2023) investigated Taobao Live shoppers' intention to stick to the platform based on the "*e-commerce system success model*" and ascertained that drivers of perceived value -*vividness, real-time interaction and diagnosticity*- play a role in customer satisfaction and consequently intention to stick arises.

Moreover, Yun et al. (2023) attempt to comprehend consumer manners in L-commerce by studying the function of live-stream trading characteristics in shoppers' post-purchase behaviour. They uncovered that streamer attractiveness, expertise, real-time activity and perceived visibility positively impact satisfaction. Then, satisfaction influenced repurchase intention and loyalty. Besides, security/privacy and perceived price advantage toward L-

commerce moderated the relationship between customer delight, intention to buy again and loyalty. These attempts reveal the role of social interaction (*e.g. interactivity, real-time interaction*) and platform features (*e.g. indicating seller's reputation, diagnosticity*) play a part in consumers' value perception and post-purchase behaviour, supporting their potential role in adopting L-commerce.

Zhang et al. (2022b) conducted qualitative research on L-commerce broadcasters based on grounded and role theory. They explored that broadcaster characteristics may be "*expertise, attractiveness, credibility, interactivity, popularity, price support, affinity, and responsiveness*". Moreover, their roles should be as "*opinion leader, spokesperson, interactive friend, and salesperson*". Nevertheless, Ma (2021) combined several theories to investigate customer satisfaction in L-commerce and implied that "*information, service and argument quality*" drive satisfaction. Moreover, the mediating role of social presence and trustworthiness was discovered. Nevertheless, Liu et al. (2022) explore L-commerce in the tourism context based on the SOR model and predict that interactivity and authenticity impact flow experience, trust and purchase intention. However, entertainment did not directly but indirectly determine purchase intention, though it impacted flow experience and trust. Considering all the previous studies, it is asserted that buying tendency in L-commerce is predominantly shaped by the technological infrastructure of the platform, consumers' emotional bonds or states, and social associations between sellers and buyers.

The majority of the past research provides several insights to the study. The first critical point is that investigations have mainly been conducted in China, representing the genesis region of L-commerce. However, since L-commerce only exists in a few provinces (e.g. China and South Korea), how companies implement L-commerce in new markets still needs to be solved. Second, the previous studies extensively focused on users' purchase intention. Therefore, their theoretical frameworks are mainly based on revealing consumers' post-purchase behaviour (e.g., the SOR model and affordance theory). Yet, research on how consumers adopt and accept L-commerce and which conceptual background could be embraced is needed. Exploring user acceptance and adoption of novel e-commerce platforms may contribute to the literature and practitioners. In this context, there is a research question has arisen:

RQ: How do consumers adopt live-stream shopping?

The following section attempts to answer the research question by developing a conceptual model.

Table 2: Previous studies on L-commerce

Author, Year	Framework	Independent(s)	Mediator(s)	Dependent(s)	Moderator(s)	Platform	Data collection	Sample	Analysis	Region
Xu et al., 2020	SOR model	streamer attractiveness, para-social interaction, information quality	cognitive assimilation, arousal	hedonic consumption, impulsive consumption, social sharing		platforms like Taobao.com, JD.com, and Mogujie.com	online survey	300 consumers with experience of watching live streaming videos	SEM, mediation analysis	China
Huang et al., 2023	interpersonal interaction theory	social presence	immersive experience	purchase intention	positive emotions	Li ZiQi's video site (youtuber)	online and offline survey	408 Chinese, mostly students	SEM, mediation and moderated mediation analysis	China
Hu & Chaudhry, 2020	SOR model, relationship marketing	financial, social and structural bonds	Affective commitment to the broadcaster, Affective commitment to the online marketpalce	consumer engagement		Taobao Live	online survey	327 consumers	SEM and mediation analysis with Mplus	China
Doong, 2022	SOR model	reputation, interactivity	trust, perceived value	purchase intention		Facebook live commerce		236 consumers	SEM, serial mediation model	Taiwan
Wongkitrungrueng & Assarut, 2020	SOR model, consumer value theory	utilitarian, hedonic, symbolic value	trust in products, trust in sellers	customer engagement		Facebook Live	offline survey	261 watchers	PLS-SEM, multiple mediation analysis	Thailand
Zhang et al., 2022b	socio-technical system theory	communication, synchronicity, visibility, personalization convenience, ubiquity, social presence, active control, two-way	trust in streamers, trust in products	continuance intention	live streaming genres	Taobao Live	online survey	446 customers	SEM	China
Lee et al., 2023	consumption values	attractiveness, vividness, professionalism, information quality, compatibility	perceived value, hedonic value	purchase intention		mobile live commerce platforms	survey	283 mobile live commerce customers	PLS-SEM	South Korea

Table 2: Previous studies on L-commerce (*continue*)

| Author, Year	Framework	Independent(s)	Mediator(s)	Dependent(s)	Moderator(s)	Platform	Data collectic	Sample	Analysis	Region
Lu & Chen, 2021	signaling theory, perceived uncertainty	physical characteristic similarity, value similarity	product fit uncertainty, trust, product quality uncertainty	purchase intention		L-commerce (Taobao live, JD live) and e-commerce sites (Douyin, Kuaishou)	online survey	L-commerce whatchers	PLS-SEM, Importance-Performance Map Analysis, multi-group analysis	China
Bao & Zhu, 2023	E-commerce system success model	Vividness, Real-time interaction, Diagnosticity	Serendipity, Customer satisfaction, Perceived value, Flow	Stickiness intention		Taobao Live	online survey	380 shoppers	PLS-SEM	China
Lee & Chen, 2021	SOR model	Attractiveness, expertise, Product usefulness, purchase convenience, product price visibility	Perceived usefulness, perceived enjoyment	urge to buy impulsively		live streaming platforms	online survey	433 shoppers	PLS-SEM	China
Sun et al., 2019	affordance theory	metavoicing, guidance shopping, social presence, telepresence	immersion, presence	purchase intention		Taobao.com, JD.com, Mogujie.com and Sina Microblog.	online survey	504 shoppers	PLS-SEM, mediation analysis	China
Zhang et al., 2022a	role theory, grounded theory		trustwothiness, social presence,			WeChat, the most popular social media platform in China	semi-structured interview	96 candidates	content analysis with NVivo 11	China
Ma, 2021	information systems success model, media richness theory, source credibility model	source expertise, media richness	information quality, service quality, argument quality	satisfaction		-	online survey	237 live-stream shoppers	SEM, mediation analysis	China
Yun et al., 2023	Affordance theory	streamer attractiveness, streamer expertise, real-time activity, perceived visibility	L-commerce customer satisfaction	L-commerce repurchase intention, L-commerce customer loyalty	security/privacy, perceived price advantage	-	online survey	300 L-commerce shoppers	SEM, multigroup analysis	China
Liu et al., 2022	SOR model	interactivity, authenticity, entertainment	flow experience, trust	tourism consumers' purchase intention		-	online and offline survey	357 tourism L-commerce watchers	SEM, mediation analysis, ANOVA,	China
Liu et al., 2022	SOR model	interactivity, authenticity, entertainment	flow experience, trust	tourism consumers' purchase intention		-	online and offline survey	357 tourism L-commerce watchers	SEM, mediation analysis, ANOVA,	China

Source: Originated by author.

4. Development of The Conceptual Model

The study should be built on a conceptual framework in line with the research question. The Technology Acceptance Model (TAM) (Davis, 1989) represents a baseline since it explains how consumers adopt new technological developments. TAM, introduced by Fred Davis, comprises the Theory of Reasonable Action and Planned Behavior. It is frequently used and validated consistent findings by research on consumer-technology adoption in the prior two decades (Sagnier et al., 2020). TAM asserts that two core variables, perception of using comfort and usefulness, intervene in a complex relationship between external components and system users. Additionally, various variables are added by past studies to update and revise in line with recent developments (Marangunić & Granić, 2015). The core elements of TAM are customized to L-commerce and shown in Figure 1.

Figure 1: The Initial Conceptual Model
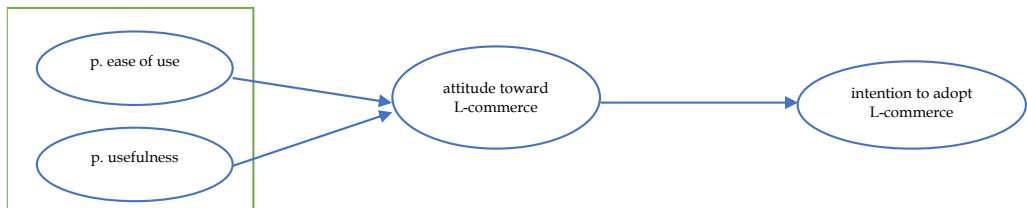
Source: Originated by author

Figure 1 indicates that attitudes determine consumers' intention to adopt L-commerce. A strict relationship between attitude and intention is established by Ajzen and Fishbein (2000) and confirmed by various studies (Glasman & Albarracín, 2006). According to the conceptual model, adopting should be comfortable when consumers have favourable manners. Furthermore, consumers have positive mindsets if shopping on live-stream platforms is perceived as practical and effortless. The hypotheses indicating the relationship between technological components, attitude toward L-commerce and the adoption intention are below.

H1: Perceived ease of use predicts attitude toward L-commerce.

H2: Perceived usefulness predicts attitude toward L-commerce.

H3: Attitude toward L-commerce predicts intention to adopt L-commerce.

Describing the attitude toward L-commerce with technological factors is insufficient since consumers may have anxiety when accepting technological products. The Diffusion of Innovation Theory (Rogers, 2010: 216) implies that novel technologies increase adoption anxiety and risk perception toward new products, services and platforms. Therefore, consumers perceived diverse risks in new shopping platforms like L-commerce, which may influence their attitude in various aspects revealed by previous research (Weber & Milliman, 1997; Ariff et al., 2014; Bhatti et al., 2018).

Based on past studies, it could be asserted that when users perceive a higher financial risk, it may increase their monetary anxiety and reduce their shopping tendency on L-commerce. In this case, L-commerce platforms should need help with which strategies can be developed and how consumers' various perceived risks can be managed. Therefore, exploring the role of

perceived risk in shaping the attitude provides substantial evidence to theoretical knowledge and practitioners. The conceptual model is revised in this direction and demonstrated in Figure 2. The hypotheses reflecting the associations between the constructs of perceived risk and the attitude toward L-commerce are below.
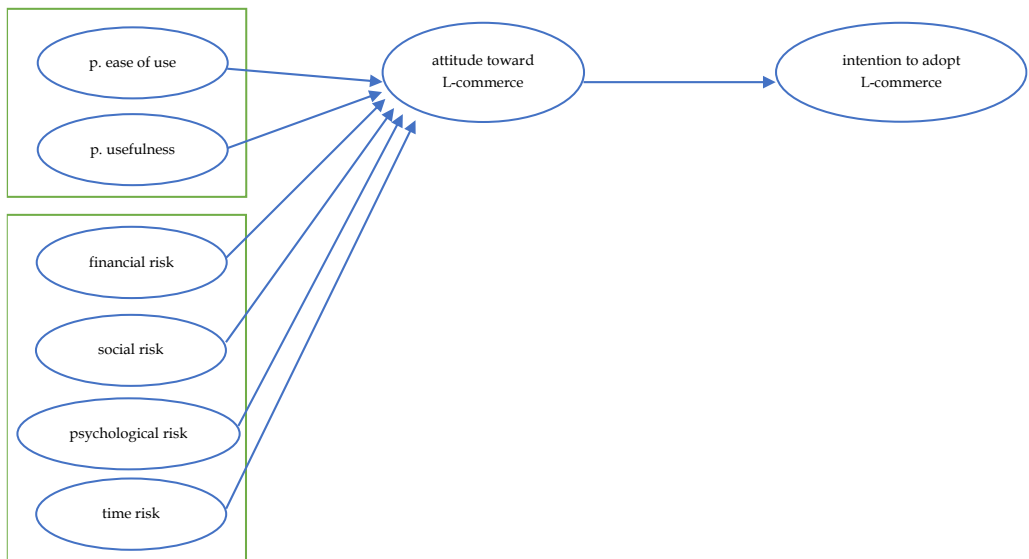
H4: *Financial risk predicts attitude toward L-commerce.*

H5: *Social risk predicts attitude toward L-commerce.*

H6: *Psychological risk predicts attitude toward L-commerce.*

H7: *Time risk predicts attitude toward L-commerce.*

Figure 2: The Revised Conceptual Model

Source: Originated by author

Online shopping platforms endeavour to provide a physical retailing experience through same-day delivery, responsiveness, and technological elements such as virtual reality, augmented visual interface and 3D product images (Suh & Chang, 2006; Lim & Ayyagari, 2018). These attempts emerged as a telepresence phenomenon, representing consumers pretending to shop in an actual store in online circumstances (Zhu et al., 2022). On the other hand, shopping habits on social media provide users as if they interact and communicate with each other physically, defined as the social presence concept. Social presence creates an interpersonal relationship between the seller and buyer, favourably affecting consumer trust and product or service purchase intention (Wang et al., 2021; Yaraş et al., 2017).

Algharabat et al. (2018) emphasize that telepresence and social presence are critical indicators of consumer attitudes and behaviour. On the other hand, Lu et al. (2016) highlight that consumers' attitude is formed by social interaction with sellers and computer interaction via web surfing, online learning, and shopping, similar to the physical retailing experience, representing the telepresence concept. Likewise, Lee (2018) confirmed that consumer-

company interactions in online platforms emerge as telepresence experiences, influencing attitudes toward firms' websites and brands.

According to previous studies, if consumers experience shopping in a retail store by moving beyond the physical distance at the L-commerce platforms, their beliefs are favourable, and they should intend live stream transactions. Likewise, when shoppers perceive social interaction with the seller as in a physical environment, their attitude toward L-commerce may be optimistic and behavioural intention should be increased. Therefore, telepresence and social presence were added to the conceptual model, pointing out that social dynamics may play a distinct role in L-commerce adoption. Figure 3 shows the final research model. The hypotheses demonstrating the potential connection between the presence constructs, the attitude and adoption intention are below.
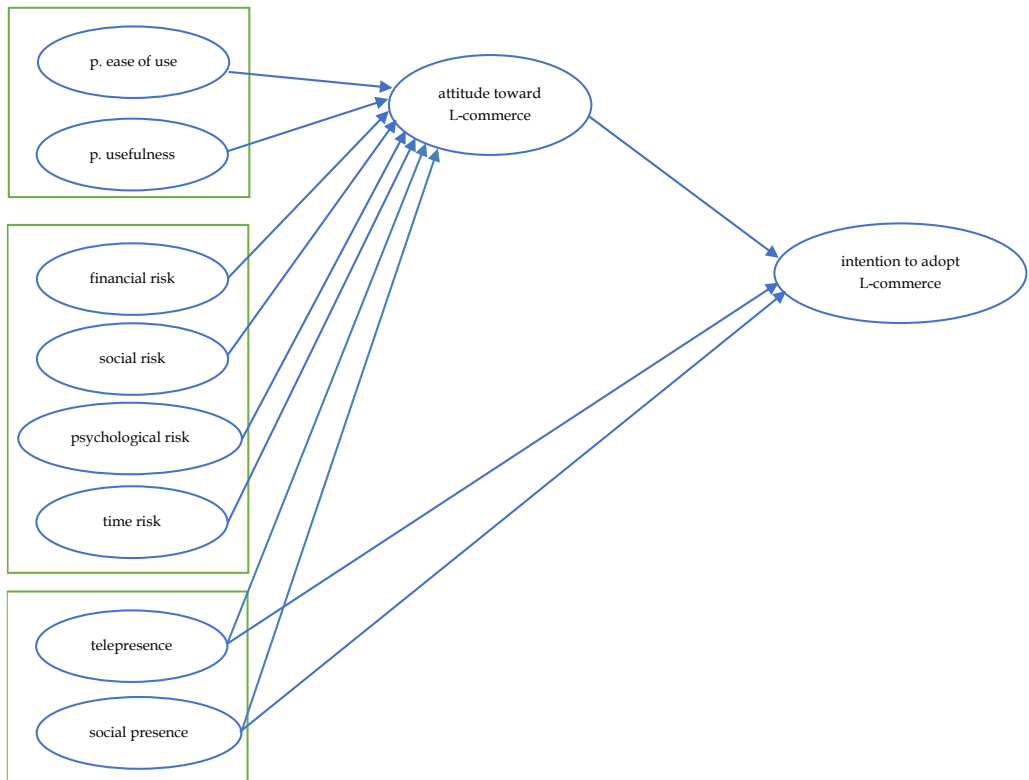
H8: Telepresence predicts attitude toward L-commerce.

H9: Social presence predicts attitude toward L-commerce.

H10: Telepresence predicts intention to adopt L-commerce.

H11: Social presence predicts intention to adopt L-commerce.

Figure 3: The Final Conceptual Model

Source: Originated by author

5. Conclusion

Online trading patterns have dramatically evolved in the last three decades due to the dynamics in macro-economic environment factors. Accordingly, various electronic shopping formats have emerged as e-commerce, s-commerce and L-commerce. The study handles L-commerce, shining out recently, by distinguishing the idiosyncratic characteristics of online shopping formats to achieve conceptual crispening. It is revealed that live-streaming commerce allows more interactivity, face-to-face encounters and instant communications between sellers and buyers during the exchange process than e-commerce and s-commerce. Furthermore, providing detailed product visibility, external security precautions and platform assurance implementations is more feasible in L-commerce than others.

L-commerce literature was also reviewed in the study, and detected that previous research predominantly focused on consumers' purchase intention in L-commerce in China. However, it is crucial to reveal adopting consumers to L-commerce in new markets, neglected by past attempts. The study should contribute and shed light on the literature by proposing a conceptual model about how consumers' attitude toward L-commerce is shaped and how to adopt it.

The proposed model offers that three elements may shape the attitude toward L-commerce. As technological factors, perception of using comfort and usefulness could play a role in forming the consumers' attitudes, core variables in TAM. On the other hand, anxiety about online shopping causes should influence the attitude, representing perceived risk (*financial, social, psychological, and time risk*) as psychological drivers. Besides, interactivity with streamers generates social interaction with sellers and buyers, indicating that telepresence and social presence may affect the attitude toward L-commerce and L-commerce adoption intention. Consequently, the attitude should determine users' intention to adopt L-commerce.

6. Future Research Directions

The broadcaster type (*celebrity, expert or influencer*) may play a role in the L-commerce adoption process. Future research may investigate the streamer type in different platforms. Moreover, the study did not include personal factors in L-commerce adoption. The moderating role of individual components such as personality (Camoiras-Rodriguez & Varela, 2020), lifestyles (Kaur, & Kochar, 2018), personal values (Chowdhury, 2020), and emotions (Cachero-Martínez & Vázquez-Casielles, 2021) should be investigated by further research.

Online shopping behaviour may be tracked and analyzed through novel methodological developments like artificial intelligence (Ameen et al., 2021), machine learning (Kliestik et al., 2022), and virtual reality (Meißner et al., 2020) technologies to forecast how and when consumers adopt L-commerce in a new market. On the other hand, qualitative research may provide new insights to comprehend which circumstances ease users' intention to adopt L-commerce. Specifically, conducting focus groups or interviews about when consumers use and engage in L-commerce platforms may allow access to critical latent variables, improving the conceptual model.

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