



University of Tehran Press

Interdisciplinary Journal of Management Studies (IJMS)

Online ISSN: 2981-0795

Home Page: <https://ijms.ut.ac.ir>

No to Uncertainty in Online Commerce with Social Commerce Constructs: Can Uncertainty Be Eliminated?

Nasibeh Pouti 

Department of Information Technology and Computer Engineering, Faculty of Engineering, University of Sayyed Jamaledin Asadabadi University, Asadabad, Iran. E-mail: pouti.np@sjau.ac.ir

ARTICLE INFO

Article type:
Research Article

Article History:

Received: 27 June 2024

Revised: 21 October 2025

Accepted: 18 November 2025

Published Online: 03 September 2026

Keywords:

Uncertainty,
Online commerce,
Social commerce,
Systematic review.

ABSTRACT

Uncertainty reduction mechanisms have attracted considerable attention since the emergence of online commerce. However, social commerce constructs have increased the potential of these mechanisms in recent years. The aim of this study is to systematically investigate the reduction of uncertainty in online transactions over the past two decades. To that end, 113 relevant references were identified by developing a systematic review protocol during the planned search. In addition, 171 uncertainty mechanisms were identified in these references. Through a systematic review of the literature, we identified all dimensions of uncertainty in online commerce, including types of factors, theoretical perspectives, timeframes, cognitive maps, and key topics of focus. In this review, we study and examine in detail the role of social commerce constructs. This study serves as an important reference and provides a detailed and practical roadmap for researchers intending to conduct any type of study on uncertainty in online commerce.

Cite this article: Pouti, N. (2026). No to Uncertainty in Online Commerce with Social Commerce Constructs: Can Uncertainty Be Eliminated?. *Interdisciplinary Journal of Management Studies (IJMS)*, 19 (4), 863-898. <http://doi.org/10.22059/ijms.2025.377018.676767>



© The Author(s). **Publisher:** University of Tehran Press.
DOI: <http://doi.org/10.22059/ijms.2025.377018.676767>

1. Introduction

More than two decades have passed since the advent of online commerce. The issue of uncertainty is among the most critical concerns of accepting and using online commerce (Chen et al., 2020; Dimoka et al., 2012; Hallikainen & Laukkanen, 2018). The uncertainty stems from information scarcity (Mavlanova et al., 2016), information asymmetry (Horvath et al., 2021; Li et al., 2019; Mavlanova et al., 2016), non-self-disclosure (Stubb & Colliander, 2019), opportunism (Minkov & Hofstede, 2014), temporal and spatial separation of buyer and seller (Chen, Lu et al., 2019; Chiu et al., 2018; Dimoka et al., 2012; Fernando et al., 2018; Horvath et al., 2021), and ambiguity, all of which arise from hidden information or intentional or unintentional hidden action (Nikoofal & Gümüs, 2020). Several studies have addressed the uncertainty over two decades.

The first part of these studies focuses on the conceptualization and classification of different types of uncertainty including product, seller, buyer, process, platform, product adoption, and lifestyle adoption uncertainty which have been utilized in several studies. Each of the above-mentioned categories has sub-categories, as well. Based on some studies, product uncertainty includes the uncertainty of product description and description of product features (Chiu et al., 2018; Dimoka et al., 2012; Kim & Mugwe, 2017; Weathers et al., 2015), product performance, quality, and efficiency (Dimoka et al., 2012), the application of the product (Lu & Chen, 2021), sales process, and after-sales service of the product (Bai et al., 2015; Shokouhyar et al., 2020). Uncertainty of product compatibility includes product mismatch with intended use (Lu & Chen, 2021), buyer's preferences, taste (Kim & Krishnan, 2015), and lifestyle (Chen, Cenfetelli et al. 2019), non-compliance of the product with the original one presented online (Weathers et al., 2015), and non-compliance of the product with the buyer's needs (Hong & Pavlou, 2014). The uncertainty of the seller includes the uncertainty of their characteristics (Bai et al., 2015; Dimoka et al., 2012; Ghose, 2011; Tang et al., 2023; Qiu & Benbasat, 2005) and professional behavior during online transactions (Fernando et al., 2018; Hong & Pavlou, 2014; Parasuraman et al., 2005; Pavlou et al., 2007). The buyer's uncertainty includes the uncertainty of their preferences, tastes, desires (Chen et al., 2022; Kim & Krishnan, 2015), needs (Shah et al., 2019), characteristics (Van Nguyen et al., 2020), and professional behavior during the transaction. Platform uncertainty includes platform design uncertainty (Chen, Lu et al., 2019), platform quality uncertainty (Kolotylo-Kulkarni et al., 2021; Ter Huurne et al., 2017), information security uncertainty (Horvath et al., 2021), privacy uncertainty (Horvath et al., 2021; Kolotylo-Kulkarni et al., 2021), authentication uncertainty (Lee & Koo, 2012), encryption and integrity on the platform (Ter Huurne et al., 2017), platform interaction uncertainty (Hussain et al., 2021), and platform content uncertainty (Chao et al., 2014). Process uncertainty means the uncertainties which can occur during the transaction process (Isa et al., 2016), such as that of the packaging and mail status, transportation and logistics (Giuffrida et al., 2021; Hermawan et al., 2021), payment (Guo et al., 2021; Hermawan et al., 2021), transaction time, and after-sales service (Zeithaml et al., 2002). Some studies focused on attitude uncertainty in online business (Chen et al., 2024; Technakarawin & Sun, 2023). As observed, uncertainty is reported in all of the components in the online transaction due to the time and place separation of the buyer and seller (Horvath et al., 2021).

The second part of uncertainty studies seeks to identify approaches by which the uncertainty in an online transaction can be checked. Some studies directly focused on uncertainty, applying the aforementioned categories and their subgroup indicators as measures of uncertainty. A number of studies with concepts such as trust development, trust transfer, and risk reduction examined the concept of uncertainty (Lee et al., 2018). In these studies, trust indicators were considered as a matter of reducing uncertainty (Bauman & Bachmann, 2017), and the literature of the field of uncertainty was expanded to that of the concept of trust (Al-Adwan, Alrousan et al. 2022). In addition, the risk due to the existence of uncertainty in online transactions was sometimes included in uncertainty studies (Kiran et al., 2020). Based on this relationship, the trust and risk were somehow included in uncertainty studies. Therefore, their metrics and indices can be employed to measure uncertainty. The topic of attitude was investigated in relation to uncertainty, and a concept called uncertainty of attitude was proposed in recent studies (Technakarawin & Sun, 2023). The role of uncertainty as a mediating or dependent factor on the acceptance of online business was addressed (Al-Adwan, Al-Debei et al. 2022; Chen, Cenfetelli et al. 2019; Guo et al., 2021). Furthermore, electronic word-of-mouth, as another factor affecting uncertainty, was reviewed in several studies (De Pelsmacker et al., 2018; Filieri et al., 2015; Soleimani, 2022).

The third part of the studies sought to identify uncertainty reduction mechanisms. Here are some pointers to help online shoppers reduce their uncertainty. Some of these mechanisms have existed since e-commerce such as credibility and quality of information (Al-Adwan & Yaseen, 2023; Lei et al., 2023; Prendergast et al., 2010), source credibility (Filieri et al., 2015; Sussman & Siegal, 2003; Zhang et al., 2014), brand awareness (Fan et al., 2021; Guo et al., 2021; Kolotylo-Kulkarni et al., 2021; Lu et al., 2014), seller benevolence (Benbasat & Wang, 2005; Gefen, 2002; Lu et al., 2016; Pavlou, 2002; Qiu & Benbasat, 2005; Pavlou & Dimako, 2006), platform reputation (Hsiao et al., 2010; Hussain et al., 2021), popularity and seller reputation (Al-Adwan & Yaseen, 2023; De Vries et al., 2012; Du et al., 2019; Kanani & Glavee-Geo, 2021; Lahuerta-Otero et al., 2018; Lardo et al., 2017; Read et al., 2019; Tang & Chen, 2020; Wu et al., 2019), soft return policies (Al-Adwan, Al-Debei et al. 2022; Kanani & Glavee-Geo, 2021; Mavlanova et al., 2016), and third-party guarantees (Fan et al., 2021; Dimoka et al., 2012; Kim & Mugwe, 2017; Ter Huurne et al., 2017). To reduce uncertainty, new mechanisms emerged, which were regarded as social commerce constructs (Hajli, 2015). These structures, which originated from the concept of Web 2, as central (main) or peripheral (peripheral) signs, help reduce information asymmetry, resulting in affecting various types of uncertainty (Horvath et al., 2021; Kanani & Glavee-Geo, 2021). The new trend of uncertainty studies focuses on this new paradigm of online commerce. A critical part of the signs created by the Web 2 structure can reduce various types of uncertainty (Li et al., 2019). Social commerce constructs include ratings, reviews (Li, 2019; Lin et al., 2018; Van Nguyen et al., 2020), recommendations (Sukrat & Papasratorn, 2018), referrals, communities, and forums (Al-Adwan, Alrousan et al. 2022; Friedrich et al., 2021), which reduce the types of uncertainty.

This study aims to identify the uncertainty reduction factors in online commerce platform by focusing on social commerce constructs. Influencing the uncertainty in online commerce is considered as the most vital potential of social commerce (Li et al., 2018). Social commerce platforms exist in two different forms. In the first design, there is an e-commerce site with social one and Web 2 structures. In the second case, there is a social media site where exchange and trading mechanisms are established (Huang & Benyoucef, 2015). Web 2 structures contribute to the business process in both types of social commerce implementations.

The present study seeks to conduct a systematic review for the uncertainty in online transactions to identify the mechanisms, approaches, and factors which have reduced uncertainty during the last two decades. To this aim, the intended sources are found and uncertainty reduction mechanisms are identified by creating a systematic review protocol. Then, a cognitive map is drawn by reviewing the studies to reduce uncertainty in online transactions. Finally, the studies, which focus on each of the uncertainty mechanisms in terms of the theories, social commerce constructs, dependent-independent and mediating factors, as well as the discussed time frames, are presented in the form of graphic diagrams and text analysis instruments.

2. Method

Based on the evidence-based software engineering (EBSE) policy, three phases were proposed for the systematic review of literature, including planning, implementing, and reporting the results (EBSE, 2007). All steps of the SLR methodology in this research are shown in Figure 1. An official protocol was created during the planning to conduct a systematic review of the literature. The protocol contained the details related to the research strategy, which was based on intended questions, inclusion/exclusion criteria, quality assessment criteria, data extraction strategy, along with data synthesis and analysis guidelines (Bano & Zowghi, 2015). The protocol was pilot tested for discussing the perfectness of the search string, correctness of inclusion/exclusion criteria, and data extraction guidelines of the present study (Pouti et al., 2020). Then, the updated version of the protocol was sent to two external reviewers who were regarded as experts in the field. The reviewers recommended some changes regarding the research question, followed by incorporating inclusion/exclusion criteria related to the scope of SLR into the protocol. In the next procedure, the steps of the protocol were redefined during the implementation. The following subsections explain the planning of the review.

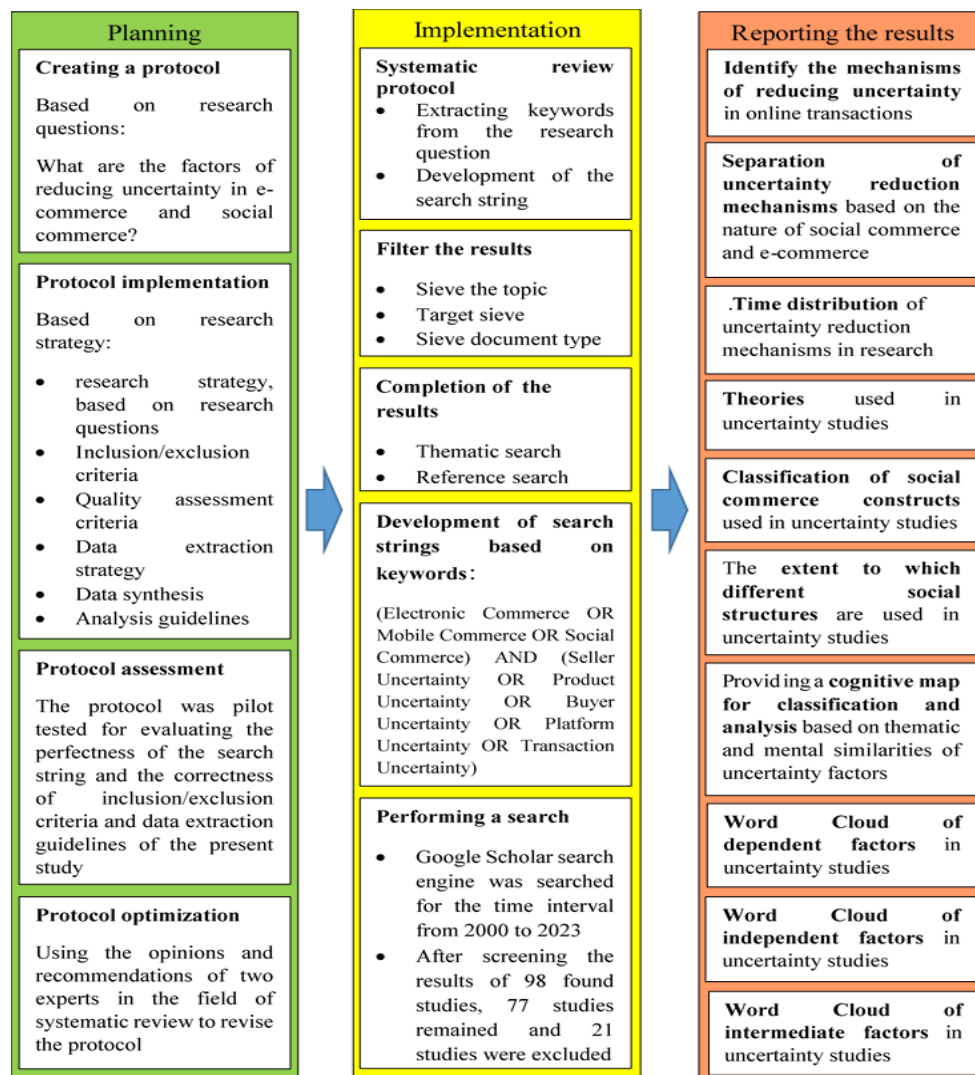


Fig. 1. Methodological Steps of the SLR Based on EBSE Policy

2-1. Systematic Review Protocol of Literature

This study aims to analyze the factors of reducing uncertainty in electronic and social commerce. Key words were extracted based on the research questions.

• Development of the search string

Keywords and their synonyms were used to develop the search string. To identify the key factors, the main ones, which create uncertainty in online transactions, were utilized and combined with the types of online transactions in the form of a search string (Table 1):

Table 1. Development of Search Strings Based on Keywords

All Kinds of Online Transactions	Types of Uncertainty
Electronic commerce	Uncertainty of the seller
Mobile commerce	Product uncertainty
Social commerce	Uncertainty of the buyer
Online commerce	Platform uncertainty
	Transaction uncertainty

(Electronic commerce or mobile commerce or social commerce) and (seller uncertainty or product uncertainty or buyer uncertainty or platform uncertainty or transaction uncertainty)

The above-mentioned field was searched in the Google Scholar search engine for the time interval 2000-2023, and the results were checked until the density of related ones on the page was zero, resulting in obtaining 98 studies.

2-2. Filtering the Results

- **Sieve the topic**

Some of the studies in the field of electronic, mobile, and social commerce were not related to the uncertainty, leading to their exclusion.

- **Target sieve**

The studies, which were conducted on uncertainty reduction mechanisms theoretically or practically and directly or indirectly, were expected to be found. Therefore, other studies were excluded from the results

- **Sieve document type**

The results excluded from the review included articles and headlines of news publications such as forbs, economist, and trade, book introduction pages of websites, such as Amazon, commercial or analytical articles on personal or company blog pages, a list of journal archives, theses, articles by consulting groups, such as the Boston Consulting Group, project reports, national business reports and analyses, articles by experts in Deloitte business publications, e-commerce trend reports, and statistical reports of e-commerce companies.

Totally, 77 studies remained and 21 were excluded. The resulting studies were assessed after the initial screening to find uncertainty reduction mechanisms. Then, the introduction, model, hypotheses or questions, and results were reviewed and recorded, separately. The uncertainty reduction is either evaluated as a dependent or as a mediating factor, which affects the acceptance, attitude, trust, risk, willingness to buy, sales volume, and satisfaction.

2-3. Completing the Results

- **Thematic search**

Based on the results, the trust, willingness to buy and accept, risk, attitude, and social business structures were affected indirectly or by uncertainty in online business. Therefore, the issues were searched again by combining each of the above-mentioned keywords with the previous string. Here, the most thematic connections were related to trust and willingness to buy, which usually applied uncertainty reduction mechanisms as dependent or mediating factors, or social business structures, which depended on the mechanism and reduced uncertainty. Finally, 27 studies were added to the previous references.

- **Reference search**

Based on the results, a number of studies were found and their references were examined. Totally, nine related references were not found in the previous methods.

It is worth noting that the initial screening was conducted based on the aforementioned method.

3. Results

This section seeks to identify uncertainty reduction mechanisms in online business as the main question of the study. Based on the systematic review, 171 mechanisms were identified. To this aim, the introduction, model, hypotheses, and results were identified in addition to abstract. Some of these mechanisms are common between electronic and social commerce, such as return policy or brand awareness, while some are specific to social commerce with the web 2 structures and user-generated content. Table 1 indicates the identified mechanisms and their reference numbers which are provided in Appendix 1. These divers and extensive mechanisms cover the entire purchasing process and entities which play a role in this process.

3-1. Uncertainty Reduction Mechanisms

This study aims to identify the mechanisms of reducing uncertainty in online transactions during the last two decades. To this aim, 171 different mechanisms were identified. Some of these uncertainty reduction mechanisms, which are specific to social commerce based on social structures, create the ability to reduce uncertainty such as online consumer reviews, seller ratings, and ratings, as well as the display of terms of use with live streaming. Some others are common between electronic and social commerce, such as return policy, brand awareness, source credibility, and seller reputation or commercial contracts, representing their classification and frequency of use over two decades. Figure 2 shows the factors employed more than three times due to their multiplicity.

As illustrated, some uncertainty reduction factors are specific to social commerce, while some others are common between social and electronic commerce.

3-2. Time Distribution of Studies

Studies related to the mechanisms of reducing uncertainty in terms of time include different time periods, indicating the amount of attention to each factor during the above-mentioned time period. Figure 3 demonstrates the time periods of interest related to each uncertainty reduction factor. As displayed, the blue and red marks represent the beginning and end of the factor study period, respectively. Among the specific factors of social commerce, the widest study period in terms of time is related to online consumer reviews.

3-3. Theories Used in Uncertainty Studies

The utilized theories are among the significant topics in uncertainty studies in online transactions. Totally, 79 different theories were applied in 113 studies. However, a few studies did not employ any fundamental basic theory, while some used more than one theory. Figure 4 shows the theories utilized more than once such as signaling, dual processing, uncertainty reduction, trust transfer, rational action, planned behavior, uncertainty, customer behavior, documentation, social support, and social exchange, as well as technology acceptance and elaboration likelihood model.

The diversity of theories scope is considered as a critical point in their application, indicating the complex and multidimensional nature of the uncertainty factor. A large number of theories are related to accepting and applying innovation such as technology acceptance model and theories like planned behavior and rational action. Some others focus on the social support, exchange, presence, learning, capital, and identity theory. Some others assess behavioral and processing models, such as AIDMA (attention, interest, desire, memory, and action), AISAS (attention, interest, search, action, and share), and utilitarian and hedonic motivations framework, as well as theories like dual processing, human information processing, consumer behavior, stimulus-organism-response, and affective response-satisfaction. Probability and uncertainty theories include uncertainty reduction, uncertainty, trust transfer, and trust formation, as well as models such as online trust creation, trust, and elaboration likelihood. Theories related to transaction and business include agency, economic, public relations, purchase effort,

Specific to social commerce										Common with e-commerce									
Online Consumer Review, 27										Platform credibility, 19									
Matching individual needs with recommendations and reviews, 17										Brand awareness, 18									
Display the product in live stream, 16										Source credibility, 12									
Platform interaction, 9	Review or recommendation rating, 9			Resolving the uncertainty of customer service expectations, 9			Emotional state of familiarity, 9			Credit and reputation of the seller, 12	Quality of argument, 10	Popularity of the platform, 10	Return Policy, 10	Third Party Informants, 9					
Display terms of use, 14	Sponsorship recommendations, 7			Referral to other brands, 7			Emotional state of intimacy, 7			The way the seller responds to feedback, 7			Number of feedbacks or reviews checked, 6						
Comments, 13	Site stickiness, 7			Similarity of individual preferences with recommendations, 6			Referral to other people's opinions, 5			Interaction with the seller, 5			Security risk efficiency and performance, 4			Attitudes for privacy concerns in online self-disclosure, 4			
Cognitive status of social support, 11	Credibility of review, 7			Solving the issue of demand uncertainty, 6			Credibility and reputation of the seller, 5			Occurrence of positive and negative emotions in review, 5			Proportion of positive and negative reviews, 4			Balanced reviews, 4			
Number of negative and positive reviews, 10	Cognitive state of social presence, 7			Reviewer rating, 5			Social capital of the seller, 5			Seller rating and evaluation, 4			Similarity of individual values, 4			Word of mouth, 4			

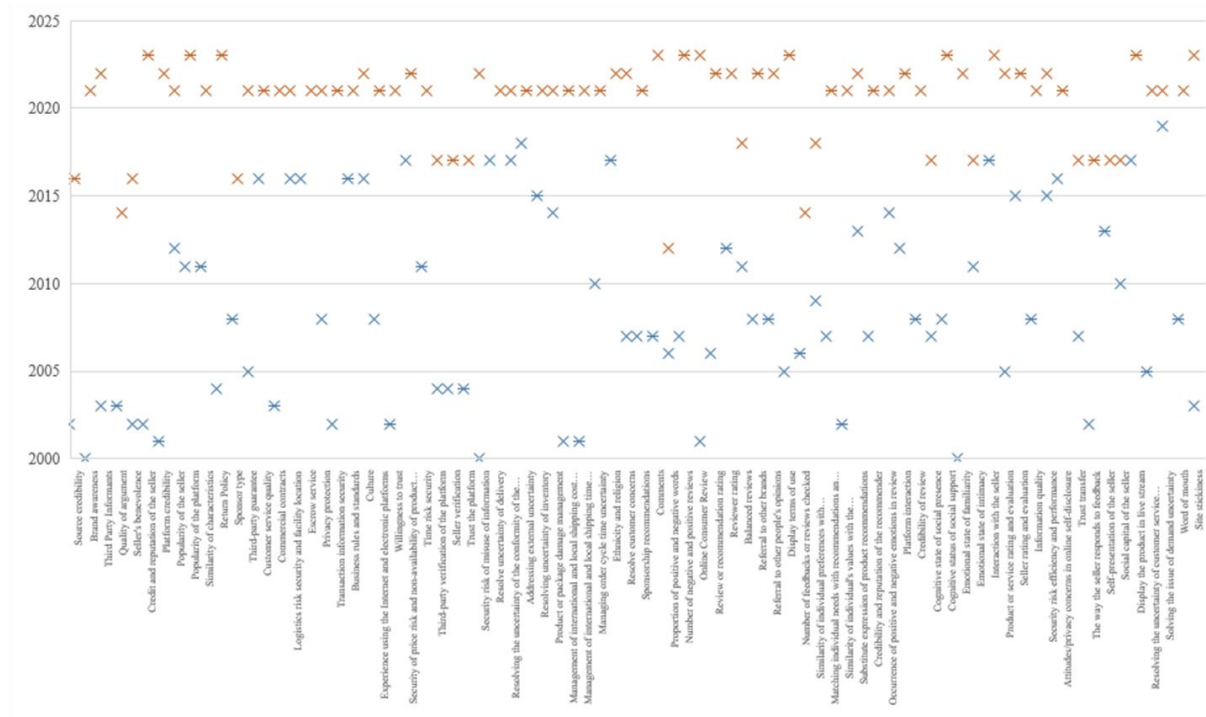


Fig. 3. Time Distribution of Uncertainty Reduction Mechanisms in Research

marketing systems, actor network, social agency, and expected utility, as well as models such as econometric modeling, sharing economy, and group buying. Culture-related theories include Hofstede's cultural dimensions and national culture theory. Theories related to customers include emotional responses based on consumption, swift guanxi, valence framework, mean-ends chain of lifestyle (MECL), expectation confirmation, effort in purchase, Gossen's marginal utility, expected utility, and risks in consumer behavior, as well as chance-constrained model. Theories related to conditions and environment include attribution, contingency, socio-cognitive, choice, e-WOM, and signaling.

3-4. Social Commerce Constructs

Applying social commerce constructs to reduce uncertainty is among the significant points in examining the uncertainty in recent studies. A review study was conducted on the type of structures due to their number. Totally, 70 different social constructs in social commerce platforms were identified in the studies (Figure 5). The most commonly used structures related to online consumer reviews include consumer recommendations, e-WOM, product ratings, virtual communities, third-party recommendations, review ratings, comments, and the live streams. Web 2 structures help potential customers minimize ambiguities and information asymmetry by enabling content creation by third parties, including consumers and previous buyers of the intended product or service. Different platforms offer diverse structures. Some of these structures are usually combined with each other in each platform. The proposed groups for social structures in the context of business activities included evaluation, rating, discussion, opinion, live interaction, and group structures, as well as sharing, feedback, recommendation, referral, and popularity constructs. Table 2 shows the structures achieved from the systematic review.

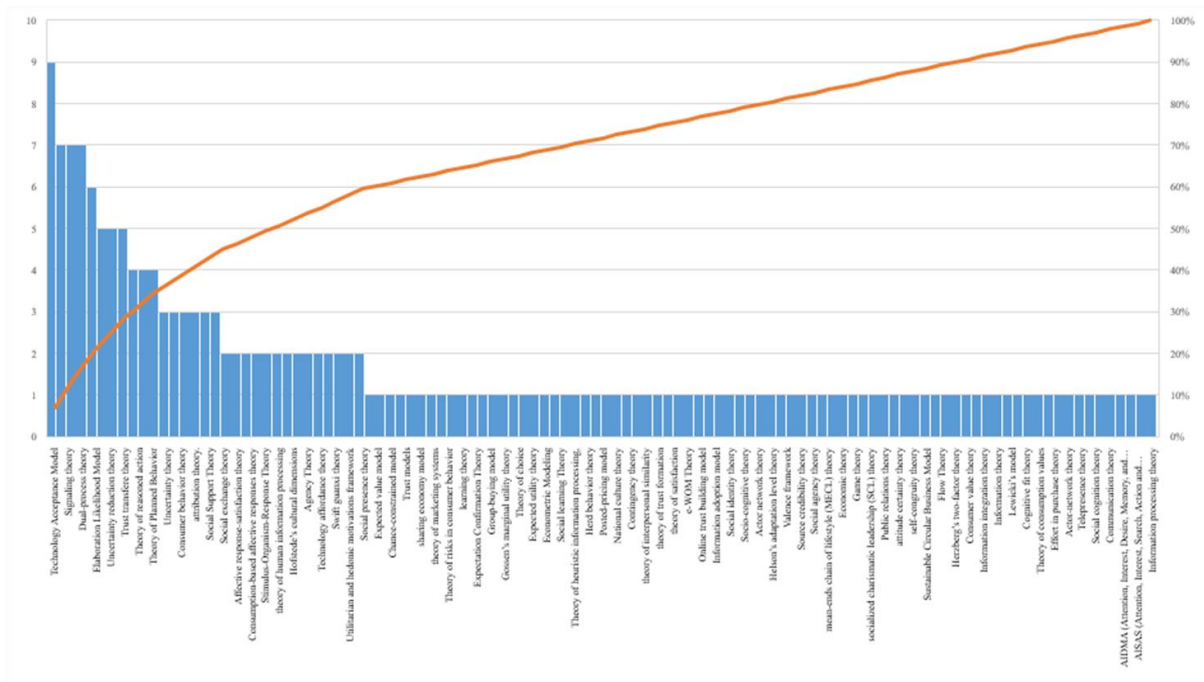


Fig. 4. The Extent of Application of Different Theories in Uncertainty Studies

Table 2. Social Commerce Constructs Employed in Uncertainty Studies

Social Constructs Titles	Social Constructs Types
1 Evaluation structures	Online consumer review, product review blogs, and endorsements
2 Rating structures	Reviewer rating, product ranking, and review rating
3 Discussion structures	Judgment, consultation, online discussions, e-WOM, and FAQs
4 Opinion structures	Customer opinions, consumer testimonials, and comments
5 Live interaction structures	Live helps, information flows, online helps, social interactions, livestreams, visible communication, real time interactivity, live chats, and listening to talk
6 Group structures	Online forums, channels, virtual community, campaigns, and discussion groups
7 Sharing constructs	Text sharing, profile sharing, image sharing, voice sharing, multimedia product description sharing, contact details sharing, identity descriptive information, idea sharing, video sharing, preference sharing, attitude sharing, information sharing, scores sharing, interest sharing, sharing emotions, experience sharing, and multi-group knowledge sharing
8 Feedback constructs	Feedback and responses
9 Recommendation constructs	Consumer recommendations, advice, third party recommendations, and suggestions
10 Referral constructs	Affiliations, referrals, social referents, and group of reference
11 Popularity constructs	Like, following, comfort, and encouragement
12 Signal constructs	Information signals, cues, 3D avatars, and information guidebooks
13 Tagging constructs	Part of speech tagger and annotate each word
14 Expression constructs	Storytelling with specific usage experience, bulletin boards, express interest and concern, information disclosure, self-disclosure, and vicarious expression

3-5. Cognitive Mapping of Uncertainty Reduction

The multiplicity of factors and uncertainty reduction mechanisms make it difficult to investigate and categorize these factors. The present study seeks to provide a cognitive map for classification and analysis based on thematic and mental similarities of the aforementioned factors. This cognitive map helps understand the focus of uncertainty in the studies during the last two decades and can draw a road map for the future of uncertainty studies (Figure 6).

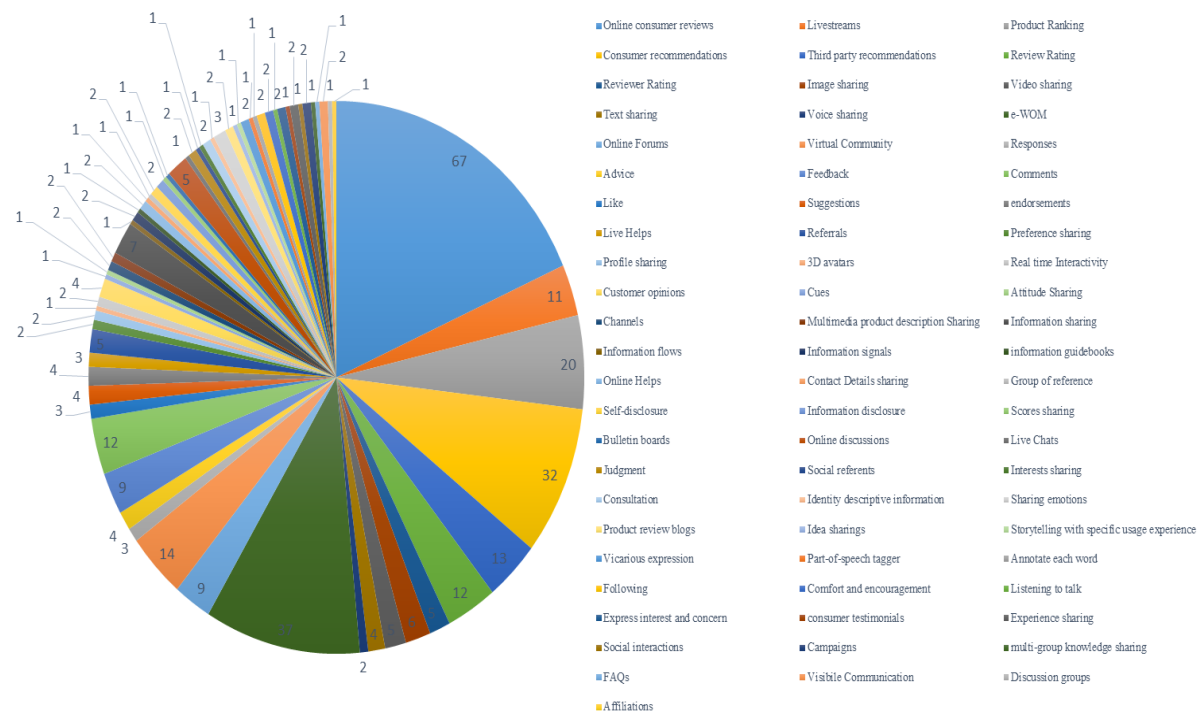


Fig. 5. The Amount of Use of Various Social Structures in Uncertainty Studies

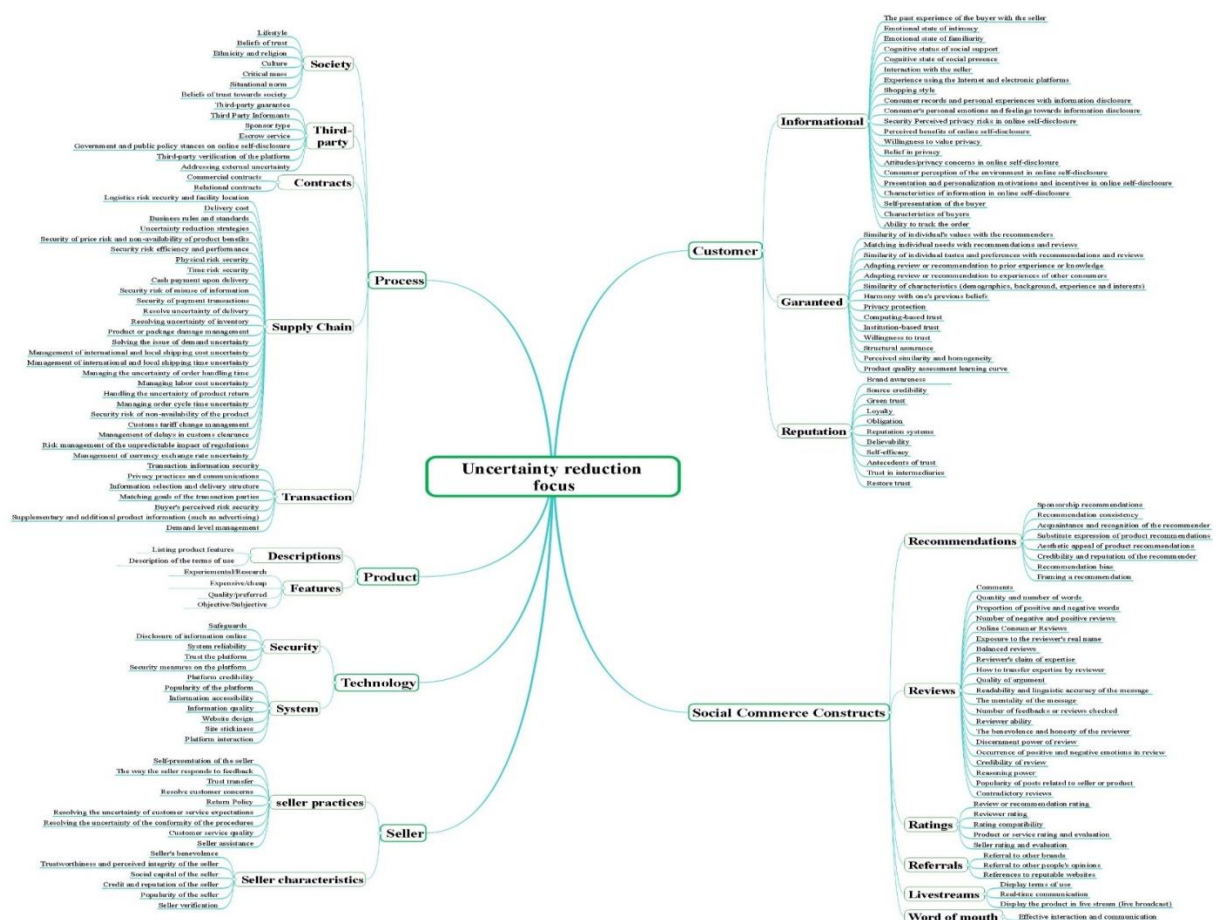


Fig. 6. Cognitive Mapping of Uncertainty Reduction Mechanisms in Online Commerce

In the case of dependent factors, the variety of words decreases, while the presence of some others is more obvious. Words such as purchase, intention, review, behavior, product, and consumer have attracted more attention. Intermediate words occur in the case of models with three layers and more. Some words show a high density although their variety is less. Words such as trust, product, perceived quality, usefulness, consumer, information, and attitude are among the most used ones.



Fig. 9. Word Cloud of Intermediate Factors in Uncertainty Studies

4. Conclusion

In the conclusion section, a summary of the results obtained from the systematic review will be presented in the form of the infographic. First, a time category for uncertainty reduction factors was considered and the factors used in uncertainty reduction in online transactions are shown over five time periods (Figure 10).

Another issue of debate was the use of different theories in the studies, which was discussed in detail in the relevant section; out of the 79 theories identified, 13 were the most widely used (Figure 11). Some of the theories are related to the technology acceptance literature, such as the technology acceptance model, the theory of reasoned action, and the theory of planned behavior.

Another notable topic, which is also the main focus of this systematic review, is the social commerce constructs that lead to uncertainty reduction. A comprehensive classification based on studies was presented in the relevant section; however, in brief, the 10 social constructs in Figure 12 were most commonly used in uncertainty reduction studies in online transactions.

Given the diversity of topics that can be investigated as uncertainty reduction mechanisms in online transactions, a cognitive map was created in this study based on a systematic review of studies. If we briefly consider the output of this cognitive map as the thematic focus of the studies, six main themes are noteworthy, as shown in Figure 13. In this study, 171 uncertainty reduction mechanisms were identified. In order to identify the most important keywords in this study, word cloud analysis was used. Based on the results obtained, the most important keywords can be shown in three categories based on their type of use in uncertainty reduction studies: dependent factors, independent factors, and intermediate factors (Figure 14).

The oldest uncertainty reduction factors (between 2000 and 2005)	The older uncertainty reduction factors (between 2005 and 2010)
• Source credibility • Brand awareness • Third party informants • Quality of argument • Seller 's benevolence • Credit and reputation of the seller • Platform credibility • Return policy • Third party guarantee • Relational contracts • Commercial contracts • Transaction information security • Willingness to trust • Third party verification of the platform • Seller verification • Trust the platform • Security risk of misuse of information • Management of international and local shipping cost uncertainty • The past experience of the buyer with the seller • Management of international and local shipping time uncertainty • Online consumer review • Similarity of individual's values with the recommenders • Emotional state of familiarity • Product or service rating and evaluation • Harmony with one's previous beliefs • The way the seller responds to feedback • Resolving the uncertainty of customer service expectations • Recommendation consistency • Computing-based trust • The mentality of the message • Trust transfer • Display terms of use • Supplementary and additional product information (such as advertising) • Safeguards • Self-efficacy • Management of delays in customs clearance • Antecedents of trust • Effective interaction and communication • Situational norm • Customs tariff change management • Reviewer's claim of expertise • Site stickiness	• Sponsor type • Sponsorship recommendations • Comments • Proportion of positive and negative words • Number of negative and positive reviews • Review or recommendation rating • Exposure to the reviewer's real name • Adapting review or recommendation to prior experience or knowledge • Adapting review or recommendation to experiences of other consumers • How to transfer expertise by reviewer • Referral to other brands • Referral to other people's opinions • Description of the terms of use • Number of feedbacks or revisions checked • Reviewer ability • The benevolence and honesty of the reviewer • Acquaintance and recognition of the recommender • Similarity of individual tastes and preferences with recommendations and reviews • Matching individual needs with recommendations and reviews • Aesthetic appeal of product recommendations • Credibility and reputation of the recommender • Rating compatibility • Recommendation bias • Critical mass • Platform interaction • Credibility of review • Reasoning power • Framing a recommendation or review • Cognitive state of social presence • Cognitive status of social support • References to reputable websites • Privacy protection • Information quality • Experience using the internet and electronic platforms • Shopping style • Characteristics of buyers • Seller characteristics • Social capital of the seller • Beliefs of trust towards society • Demand level management • Managing order cycle time uncertainty • Security risk of non-availability of the product • Resolve customer concerns • Restore trust • Word of mouth • Reliable system • Product endorsements

Figure 10. Summary of the Temporal Classification of Factors Reducing Uncertainty in Online Transactions

New factors of uncertainty reduction (between 2010 and 2015)	Newer factors of uncertainty reduction (between 2015 and 2020)
• Fit with lifestyle • Website design • Management of currency exchange rate uncertainty • Risk management of the unpredictable impact of regulations • Ability to track the order • Handling the uncertainty of product return • Managing labor cost uncertainty • Managing the uncertainty of order handling time • Product or package damage management • Resolving uncertainty of inventory • Buyer's perceived risk security • Product quality assessment learning curve • Security measures on the platform • Self-presentation of the seller • Reputation systems • Trusting beliefs • Product description • Characteristics of information in online self-disclosure • Presentation and personalization motivations and incentives in online self-disclosure • Attitudes/privacy concerns in online self-disclosure • Belief in privacy • Time risk security • Security risk efficiency and performance • Seller rating and evaluation • Seller assistance • Emotional state of intimacy • Popularity of posts related to seller or product • Discernment power of review • Similarity of characteristics (demographics, background, experience, and interests) • Popularity of the platform • Popularity of the seller • Substitute expression of product recommendations • Listing product features • Readability and linguistic accuracy of the message • Balanced reviews • Reviewer rating • Quantity and the number of words	• Recommendations • Trust in intermediaries • Ethnicity and religion • Imitation • Solving the issue of demand uncertainty • Addressing external uncertainty • Resolving the uncertainty of the conformity of the procedures • Resolve the uncertainty of delivery • Display the product in live stream (live broadcast) • Believability • Perceived similarity and homogeneity • Loyalty • Green trust • Government and public policy stances on online self-disclosure • Characteristics of information in online self-disclosure • Disclosure of information online • Consumer perception of the environment in online self-disclosure • Willingness to value privacy • Security Perceived privacy risks in online self-disclosure • Consumer records and personal experiences with information disclosure • Consumer's personal emotions and feelings towards information disclosure • Perceived benefits of online self-disclosure • Physical risk security • Time risk security • Security of price risk and non-availability of product benefits • Structural assurance • Culture • Information accessibility • Real-time communication • Business rules and standards • Escrow service • Interaction with the seller • Logistics risk security and facility location • Customer service quality
The latest uncertainty reduction factors (after 2020)	
• Delivery cost • Computing-based trust • Institution-based trust • Contradictory reviews • Uncertainty reduction strategies • Cash payment upon delivery • Privacy practices and communications • Information selection and delivery structure • Matching the goals of the transaction parties • Security of payment transactions • Trustworthiness and perceived integrity of the seller • The need to touch the product	

Continued Figure 10

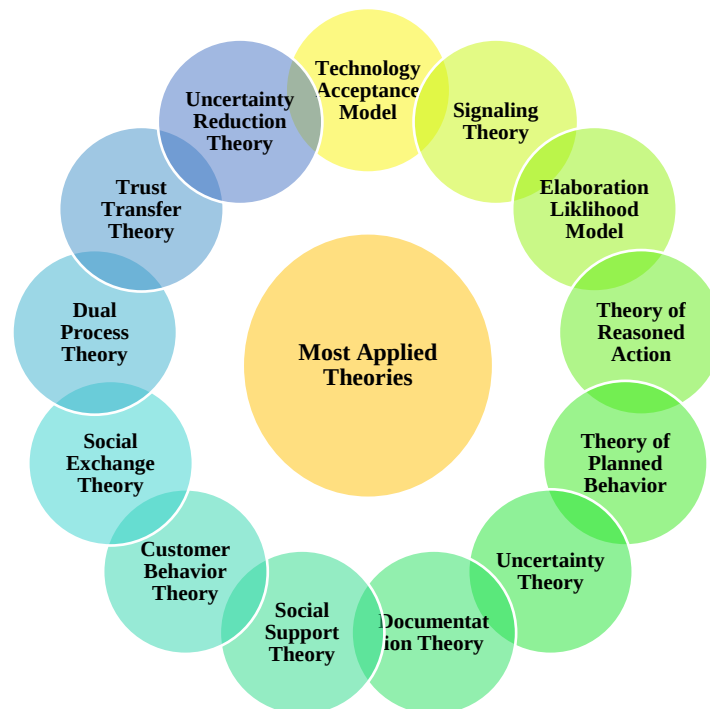


Fig. 11. Most Applied Theories



Fig. 12. Most Used Social Commerce Constructs

Most keywords as an independent factor	Most keywords as an dependent factor	Most keywords as an intermediate factor
•Purchase •Product •Online •Consumer •Behavior •Intention •Reviews •Trust •Annotation •Buy	•Uncertainty •Product •Perceived •Reviews •Information •Risk •Security •Quality	•Perceived •Attitude •Trust •Information •Reviews •Quality •Participation •Uncertainty •Usefulness •Involvement •Helpfulness

Fig. 13. The Most Thematic Focus of Uncertainty Reduction Studies



Fig. 14. Most Used Keywords in Uncertainty Reduction Studies

In the end, based on the systematic review conducted, several conclusions can be drawn:

1. Uncertainty is most commonly used in studies which aim to identify factors influencing customer purchase decisions and focus on pre-purchase stages.
2. An inextricable link is observed between the uncertainty and trust in the literature of online transactions. Risk, acceptance, and attitude are among the critical topics related to the uncertainty.
3. Uncertainty reduction mechanisms in online transactions utilize different approaches depending on the source of information which is supposed to solve the ambiguity and information asymmetry. Sometimes, the information is obtained from the seller, sometimes from consumers or potential customers, and sometimes, from a third party such as guaranteeing institutions, reviewers, and sponsors.
4. In all of the cases, social commerce constructs present new approaches to reduce uncertainty. In the case of the seller, image and video sharing, as well as live chat, help, and streaming can be applied to communicate with customers on social commerce platforms. Third-party organizations can provide potential customers with the needed information by creating virtual communities, forums, and campaigns. Some of these third-party organizations can achieve the customers' trust as neutral organizations by providing rating and recommendation systems, as well as dissection and description blogs. In addition, sponsors can play a critical role in completing the ambiguous information puzzle with blogs and recommendation systems. Reviewers offer various types of reviews with expertise and impartiality, leading to customer trust which attracts user generated content. Any user including potential customers, consumers, sellers, competitors, and suppliers can create content on these platforms and approve or reject the previous one. People can employ the learning curve of experiential evaluation to identify the correct content in such interactive spaces, despite probable biases or content generated by malicious people. Totally, 70 social structures were identified in 113 uncertainty studies, which were categorized and presented in 14 groups.
5. It is worth noting that reducing uncertainty is not only related to those of product distribution and sales. However, the entire supply chain should be analyzed and managed to reduce the uncertainty. In addition to the sales counter, as well as distribution and marketing of the product, several studies have been conducted to reduce uncertainty in the backstage stages, i.e., the initial stages of the supply chain, including the quality of product transfer, transportation and logistics time, customs tariffs, exchange rate stability regarding external products, location of facilities, inventory management of suppliers' warehouses, and personnel costs, all of which contribute to ensuring that the customer receives the product on time, intact, and at the exact cost specified.

6. A large number of theories ($N = 79$) have been used in uncertainty studies. Theories related to more than nine different conceptual and practical areas, including innovation acceptance, social and behavioral sciences, probability and uncertainty, trust, transaction and business, cultural structure, customer, and environment and conditions, as well as innovation acceptance and social theories, are utilized more than other ones.

References

- Al-Adwan, A.-S., & Yaseen, H. (2023). Solving the product uncertainty hurdle in social commerce: The mediating role of seller uncertainty. *Information Management Data Insights*, 3(1), 100169.
- Al-Adwan, A.-S., Al-Debei, M.-M., & Dwivedi, Y.-K. (2022). E-commerce in high uncertainty avoidance cultures: The driving forces of repurchase and word-of-mouth intentions. *Technology in Society*, 71, 102083. <https://doi.org/10.1016/j.techsoc.2022.102083>
- Al-Adwan, A.-S., Alrousan, M.-K., Yaseen, H., Alkufahy, A.-M., & Alsoud, M. (2022). Boosting online purchase intention in high-uncertainty-avoidance societies: A signaling theory approach. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 136. <https://doi.org/10.3390/joitmc8030136>
- Bai, Y., Yao, Z., & Dou, Y.-F. (2015). Effect of social commerce factors on user purchase behavior: An empirical investigation from renren.com. *International Journal of Information Management*, 35(5), 538–550.
- Bano, M., & Zowghi, D. (2015). A systematic review of the relationship between user involvement and system success. *Information and Software Technology*, 58, 148–169.
- Bauman, A., & Bachmann, R. (2017). Online consumer trust: Trends in research. *Journal of Technology Management and Innovation*, 12(2), 68–79.
- Benbasat, I., & Wang, W. (2005). Trust in and adoption of online recommendation agents. *Journal of the Association for Information Systems*, 6(3), 72–101.
- Chao, R. M., Chang, C. C., & Chang, W. Y. (2014). Exploring the antecedents of trust from the perspectives of uncertainty and media richness in virtual community. *International Journal of Web Based Communities*, 10(2), 176–187.
- Chen, X., Cenfetelli, R.-T., & Benbasat, I. (2019). The influence of e-commerce live streaming on lifestyle fit uncertainty and online purchase intention of experience products. In *Proceedings of the 52nd Hawaii International Conference on System Sciences* (pp. 5081–5090).
- Chen, X., Wang, J., & Wei, S. (2022). The role of situational normality, swift guanxi, and perceived effectiveness of social commerce institutional mechanisms: An uncertainty reduction perspective. *Industrial Management & Data Systems*, 122(12), 2609–2632.
- Chen, X., Wei, S., Ding, R., & Li, Y. (2024). Managing users' uncertainty in social commerce: The moderating role of cultural tightness. *Industrial Management & Data Systems*, 124(2), 666–697.
- Chen, Y., Lu, Y., Wang, B., & Pan, Z. (2019). How do product recommendations affect impulse buying? An empirical study on WeChat social commerce. *Information & Management*, 56(2), 236–248.
- Chiu, T.-S., Chih, W.-H., Ortiz, J., & Wang, C.-Y. (2018). The contradiction of trust and uncertainty from the viewpoint of swift guanxi. *Internet Research*, 28(3), 716–745.
- De Pelsmacker, P., Dens, N., & Kolomiiets, A. (2018). The impact of text valence, star rating and rated usefulness in online reviews. *International Journal of Advertising*, 37(3), 340–359.
- De Vries, L., Gensler, S., & Leeftang, P. S. H. (2012). Popularity of brand posts on brand fan pages: An investigation of the effects of social media marketing. *Journal of Interactive Marketing*, 26(2), 83–91.
- Dimoka, A., Hong, Y., & Pavlou, P.-A. (2012). On product uncertainty in online markets: Theory and evidence. *MIS Quarterly*, 36(2), 395–426.
- EBSE. (2007). *Guidelines for performing systematic literature reviews in software engineering* (EBSE Technical Report). Software Engineering Group, School of Computer Science and Mathematics, Keele University, and Department of Computer Science, University of Durham.
- Fan, M., Ammah, V., Dakhan, S.-A., Liu, R., Mingle, M., & Pu, Z. (2021). Critical factors of reacquainting consumer trust in e-commerce. *Journal of Asian Finance, Economics and Business*, 8(3), 561–573.
- Fernando, A. G., Sivakumaran, B., & Suganthi, L. (2018). Comparison of perceived acquisition value sought by online second-hand and new goods shoppers. *European Journal of Marketing*, 52(7/8), 1412–1438.
- Friedrich, T., Schlauderer, S., & Overhage, S. (2021). Some things are just better rich: How social commerce feature richness affects consumers' buying intention via social factors. *Electronic Markets*, 31(1), 159–180.
- Ghose, A., & Ipeiritos, P.-G. (2011). Estimating the helpfulness and economic impact of product reviews: Mining text and reviewer characteristics. *IEEE Transactions on Knowledge and Data Engineering*, 23(10), 1498–1512. <https://doi.org/10.1109/TKDE.2010.188>
- Giuffrida, M., Jiang, H., & Mangiaracina, R. (2021). Investigating the relationships between uncertainty types and risk management strategies in cross-border e-commerce logistics. *International Journal of Logistics Management*, 32(4), 1406–1433. <https://doi.org/10.1108/IJLM-04-2020-0163>
- Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management*, 35(2), 183–191. <https://doi.org/10.1016/j.ijinfomgt.2014.12.005>
- Hallikainen, H., & Laukkanen, T. (2018). National culture and consumer trust in e-commerce. *International Journal of Information Management*, 38(1), 97–106. <https://doi.org/10.1016/j.ijinfomgt.2017.07.002>

- Hong, Y., & Pavlou, P. (2014). Product fit uncertainty in online markets: Nature, effects and antecedents. *Information Systems Research*, 25(2), 328–344. <https://doi.org/10.1287/isre.2014.0520>
- Hsiao, K., Chuan-Chuan Lin, J., Wang, X., Lu, H., & Yu, H. (2010). Antecedents and consequences of trust in online product recommendations: An empirical study in social shopping. *Online Information Review*, 34(6), 935–953. <https://doi.org/10.1108/14684521011099388>
- Huang, Z., & Benyoucef, M. (2015). User preferences of social features on social commerce websites: An empirical study. *Technological Forecasting and Social Change*, 95, 57–72. <https://doi.org/10.1016/j.techfore.2014.03.005>
- Hussain, S., Li, Y., & Li, W. (2021). Influence of platform characteristics on purchase intention in social commerce: Mechanism of psychological contracts. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(1), 1–17. <https://doi.org/10.4067/S0718-18762021000100102>
- Isa, K., Khan, F., Rasli, A., Mdyusoff, R., & Isa, K. (2016). Impact of trust on online shopping: A systematic review of literature. *Advanced Review on Scientific Research*, 8(1), 1–8.
- Kanani, R., & Glavee-Geo, R. (2021). Breaking the uncertainty barrier in social commerce: The relevance of seller and customer-based signals. *Electronic Commerce Research and Applications*, 48, 101059. <https://doi.org/10.1016/j.elerap.2021.101059>
- Kim, J.-K., & Mugwe, P.-D. (2017). Investigating product uncertainties in online shopping: Evidence from Kenya. *Smart Media*, 6(1), 39–46.
- Kim, Y., & Krishnan, R. (2015). On product-level uncertainty and online purchase behavior: An empirical analysis. *Management Science*, 61(10), 1–19. <https://doi.org/10.1287/mnsc.2014.2063>
- Kiran, J., Omar, M., & Fernando, G. (2020). Strategies to manage the risks faced by consumers in developing e-commerce. *Insights into Regional Development*, 2(4), 774–783. [https://doi.org/10.9770/IRD.2020.2.4\(6\)](https://doi.org/10.9770/IRD.2020.2.4(6))
- Kolotylo-Kulkarni, M., Xia, W., & Dhillon, G. (2021). Information disclosure in e-commerce: A systematic review and agenda for future research. *Journal of Business Research*, 126, 221–238. <https://doi.org/10.1016/j.jbusres.2020.12.006>
- Lahuerta-Otero, E., Cordero-Gutiérrez, R., & De la Prieta-Pintado, F. (2018). Retweet or like? That is the question. *Online Information Review*, 42(5), 562–578. <https://doi.org/10.1108/OIR-04-2017-0132>
- Lardo, A., Dumay, J., Trequattrini, R., & Russo, G. (2017). Social media networks as drivers for intellectual capital disclosure. *Journal of Intellectual Capital*, 18(1), 63–80. <https://doi.org/10.1108/JIC-09-2016-0092>
- Lee, K.-T., & Koo, D.-M. (2012). Effects of attribute and valence of e-WOM on message adoption: Moderating roles of subjective knowledge and regulatory focus. *Computers in Human Behavior*, 28(5), 1974–1984. <https://doi.org/10.1016/j.chb.2012.05.018>
- Lee, S.-J., Ahn, C., Song, K., & Ahn, H. (2018). Trust and distrust in e-commerce. *Sustainability*, 10(4), 1015. <https://doi.org/10.3390/su10041015>
- Lei, J., Zhu, C., Yang, S., Wang, J., & Yu, Y. (2023). Influence of review properties in the usefulness analysis of consumer reviews: A review-based recommender system for rating prediction. *Neural Processing Letters*, 55, 1–20. <https://doi.org/10.1007/s11063-023-11180-2>
- Li, C.-Y. (2019). How social commerce constructs influence customers' social shopping intention? An empirical study of a social commerce website. *Technological Forecasting and Social Change*, 144, 282–294. <https://doi.org/10.1016/j.techfore.2017.11.026>
- Li, C.-Y., & Ku, Y.-C. (2018). The power of a thumbs-up: Will e-commerce switch to social commerce? *Information & Management*, 55(3), 340–357. <https://doi.org/10.1016/j.im.2017.09.001>
- Li, X., Zhuang, Y., Lu, B., & Chen, G. (2019). A multi-stage hidden Markov model of customer repurchase motivation in online shopping. *Decision Support Systems*, 120, 72–80. <https://doi.org/10.1016/j.dss.2019.03.005>
- Lin, H.-H., Yen, W.-C., Wang, Y.-S., & Yeh, Y.-M. (2018). Investigating consumer responses to online group buying service failures: The moderating effects of seller offering type. *Internet Research*, 28(4), 965–987. <https://doi.org/10.1108/IntR-04-2017-0161>
- Lu, B., & Chen, Z. (2021). Live streaming commerce and consumers' purchase intention: An uncertainty reduction perspective. *Information & Management*, 58(7), 103509. <https://doi.org/10.1016/j.im.2021.103509>
- Lu, B., Fan, W., & Zhou, M. (2016). Social presence, trust, and social commerce purchase intention: An empirical research. *Computers in Human Behavior*, 56, 225–237. <https://doi.org/10.1016/j.chb.2015.11.057>
- Lu, L.-C., Chang, W.-P., & Chang, H.-H. (2014). Consumer attitudes toward blogger's sponsored recommendations and purchase intention: The effect of sponsorship type, product type, and brand awareness. *Computers in Human Behavior*, 34, 258–266. <https://doi.org/10.1016/j.chb.2014.02.007>
- Mavlanova, A., Benbunan-Fich, A.-R., & Lang, G. (2016). The role of external and internal signals in e-commerce. *Decision Support Systems*, 87, 59–68. <https://doi.org/10.1016/j.dss.2016.04.009>

- Minkov, M., & Hofstede, G. (2014). A replication of Hofstede's uncertainty avoidance dimension across nationally representative samples from Europe. *Cross Cultural Management*, 14(2), 161–171. <https://doi.org/10.1108/CCM-03-2013-0051>
- Nikoofal, M. E., & Gümüs, M. (2020). Value of audit for supply chains with hidden action and information. *European Journal of Operational Research*, 285(3), 902–915. <https://doi.org/10.1016/j.ejor.2020.02.030>
- Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213–233. <https://doi.org/10.1177/1094670504271156>
- Pavlou, P. A. (2002). Institution-based trust in interorganizational exchange relationships: The role of online B2B marketplaces on trust formation. *The Journal of Strategic Information Systems*, 11(3–4), 215–243. [https://doi.org/10.1016/S0963-8687\(02\)00017-3](https://doi.org/10.1016/S0963-8687(02)00017-3)
- Pavlou, P.-A., & Dimoka, A. (2006). The nature and role of feedback text comments in online marketplaces: Implications for trust building, price premiums, and seller differentiation. *Information Systems Research*, 17(4), 392–414. <https://doi.org/10.1287/isre.1060.0106>
- Pavlou, P.-A., Liang, H.-G., & Xue, Y.-J. (2007). Understanding and mitigating uncertainty in online buyer-seller relationships: A principal-agent perspective. *MIS Quarterly*, 31(1), 105–136. <https://doi.org/10.2307/25148783>
- Pouti, N., Taghavifard, M. T., Taghva, M. R., & Fathian, M. (2020). A comprehensive literature review of acceptance and usage studies in the social commerce field. *International Journal of Electronic Commerce Studies*, 11(2), 119–166. <https://doi.org/10.7903/ijecs.1880>
- Prendergast, G., Ko, D., & Siu Yin, V. Y. (2010). Online word of mouth and consumer purchase intentions. *International Journal of Advertising*, 29(5), 687–708. <https://doi.org/10.2501/S0265048710201427>
- Qiu, L., & Benbasat, I. (2005). Online consumer trust and live help interfaces: The effects of text-to-speech voice and three-dimensional avatars. *International Journal of Human-Computer Interaction*, 19(1), 75–94. https://doi.org/10.1207/s15327590ijhc1901_6
- Read, W., Robertson, N., McQuilken, L., & Ferdous, A.-S. (2019). Consumer engagement on Twitter: Perceptions of the brand matter. *European Journal of Marketing*, 53(9), 1905–1933. <https://doi.org/10.1108/EJM-08-2017-0552>
- Shah, A. M., Yan, X., Shah, S. A. A., Shah, S. J., & Mamirkulova, G. (2019). Exploring the impact of online information signals in leveraging the economic returns of physicians. *Journal of Biomedical Informatics*, 98, Article 103272. <https://doi.org/10.1016/j.jbi.2019.103272>
- Shokouhyar, S., Shokoohyar, S., & Safari, S. (2020). Research on the influence of after-sales service quality factors on customer satisfaction. *Journal of Retailing and Consumer Services*, 56, Article 102139. <https://doi.org/10.1016/j.jretconser.2020.102139>
- Soleimani, M. (2022). Buyers' trust and mistrust in e-commerce platforms: A synthesizing literature review. *Information Systems and e-Business Management*, 20(1), 57–78. <https://doi.org/10.1007/s10257-021-00543-6>
- Stubb, C., & Colliander, J. (2019). "This is not sponsored content" – The effects of impartiality disclosure and e-commerce landing pages on consumer responses to social media influencer posts. *Computers in Human Behavior*, 98, 210–222. <https://doi.org/10.1016/j.chb.2019.04.024>
- Sukrat, S., & Papasratorn, B. (2018). An architectural framework for developing a recommendation system to enhance vendors' capability in C2C social commerce. *Social Network Analysis and Mining*, 8(1), 1–13

Table 1A. Uncertainty reduction mechanisms in online commerce

Factors	References
1 Sponsorship recommendations	R77; R301; R45; R190; R201; R171; R69
2 Source credibility	R148; R301; R30; R47; R177; R292; R72; R73; R67; R245; R291; R111
3 Comments	R36; R58; R160; R201; R131; R167; R137; R260; R90; R122; R114; R254
4 Quantity and number of words	R15; R122
5 Proportion of positive and negative words	R47; R15 ; R202; R49
6 Number of negative and positive reviews	R122; R201; R293; R167; R60; R260; R36; R160; R147; R4
7 Brand awareness	R259; R241; R178; R28; R266; R290; R171; R245; R90; R141; R69
8 Online Consumer Review	R24; R143; R44; R49; R185; R190; R83; R30; R47; R294; R302; R203; R15; R75; R245; R293; R19; R58; R137; R243; R6; R69; R4; R114
9 Review or recommendation rating	R15; R47; R76; R73; R59; R44; R49; R137; R5; R156
10 Reviewer rating	R15; R255; R73; R137; R5
11 Exposure to the reviewer's real name	R15; R76
12 Adapting review or recommendation to prior experience or knowledge	R15; R60; R294
13 Adapting review or recommendation to experiences of other consumers	R15; R47; R156
14 Balanced reviews	R272; R270; R147
15 Reviewer's claim of expertise	R270; R250; R76
16 How to transfer expertise by reviewer	R270; R102; R257
17 Referral to other brands	R131; R270; R290; R90; R6
18 Referral to other people's opinions	R188; R131; R57; R270; R5
19 Description of the terms of use	R269; R270; R90
20 Third Party Informants	R16 ; R81; R131; R105; R182; R115; R19; R255; R243; R264
21 Recommendation consistency	R47; R190; R292
22 Quality of argument	R250; R47; R48; R291; R11; R23; R46; R130; R150; R201
23 Readability and linguistic accuracy of the message	R158; R83; R15
24 The mentality of the message	R83; R197
25 Display terms of use	R172; R101; R133; R114; R90; R39; R303; R175; R200; R34; R158; R273; R218; R176
26 Listing product features	R270
27 Seller's benevolence	R80; R206; R20; R48; R218; R105; R210; R171
28 Credit and reputation of the seller	R14, R80; R132; R131; R136; R133; R121; R255; R4; R243; R141; R69
29 Number of feedbacks or revisions checked	R210; R293; R49; R61; R62; R201
30 The past experience of the buyer with the seller	R207; R255
31 Platform credibility	R112; R95; R105; R275; R183; R37; R132; R184; R228; R165; R299; R131; R255; R147; R242; R243
32 Reviewer ability	R166; R105
33 The benevolence and honesty of the reviewer	R166; R105; R115
34 Acquaintance and recognition of the recommender	R66; R305; R279
35 Similarity of individual tastes and preferences with recommendations and reviews	R170; R305; R66; R101; R279; R290; R304; R156
36 Matching individual needs with recommendations and reviews	R172; R101; R279; R211; R71; R54; R296; R298; R161; R306; R53; R198; R233; R38; R127; R219; R263; R156
37 Similarity of individual's values with the recommenders	R172; R158; R50; R240; R304
38 Substitute expression of product recommendations	R305; R158; R106; R158; R40; R6
39 Aesthetic appeal of product recommendations	R305; R204
40 Credibility and reputation of the recommender	R270; R288; R278; R255; R69
41 Popularity of the seller	R122; R252; R222; R59; R63; R146; R145; R277

42	Popularity of the platform	R108; R139; R308; R109; R134; R19; R242; R243; R69; R4; R64
43	Similarity of characteristics (demographics, background, experience and interests)	R261; R8; R307; R172; R290; R69
44	Discernment power of review	R270; R73; R156
45	Return Policy	R122; R145; R265; R224; R191; R182; R229; R98; R5; R4; R48
46	Rating compatibility	R15 ; R190; R137
47	Harmony with one's previous beliefs	R47; R292
48	Recommendation bias	R47
49	Occurrence of positive and negative emotions in review	R192; R307; R262; R147; R141; R153
50	Critical mass	R105; R235
51	Platform interaction	R18; R193; R195; R280; R297; R286; R242; R112; R90; R6
52	Sponsor type	R171; R181; R226; R246; R186; R212; R305; R115
53	Credibility of review	R270; R153; R201; R271; R112; R148; R255; R156
54	Third-party guarantee	R132; R59; R172; R101; R134; R182; R255; R19
55	Customer service quality	R122; R205; R41; R134; R182
56	Commercial contracts	R112; R117; R208; R99
57	Relational contracts	R112; R25; R26
58	Reasoning power	R47; R4
59	Popularity of posts related to seller or product	R1; R59; R146
60	Framing a recommendation or review	R47; R147; R156
61	Cognitive state of social presence	R160; R124; R199; R143; R255; R97; R19; R307
62	Cognitive status of social support	R131; R160; R164; R94; R291; R10; R255; R69; R90; R254; R6; R307
63	Emotional state of familiarity	R160; R131; R79; R55; R151; R199; R255; R247; R243; R69; R307
64	Emotional state of intimacy	R160; R108; R166; R12; R163; R151; R96; R307
65	Logistics risk security and facility location	R234; R182; R84; R98; R69
66	Delivery cost	R234
67	Seller assistance	R114; R225; R92; R304
68	Interaction with the seller	R114; R243; R255; R174; R173; R282
69	References to reputable websites	R182; R131; R5
70	Escrow service	R182; R69; R19; R255
71	Privacy protection	R182; R131; R141; R104; R19; R98; R69
72	Transaction information security	R182; R131; R87; R104; R98
73	Business rules and standards	R182; R90; R115; R98
74	Real-time communication	R90; R173; R174; R281
75	Product or service rating and evaluation	R132; R121; R137; R5
76	Safeguards	R132
77	Information accessibility	R243; R242
78	Culture	R243; R242; R19; R115; R9
79	Computing-based trust	R81; R243; R264
80	Institution-based trust	R243; R264
81	Seller rating and evaluation	R121; R137; R6; R141
82	Information quality	R131; R74; R255; R69
83	Experience using the Internet and electronic platforms	R131; R27; R19; R69
84	Shopping style	R131; R39
85	Willingness to trust	R131; R147; R255; R183
86	Contradictory reviews	R254, R156
87	Uncertainty reduction strategies	R78
88	Structural assurance	R147; R255
89	Security of price risk and non-availability of product benefits	R137; R141; R255; R35
90	Security risk efficiency and performance	R137; R309; R255; R35; R98
91	Physical risk security	R137; R255

92 Time risk security	R137; R244; R104; R255
93 Cash payment upon delivery	R5; R104
94 Consumer records and personal experiences with information disclosure	R141; R255; R249
95 Consumer's personal emotions and feelings towards information disclosure	R141; R255; R249
96 Perceived benefits of online self-disclosure	R141; R255; R249
97 Security Perceived privacy risks in online self-disclosure	R141; R255; R249; R40
98 Willingness to value privacy	R141; R126
99 Belief in privacy	R141; R162
100 Attitudes/privacy concerns in online self-disclosure	R116; R141; R310; R162; R303; R249; R247; R40
101 Consumer perception of the environment in online self-disclosure	R141; R255; R140; R249; R40
102 Presentation and personalization motivations and incentives in online self-disclosure	R141; R155; R126
103 Privacy practices and communications	R141
104 Information selection and delivery structure	R141; R98; R289
105 Characteristics of information in online self-disclosure	R141; R249; R247
106 Disclosure of information online	R141; R249
107 Government and public policy stances on online self-disclosure	R141; R249
108 Product description	R134; R59
109 Matching the goals of the transaction parties	R104
110 Trust transfer	R19; R28; R142; R152
111 Green trust	R243; R19; R255
112 Loyalty	R115
113 Perceived similarity and homogeneity	R255
114 Third-party verification of the platform	R255; R207; R120; R170; R123;
115 The way the seller responds to feedback	R255; R179; R248; R258
116 Seller verification	R255; R91; R123; R207
117 Trusting beliefs	R7; R43; R255
118 Reputation systems	R256; R255; R169
119 Self-presentation of the buyer	R255
120 Characteristics of buyers	R255; R144; R251
121 Self-presentation of the seller	R255; R7; R43; R180; R311
122 Seller characteristics	R255; R251; R187
123 Trust the platform	R255; R123; R154; R189; R312; R230; R291; R88
124 Social capital of the seller	R255; R89; R21; R22; R68
125 Security measures on the platform	R255; R69; R312
126 Beliefs of trust towards society	R255; R51; R45
127 Security risk of misuse of information	R35; R43; R194; R103
128 Security of payment transactions	R98
129 Trustworthiness and perceived integrity of the seller	R69
130 Product quality assessment learning curve	R133
131 Buyer's perceived risk security	R133
132 Supplementary and additional product information (such as advertising)	R133; R138; R209
133 Believability	R182
134 The need to touch the product	R114
135 Display the product in live stream (live broadcast)	R114; R253; R313; R32; R159; R285; R90; R39; R303; R175; R200; R34; R157; R273; R176; R283; R33
136 Resolve uncertainty of delivery	R128; R134; R159; R220; R223; R263; R84
137 Resolving the uncertainty of customer service expectations	R84; R85; R86; R217; R287; R70; R216; R223; R263
138 Resolving the uncertainty of the conformity of the procedures	R17; R85; R86; R119; R159; R284; R295; R84
139 Addressing external uncertainty	R86; R84; R159; R263; R284; R107
140 Resolving uncertainty of inventory	R82; R86; R110; R128; R237; R119; R223; R263; R84

141 Product or package damage management	R86; R110; R84; R221; R84
142 Solving the issue of demand uncertainty	R86; R237; R216; R267; R263; R84
143 Management of international and local shipping cost uncertainty	R215; R213; R84; R2; R107
144 Management of international and local shipping time uncertainty	R215; R221; R213; R65; R84; R98; R107
145 Demand level management	R232; R2; R84
146 Imitation	R42; R64; R93; R236
147 Managing the uncertainty of order handling time	R274; R84
148 Managing labor cost uncertainty	R276; R84
149 Handling the uncertainty of product return	R118; R84
150 Managing order cycle time uncertainty	R221; R65; R2; R84
151 Ability to track the order	R90; R84
152 Security risk of non-availability of the product	R56; R84
153 Customs tariff change management	R231; R118; R84
154 Management of delays in customs clearance	R231; R118; R84
155 Risk management of the unpredictable impact of regulations	R118; R84
156 Management of currency exchange rate uncertainty	R82; R276; R84
157 Self-efficacy	R132
158 Ethnicity and religion	R242; R19; R115; R243
159 Resolve customer concerns	R3; R131; R52; R239; R243
160 Effective interaction and communication	R243; R110; R268
161 Antecedents of trust	R81
162 Trust in intermediaries	R147
163 Restore trust	R214; R19
164 Word of mouth	R19; R13; R149; R69; R113
165 Website design	R125; R19; R147
166 Recommendations	R69; R161
167 Reliable system	R69; R314
168 Situational norm	R81; R243
169 Fit with lifestyle	R39; R31
170 Site stickiness	R254; R196; R315; R238; R227; R129; R100
171 Product endorsements	R77; R200; R300

Review Reference

- R1. Abid, A., P. Harrigan, and S.-K. Roy. 2019. Online relationship marketing through content creation and curation. *Marketing Intelligence & Planning*, 38 (6), 699–712.
- R2. Acar, Y., S. Kadipasaoglu, and P. Schipperijn. 2010. A decision support framework for global supply chain modelling: an assessment of the impact of demand, supply and lead-time uncertainties on performance. *International Journal of Production Research*, 48(11), 3245-3268.
- R3. Agag, G.-M., M.-A. Khashan, N. Colmekcioglu, A. Almamy, N.-S. Alharbi, R. Eid, ... and Z. H.-S. Abdelmoety. 2020. Converting hotels website visitors into buyers: How online hotel web assurance seals services decrease consumers' concerns and increase online booking intentions. *Information Technology & People*, 33(1), 129-159.
- R4. Al-Adwan, A.-S. and H. Yaseen. 2023. Solving the product uncertainty hurdle in social commerce: The mediating role of seller uncertainty, *Information Management Data Insights*, 3(1), 100169.
- R5. Al-Adwan A.-S., M.-K. Alrousan, H. Yaseen, A.-M. Alkufahy, M. Alsoud. 2022. Boosting Online Purchase Intention in High-Uncertainty-Avoidance Societies: A Signaling Theory Approach. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 136.
- R6. Al-Adwan, A.-S., M.-M. Al-Debei, and Y.-K. Dwivedi. 2022. E-commerce in high uncertainty avoidance cultures: The driving forces of repurchase and word-of-mouth intentions. *Technology in Society*, 102083.
- R7. Alfina, I., J. Ero, A.-N. Hidayanto, and M.-R. Shihab. 2014. The impact of cognitive trust and e-wom on purchase intention in C2C e-commerce site. *Journal of Computer. Science*, 10(12), 2518-2524.
- R8. Alnatour, S., I. Benbasat, and R.-T. Cenfetelli. 2011. The Adoption of Online Shopping Assistants: Perceived Similarity as an Antecedent to Evaluative Beliefs, *Journal of the Association for Information Systems*, 12(5).
- R9. Al-Omouh, K.-S., A. de Lucas Ancillo, and S.-G. Gavrilu. 2022. The role of cultural values in social commerce adoption in the Arab world: An empirical study. *Technological Forecasting and Social Change*, 176, 121440.
- R10. Amblee, N., and T. Bu. 2014. Harnessing the influence of social proof in online shopping: the effect of electronic word of mouth on sales of digital microproducts. *International Journal of Electronic Commerce*, 16 (2), 91–114.
- R11. Angst, C.-M. and R. Agarwal. 2009 Adoption of electronic health records in the presence of privacy concerns: the elaboration likelihood model and individual persuasion. *MIS Quarterly*, 33 (2) 339–370.
- R12. Animesh, A., A. Pinsonneault, S.-B. Yang, and W. Oh. 2011. An odyssey into virtual worlds: exploring the impacts of technological and spatial environments on intention to purchase virtual products. *MIS Quarterly*, 35 (3), 789–810.
- R13. Awad, N. F., and A. Ragowsky. 2008. Establishing trust in electronic commerce through online word of mouth: An examination across genders. *Journal of management information systems*, 24(4), 101-121.
- R14. Ba, S., and P. A. Pavlou. 2002. Evidence of the effect of trust building technology in electronic markets: Price premiums and buyer behavior. *MIS quarterly*, 243-268.
- R15. Baek, H., J.-H., Ahn, and Y. Choi. 2012 Helpfulness of Online Consumer Reviews: Readers' Objectives and Review Cues, *International Journal of Electronic Commerce*, 17(2), 99-126.
- R16. Bai, Y., Z. Yao, and Y.-F. Dou. 2015 Effect of social commerce factors on user purchase behavior: An empirical investigation from renren.com, *International Journal of Information Management*, 35(5), 538-550.
- R17. Ballering, T. 2017. China Cross-Border E-Commerce. Consulate-General of the Kingdom of the Netherlands, Shanghai.
- R18. Barreda, A.-A., A. Bilgihan, K. Nusair, K. and F. Okumus. 2016. Online branding: Development of hotel branding through interactivity theory, *Tourism Management*, 57, 180-192.
- R19. Bauman, A. and R. Bachmann. 2017. Online Consumer Trust: Trends in Research. *Technology Management and Innovation*, 12. 68-79.
- R20. Benbasat, I., and W. Wang. 2005. Trust in and adoption of online recommendation agents. *Journal of the association for information systems*, 6(3), 4.
- R21. Bente, G., O. Baptist, and H. Leuschner. 2012. To buy or not to buy: Influence of seller photos and reputation on buyer trust and purchase behavior. *International Journal of Human-Computer Studies*, 70 (1), 1–13. 10.1016/j.ijhcs.2011.08.005.
- R22. Bente, G., T. Dratsch, S. Rehbach, M. Reyl, and B. Lushaj. 2014. Do you trust my avatar? Effects of photo-realistic seller avatars and reputation scores on trust in online transactions. In *HCI in Business: First International Conference, HCIB 2014, Held as Part of HCI International 2014, Heraklion, Crete, Greece, June 22-27, 2014. Proceedings 1* (pp. 461-470). Springer International Publishing.
- R23. Bhattacharjee, A. and C. Sanford. 2006. Influence processes for information technology acceptance: an elaboration likelihood model, *MIS Quarterly*, 30 (4) 805–825.

- R24. Bickart, B., and R. M. Schindler. 2001. Internet forums as influential sources of consumer information. *Journal of interactive marketing*, 15(3), 31-40.
- R25. Bird, R. C., and V. Soundararajan. 2020. The role of pre contractual signals in creating sustainable global supply chains. *Journal of Business Ethics*, 164, 81-94.
- R26. Bird, R.-C. 2005 Employment as a relational contract, *Journal of Labor and Employment Law*, 8(1), 149-216.
- R27. Blank, G., and W. H. Dutton. 2012. Age and trust in the Internet: The centrality of experience and attitudes toward technology in Britain. *Social Science Computer Review*, 30(2), 135-151.
- R28. Bock, G. W., J. Lee, H. H. Kuan, and J. H. Kim. 2012. The progression of online trust in the multi-channel retailer context and the role of product uncertainty. *Decision Support Systems*, 53(1), 97-107.
- R29. Brackett, L. K., and B. N. Carr. 2001. Cyber space advertising vs. other media: Consumer vs. mature student attitudes. *Journal of Advertising Research*, 41(5), 23-32.
- R30. Briggs, P., B. Burford, A. De Angeli, and P. Lynch. 2002. Trust in online advice. *Social Science Computer Review*, 20(3), 321-332.
- R31. Bruns, A. 2012. Reconciling community and commerce? Collaboration between produsage communities and commercial operators. *Information, Communication & Society*, 15(6), 815-835.
- R32. Bründl, S., C. Matt, T. Hess, and S. Engert. 2023. How synchronous participation affects the willingness to subscribe to social live streaming services: the role of co-interactive behavior on Twitch. *European journal of information systems*, 32(5), 800-817.
- R33. Bründl, S., C. Matt, and T. Hess. 2017. Consumer use of social live streaming services: The influence of co-experience and effectance on enjoyment. In *Proceedings of the 25th European Conference on Information Systems (ECIS 2017)*. Guimarães, Portugal. June 5-10, 2017 (1775-1791).
- R34. Cai, J., D. Y. Wohn, A. Mittal, and D. Sureshababu. 2018, June. Utilitarian and hedonic motivations for live streaming shopping. In *Proceedings of the 2018 ACM international conference on interactive experiences for TV and online video*, 81-88.
- R35. Carvache-Franco, O., J. Loaiza-Torres, C. Soto-Montenegro, M. Carvache-Franco, and W. Carvache-Franco. 2022. The risks perceived by the consumer in the acceptance of electronic commerce. A study of Bolivia. *PLOS ONE* 17(11): e0276853.
- R36. Casaló, L.-V., C. Flavián, M. Guinalú, and Y. Ekinci. 2015. Avoiding the dark side of positive online consumer reviews: Enhancing reviews' usefulness for high risk-averse travelers. *Business Research*, 68(9), 1829-1835.
- R37. Chang, H.-H. and S.-W. Chen. 2008. The impact of online store environment cues on purchase intention, *Online Information Review*, 32(6), 818-41.
- R38. Chaney, D., R. Lunardo, and C. Saintives. 2015. In-store quality (in) congruency as a driver of perceived legitimacy and shopping behavior. *Journal of Retailing and Consumer Services*, 24, 51-59.
- R39. Chen, Z., R.-T. Cenfetelli, and I. Benbasat. 2019. The Influence of E-Commerce Live Streaming on Lifestyle Fit Uncertainty and Online Purchase Intention of Experience Products. *Proceedings of the 52nd Hawaii International Conference on System Sciences*, 5081-5090.
- R40. Chen, T. Y., F. M. Hsu, and S. Y. Wu. 2019. Examining the effect of information disclosure on website stickiness: The cognitive information perspective. *Corporate Management Review*, 39(1), 49-81.
- R41. Chen, X., Q. Huang, R.-M., Davison, and Z. Hua. 2016. What drives trust transfer? The moderating roles of seller-specific and general institutional mechanisms. *International Journal of Electronic Commerce* 20 (2), 261-289.
- R42. Chen, X.,-Y. Li, R. Davison, and Y. Liu. 2020. The impact of imitation on Chinese social commerce buyers' purchase behavior: The moderating role of uncertainty. *International Journal of Information Management*. 56. 102262.
- R43. Chen, D., H. Lou, and C. Van Slyke. 2015. Toward an understanding of online lending intentions: Evidence from a survey in China. *Communications of the Association for Information Systems*, 36(1), 17.
- R44. Chen, A., Y. Lu, and B. Wang. 2017. Customers' purchase decision-making process in social commerce: A social learning perspective. *International Journal of Information Management*, 37(6), 627-638.
- R45. Chen, Y., and J. Xie, J. 2008. Online consumer review: Word-of-mouth as a new element of marketing communication mix. *Management science*, 54(3), 477-491.
- R46. Cheung, C.-M.-K., M.-K.-O., Lee, and N. Rabjohn. 2008. The impact of electronic word-of-mouth: the adoption of online opinions in online customer communities, *Internet Research* 18 (3) 229-247.
- R47. Cheung, M.-Y., C. Luo, C.-L. Sia, and H. Chen. 2009. Credibility of Electronic Word-of-Mouth: Informational and Normative Determinants of On-line Consumer Recommendations, *International Journal of Electronic Commerce*, 13(4), 9-38.

- R48. Cheung, C.-M.-K., B.-S. Xiao and I. L. B. Liu. 2014. Do actions speak louder than voices? The signaling role of social information cues in influencing consumer purchase decisions. *Decision Support Systems*, 65, 50–58.
- R49. Chevalier, J.-A., and D. Mayzlin. 2006. The effect of word of mouth on sales: Online book reviews. *Journal of Marketing Research*, 43(3), 345–354.
- R50. China Consumers Association, Online Survey Report On Consumer Satisfaction of Live Streaming E-Commerce Shopping, 2020. <http://www.cca.org.cn/jmxf/detail/29533.html>.
- R51. Chiu, T.-S., W.-H. Chih, J. Ortiz, and C.-Y. Wang. 2018. The contradiction of trust and uncertainty from the viewpoint of swift guanxi. *Internet Research*, 28(3), 716–745.
- R52. Connolly, R., and F. Bannister, F. 2007. Consumer trust in Internet shopping in Ireland: towards the development of a more effective trust measurement instrument. *Journal of Information Technology*, 22, 102–118.
- R53. Costa, A., J. Guerreiro, S. Moro, and R. Henriques. 2019. Unfolding the characteristics of incentivized online reviews. *Journal of Retailing and Consumer Services*, 47, 272–281.
- R54. Cramer, H., V. Evers, S. Ramlal, M. Van Someren, L. Rutledge, N. Stash, and B. Wielinga. 2008. The effects of transparency on trust in and acceptance of a content-based art recommender. *User Modeling and User-adapted interaction*, 18, 455–496.
- R55. Curty, R.-G., and P. Zhang. 2013. Website features that gave rise to social commerce: a historical analysis. *Electronic Commerce Research and Applications* 12 (4), 260–279.
- R56. Dadzie, K. Q., and E. Winston. 2007. Consumer response to stock-out in the online supply chain. *International Journal of Physical Distribution & Logistics Management*, 37(1), 19–42.
- R57. Dellarocas, C., G.-G., Gao, and R. Narayan. 2010. Are consumers more likely to contribute online reviews for hit or niche products, *Journal of Management Information Systems*. 27 (2), 127–158.
- R58. De Pelsmacker, P., N. Dens, and A. Kolomiiets. 2018. The impact of text valence, star rating and rated usefulness in online reviews. *International Journal of Advertising*, 37(3), 340–359.
- R59. Dimoka, A., Y. Hong, and P.-A. Pavlou. 2012. On product uncertainty in online markets: theory and evidence. *MIS Quarterly*, 36(2), 395–426.
- R60. Doh, S.-J. and J.-S. Hwang. 2009. Rapid Communication, How Consumers Evaluate eWOM (Electronic Word-of-Mouth) Messages, *Cyberpsychology & Behavior*, 12(2).
- R61. Duan, W., B. Gu, and A.-B. Whinston. 2008. Do online reviews matter? an empirical investigation of panel data, *Decision Support Systems* 45 (4) 1007–1016.
- R62. Duan, W., B. Gu, and A.-B. Whinston. 2009. Informational cascades and software adoption on the internet: an empirical investigation, *MIS Quarterly* 33 (1), 23–48.
- R63. Du, S., L. Wang, and L. Hu. 2019. Omnichannel management with consumer disappointment aversion. *Production Economics* 215, 84–101.
- R64. Du, H.-S. 2013. The role of media-embedded heuristics in achieving online readership popularity. *Association for Information Science and Technology*, 65 (2), 302–312.
- R65. Durach, C. F., and F. Wiengarten. 2017. Exploring the impact of geographical traits on the occurrence of supply chain failures. *Supply Chain Management: An International Journal*, 22(2), 160–171.
- R66. Edwards, S.-M., J.-K. Lee, and C.-L. Ferle, 2009. Does place matter when shopping online? Perceptions of similarity and familiarity as indicators of psychological distance, *Journal of Interactive Advertising*, 10, 35–50.
- R67. Erkan, I. 2016. The Influence of Electronic Word of Mouth in Social Media on Consumers' Purchase Intentions, PhD Thesis, Brunel Business School, Brunel University.
- R68. Ert, E., A. Fleischer, and N. Magen. 2016. Trust and reputation in the sharing economy: The role of personal photos in Airbnb. *Tourism management*, 55, 62–73.
- R69. Fan, M., V. Ammah, S.-A. Dakhan, R. Liu, M. Mingle, and Z. Pu. 2021. Critical Factors of Reacquainting Consumer Trust in E-Commerce. *Asian Finance, Economics and Business*, 8, 561–573.
- R70. Fang, J., H. Liu, Y. Li, and Z. Cai. 2021. Retaining customers with in-store mobile usage experience in omni-channel retailing: The moderating effects of product information overload and alternative attractiveness. *Electronic Commerce Research and Applications*, 46, 101028.
- R71. Ferwerda B, E. Yang, M. Schedl, and M. Tkalcic. 2015. Personality traits predict music taxonomy preferences. In: *Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems*, ACM, 2241–2246.
- R72. Filieri, R., S. Alguezaui, and F. McLeay. 2015. Why do travelers trust TripAdvisor? Antecedents of trust towards consumer-generated media and its influence on recommendation adoption and word of mouth, *Tourism Management* 51, 174–185.
- R73. Filieri, R. 2015. What makes online reviews helpful? A diagnosticity-adoption framework to explain informational and normative influences in e-WOM, *Journal of Business Research*, 68(6), 1261–1270.

- R74. Floridi, L. 2013. Information quality. *Philosophy & Technology*, 26, 1-6.
- R75. Fogel, J., S. Zachariah, and J. Fogel. 2017. Intentions to use the Yelp review website and purchase behavior after reading reviews, *Journal of Theoretical and Applied Electronic Commerce Research*, 12(1), 53-67.
- R76. Forman, C., A. Ghose, and B. Wiesenfeld. 2008. Examining the Relationship between Reviews and Sales: The Role of Reviewer Identity Disclosure in Electronic Markets. *Information Systems Research*. 19. 291-313. doi:10.2139/ssrn.1026893.
- R77. Forrest, E., and Y. Cao. 2010. Opinions, recommendations and endorsements: the new regulatory framework for social media. *Journal of Business and Policy Research*, 5, 88-99.
- R78. Gambo, S., and B. Özad. 2021. The Influence of Uncertainty Reduction Strategy over Social Network Sites Preference. *Theoretical and Applied Electronic Commerce Research* 16, 116-127.
- R79. Gefen, D. 2000. E-commerce: the role of familiarity and trust. *Omega* 28 (6), 725-737.
- R80. Gefen, D. 2002. Reflections on the dimensions of trust and trustworthiness among online consumers. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, 33(3), 38-53.
- R81. Gefen, D., E. Karahanna, D.W. Straub. 2003. Trust and TAM in online shopping: an integrated model, *MIS Quarterly* 27 (1), 51-90.
- R82. Gessner, G. H., and C. R. Snodgrass. 2015. Designing e-commerce cross-border distribution networks for small and medium-size enterprises incorporating Canadian and US trade incentive programs. *Research in Transportation Business & Management*, 16, 84-94.
- R83. Ghose, A., P.-G. Ipeirotis. 2011. Estimating the helpfulness and economic impact of product reviews: Mining text and reviewer characteristics. *IEEE Transactions on Knowledge and Data Engineering*, 23(10), 1498-1512.
- R84. Giuffrida, M., H. Jiang and R. Mangiaracina. 2021. Investigating the relationships between uncertainty types and risk management strategies in cross-border e-commerce logistics, *Logistics Management*, 32(4), 1406-1433.
- R85. Giuffrida, M., R. Mangiaracina, A. Perego, and A. Tumino. 2020. Cross-border B2C e-commerce to China: an evaluation of different logistics solutions under uncertainty. *Physical Distribution & Logistics Management*, 50(3), 355-378.
- R86. Giuffrida, M., R. Mangiaracina, G. Miragliotta, S. Perotti, and A. Tumino. 2019. Modelling the environmental impact of omni-channel purchasing in the apparel industry: the role of logistics. *Logistics Systems and Management*, 34(4), 431-456.
- R87. Grabner-Kraeuter, S. 2002. The role of consumers' trust in online-shopping. *Journal of business ethics*, 39, 43-50.
- R88. Gregg, D. G., and S. Walczak. 2010. The relationship between website quality, trust and price premiums at online auctions. *Electronic Commerce Research*, 10, 1-25.
- R89. Greiner, M. E., and H. Wang. 2010. Building consumer-to-consumer trust in e-finance marketplaces: An empirical analysis. *International Journal of Electronic Commerce*, 15(2), 105-136.
- R90. Guo, J., Y. Li, Y. Xu, K. Zeng. 2021. How Live Streaming Features Impact Consumers' Purchase Intention in the Context of Cross-Border E-Commerce? A Research Based on SOR Theory. *Frontiers in Psychology*. 12:767876.
- R91. Ha, S. H., and L. T. Liu. 2010. Critical success factors of open markets on the internet in terms of buyers. In *Software Services for e-World: 10th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2010, Buenos Aires, Argentina, November 3-5, 2010. Proceedings* 10 (pp. 282-291). Springer Berlin Heidelberg.
- R92. Haas, A., and P. Kenning, P. 2014. Utilitarian and hedonic motivators of shoppers' decision to consult with salespeople. *Retailing*, 90(3), 428-441.
- R93. Haghani, M., and M. Sarvi. 2019. Imitative (herd) behavior in direction decision-making hinders efficiency of crowd evacuation processes. *Safety Science*, 114, 49-60.
- R94. Hajli, M., 2013. A research framework for social commerce adoption. *Information Management Computer Security*. 21 (3), 144-154.
- R95. Hajli, N. 2015. Social commerce constructs and consumer's intention to buy. *Int. J. Inf. Manage.* 35 (2), 183-191.
- R96. Hajli, N., and J. Sims. 2015. Social commerce: the transfer of power from sellers to buyers. *Technological Forecasting and Social Change* 94, 350-358.
- R97. Hassanein, K., and M. Head. 2007. Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies*. 65, 689-708.
- R98. Hermawan, A., W.-P. Rahayu, M. Arief. 2021. Analysis of Trust: A Perception on E-Commerce Transaction Among Students, *Advances in Economics, Business and Management Research, Proceedings of*

- the BISTIC Business Innovation Sustainability and Technology International Conference (BISTIC 2021), 193, 76-85.
- R99. Hill, J.-A., S. Eckerd, D. Wilson, and D. Greer. 2009. The effect of unethical behavior on trust in a buyer-supplier relationship: The mediating role of psychological contract violation, *Journal of Operations Management*, 27(4), 281-293.
- R100. Hong, S. N., and H. J. Lee. 2014. Effects of purchasing factors through social-commerce of beauty service on the consumer satisfaction and the repurchasing intention. *Journal of Internet Computing and Services*, 15(6), 133-144.
- R101. Hong, Y., and P. Pavlou. 2014. Product fit uncertainty in online markets: Nature, effects and antecedents. *Information Systems Research*, 2(25), 328-344.
- R102. Hoorens, V., M. Pandelaere, F., Oldersma, and C. Sedikides. 2012. The Hubris hypothesis: you can self-enhance, but you'd better not show it, *Journal of Personality* 80 (5), 1237-1274.
- R103. Horrigan, J., 2008. Online Shopping, Pew Research Center: Internet, Science & Tech. United States of America. Retrieved from <https://policycommons.net/artifacts/627407/online-shopping/1608719/> on 16 Nov 2023. CID: 20.500.12592/2rd74g.
- R104. Horvath, J., B. Gavurova, R. Bacik, and R. Fedorko. 2021. Identification of Uncertainty Factors in the Consumer Behaviour of the New Generation of Customers at the E-commerce Level. *Tourism and Services*, 22(12), 168-183.
- R105. Hsiao, K., J. Chuan-Chuan Lin, X. Wang, H. Lu, and H. Yu. 2010. Antecedents and consequences of trust in online product recommendations: An empirical study in social shopping, *Online Information Review*, 34(6), 935-953.
- R106. Hsiao, K., H. Lu, and W. Lan. 2013. The influence of the components of storytelling blogs on readers' travel intentions, *Internet Research* 23, 160-182.
- R107. Hsu, J. S. C., Y.-W. Hung and C.-M. Chiu. 2022. Cross-border social commerce: from a trust transfer perspective. *Journal of Electronic Commerce Research*, 23(2), 115-137.
- R108. Huang, Z., and M. Benyoucef. 2013. From e-commerce to social commerce: a close look at design features. *Electronic Commerce Research and Applications*, 12 (4), 246-259.
- R109. Huang, Z., and M. Benyoucef. 2015. User preferences of social features on social commerce websites: an empirical study. *Technological Forecasting and Social Change*, 95, 57-72.
- R110. Huang, Q., X. Chen, C. X. Ou, R. M. Davison, and Z. Hua. 2017. Understanding buyers' loyalty to a C2C platform: the roles of social capital, satisfaction and perceived effectiveness of e-commerce institutional mechanisms. *Information systems journal*, 27(1), 91-119.
- R111. Hu, X., X. Chen, and R.-M. Davison. 2019. Social support, source credibility, social influence, and impulsive purchase behavior in social commerce. *International Journal of Electronic Commerce*, 23(3), 297-327.
- R112. Hussain, S., Y. Li, and W. Li. 2021. Influence of Platform Characteristics on Purchase Intention in Social Commerce: Mechanism of Psychological Contracts, *Journal of Theoretical and Applied Electronic Commerce Research*, doi: 10.4067/S0718-18762021000100102.
- R113. Hwang, I.-J., B.-G. Lee, and K.-Y. Kim. 2014. Information asymmetry, social networking site word of mouth, and mobility effects on social commerce in Korea, *Cyberpsychology, Behavior, and Social Networking*, 17(2), 117-124.
- R114. Hwang, J. and S.-V. Youn. 2023. From brick-and-mortar to livestream shopping: product information acquisition from the uncertainty reduction perspective, *Fashion and Textiles*, 10(7).
- R115. Isa, K., F. Khan, A. Rasli, R. Mdyusoff, and K. Isa. 2016. Impact of Trust on Online Shopping: A Systematic Review of Literature. *Advanced Review on Scientific Research*, 8(1), 1-8.
- R116. Jai, T. M. C., and N. J. King. 2016. Privacy versus reward: Do loyalty programs increase consumers' willingness to share personal information with third-party advertisers and data brokers? *Journal of Retailing and Consumer Services*, 28, 296-303.
- R117. Janssens, M., L. Sels, and I. Van den Brande. 2003. Multiple types of psychological contracts: A six-cluster solution, *Human Relations*, 56(11), 1349-1378.
- R118. Jiao, Z. 2015. Modes and development characteristics of China's cross-border e-commerce logistics", in *Contemporary Logistics in China: Proliferation and Internationalization*, edited by Liu, B., Wang, L., Lee, S., Liu, J., Qin, F. and Jiao, Z., 211-232. Berlin: Springer.
- R119. Jia, S. S. 2020. Motivation and satisfaction of Chinese and US tourists in restaurants: A cross-cultural text mining of online reviews. *Tourism Management*, 78, 104071.
- R120. Jones, K., and L. N. Leonard. 2014. Factors influencing buyer's trust in consumer-to-consumer e-commerce. *Journal of Computer Information Systems*, 54(4), 71-79.
- R121. Joo, J. 2015. Roles of the Buyer's Trust in Seller in Posted-Price Model of Consumer to Consumer E-Commerce. *Theoretical and applied electronic commerce research*, 10(3), 30-44.

- R122. Kanani, R., and R. Glavee-Geo. 2021. Breaking the uncertainty barrier in social commerce: The relevance of seller and customer-based signals, *Electronic Commerce Research and Applications*, 48, 101059.
- R123. Kang, D., W. Jang, and Y. Park. 2016. Evaluation of e-commerce websites using fuzzy hierarchical TOPSIS based on ES-QUAL. *Applied Soft Computing*, 42, 53-65.
- R124. Kang, J. Y. M., and K. K. P Johnson. 2013. How does social commerce work for apparel shopping? Apparel social e-shopping with social network storefronts. *Customer Behavior*, 12 (1), 53-72.
- R125. Karahanna, E., C.-W. Williams, G. Polites, B. Liu, and L. Seligman. 2013. Uncertainty Avoidance and Consumer Perceptions of Global e-Commerce Sites: A Multi-Level Model. *Drake Management Review*, 3, 12-47.
- R126. Karwatzki, S., O. Dytnko, M. Trenz, and D. Veit. 2017. Beyond the personalization-privacy paradox: Privacy valuation, transparency features, and service personalization. *Journal of Management Information Systems*, 34(2), 369-400.
- R127. Kaushik, K., R. Mishra, N. P. Rana, and Y. K. Dwivedi. 2018. Exploring reviews and review sequences on e-commerce platform: A study of helpful reviews on Amazon. in. *Journal of retailing and Consumer Services*, 45, 21-32.
- R128. Kawa, A. 2017. Supply chains of cross-border e-commerce. *Advanced Topics in Intelligent Information and Database Systems* 9, 173-183.
- R129. Keh, H. T., and J. Sun. 2018. The differential effects of online peer review and expert review on service evaluations: the roles of confidence and information convergence. *Journal of Service Research*, 21(4), 474-489.
- R130. Kim, D., and I. Benbasat. 2009. Trust-assuring arguments in B2C e-commerce: impact of content, source, and price on trust, *Journal of Management Information Systems*, 26 (3) 175-206.
- R131. Kim, D.-J., D.-L. Ferrin, and H.-R. Rao. 2008. A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*. 44, (2), 544-564 .
- R132. Kim, Y.-H., and D.-J. Kim. 2005. A Study of Online Transaction Self-Efficacy, Consumer Trust, and Uncertainty Reduction in Electronic Commerce Transaction, *Proceedings of the 38th Annual Hawaii International Conference on System Sciences*, Big Island, HI, USA, 2005, pp. 170c-170c, doi: 10.1109/HICSS.2005.52.
- R133. Kim, Y. and R. Krishnan. 2015. On Product-Level Uncertainty and Online Purchase Behavior: An Empirical Analysis. *Management Science*, 61(10), 1-19.
- R134. Kim, J.-K., P.-D. Mugwe. 2017. Investigating Product Uncertainties in Online Shopping: Evidence from Kenya, *Smart Media*, 6(1), 39-46.
- R135. Kim, E., and S. Tadisina. 2005. Factors impacting customers' initial trust in e-businesses: an empirical study, *Proceedings of the 38th Annual Hawaii International Conference on System Sciences (HICSS '05)*, Big Island, HI, January 3-6.
- R136. Kim, J., K. Yang, and B. Y. Kim. 2013. Online retailer reputation and consumer response: examining cross cultural differences. *International Journal of Retail & Distribution Management*, 41(9), 688-705.
- R137. Kiran, J., M. Omar, G. Fernando. 2020. Strategies to manage the risks faced by consumers in developing e-commerce. *Insights into Regional Development*, 2(4), 774-783.
- R138. Kirmani, A., and A.-R. Rao. 2000. No pain, no gain: a critical review of the literature on signaling unobservable product quality, *Journal of Marketing*, 64(2) 66-79.
- R139. Koch, S., A. Toker, and P. Brulez. 2011. Extending the technology acceptance model with perceived community characteristics. *Information Research*, 16(2), 16-2.
- R140. Koh, B., S. Raghunathan, and B. R. Nault. 2020. An empirical examination of voluntary profiling: Privacy and quid pro quo, *Decision Support Systems*, 132, 113285.
- R141. Kolotylo-Kulkarni, M., W. Xia, and G. Dhillon. 2021. Information disclosure in e-commerce: A systematic review and agenda for future research. *Business Research*, 126, 221-238.
- R142. Kuan, H. H. and G. W. Bock. 2007. Trust transference in brick and click retailers: An investigation of the before-online-visit phase. *Information & Management*, 44(2), 175-187.
- R143. Kumar, N., and I. Benbasat. 2006. The influence of recommendations and consumer reviews on evaluations of website. *Information System Research* 17 (4), 425-439.
- R144. Kwahk, K. Y., X. Ge, and J. M. Lee. 2012. The effects of use of instant messenger on purchase intention: the context of Chinese C2C e-commerce. *Asia pacific journal of information systems*, 22(2), 1-20.
- R145. Lahuerta-Otero, Cordero-Gutiérrez, and De la Prieta-Pintado 2018. Retweet or like? That is the question. *Online Information Review* 42 (5), 562-578.
- R146. Lardo, A., J. Dumay, R. Trequattrini, and G. Russo. 2017. Social media networks as drivers for intellectual capital disclosure. *Intellectual Capital* 18 (1), 63-80.

- R147. Lee, S.-J., C. Ahn, K. Song, and H. Ahn. 2018. Trust and Distrust in E-Commerce. *Sustainability*. 10. 1015.
- R148. Lee, K.-T., and D.-M. Koo. 2012. Effects of attribute and valence of e-WOM on message adoption: Moderating roles of subjective knowledge and regulatory focus. *Computers in Human Behavior* 28, 1974–1984.
- R149. Lee, J., D.-H. Park, and I. Han. 2011. The Different Effects of Online Consumer Reviews on Consumers' Purchase Intentions Depending on Trust in Online Shopping Mall: An Advertising Perspective. *Internet Research*. 21, 187-206.
- R150. Lee, G., and W. Xia. 2011. A longitudinal experimental study on the interaction effects of persuasion quality, user training, and first-hand use on user perceptions of new information technology, *Information & Management* 48 (7) 288–295.
- R151. Lee, Y., and O. Kwon. 2011. Intimacy, familiarity and continuance intention: an extended expectation–confirmation model in web-based services. *Electronic Commerce Research and Applications* 10, 342–357.
- R152. Lee, B.-C., L. Ang, and C. Dubelaar. 2005. Lemons on the Web: A signalling approach to the problem of trust in Internet commerce. *Journal of economic psychology*, 26(5), 607-623.
- R153. Lee, J., D. H. Park, and I. Han. 2008. The effect of negative online consumer reviews on product attitude: An information processing view. *Electronic commerce research and applications*, 7(3), 341-352.
- R154. Lee, H., & Lee, S. 2004. Building buyer trust in C2C online auctions: A triangular trust. *Proceedings of 9th Asia-Pacific Decision Sciences Institute Conference*, 1–14.
- R155. Lee, H. H., and Y. J. Ma. 2012. Consumer perceptions of online consumer product and service reviews: Focusing on information processing confidence and susceptibility to peer influence. *Journal of Research in Interactive Marketing*, 6 (2), 110–132.
- R156. Lei, J., C. Zhu, S. Yang, J. Wang, and Y. Yu. 2023. Influence of Review Properties in the Usefulness Analysis of Consumer Reviews: A Review-Based Recommender System for Rating Prediction. *Neural Processing Letters*, 1-20.
- R157. Li, C.-Y., and Y.-C. Ku. 2018. The power of a thumbs-up: Will e-commerce switch to social commerce? *Information & Management*, 55(3), 340-357.
- R158. Li, M., L. Huang, C. Tan, K. Wei. 2013. Helpfulness of online product reviews as seen by consumers: source and content features, *Electronic Commerce*, 17, 101-136.
- R159. Li, M., Min, Q., Hu, L., & Liu, Z. 2020. Understanding live streaming shopping intentions: A vicarious learning perspective. *PACIS 2020 Proceedings*. 108.
- R160. Li, C.-Y. 2019. How social commerce constructs influence customers' social shopping intention? An empirical study of a social commerce website, *Technological Forecasting and Social Change*, 144, 282-294.
- R161. Li, Y.-M., Wu, C.-T., Lai, C.-Y. 2013. A social recommender mechanism for e-commerce: Combining similarity, trust, and relationship, *Decision Support Systems*, 55(3), 740-752.
- R162. Li, H., R., Sarathy, H. Xu. 2010. Understanding Situational Online Information Disclosure as a Privacy Calculus. *Journal of Computer Information Systems*, 51(1), 62–71.
- R163. Liang, T.-P., Y.-T. Ho, Y.-W. Li, and E. Turban. 2011. What drives social commerce: the role of social support and relationship quality? *Electronic Commerce* 16 (2), 69–90.
- R164. Liang, T.-P., and E. Turban. 2014. Introduction to the special issue social commerce: a research framework for social commerce. *Electronic Commerce* 16 (2), 5–13.
- R165. Lin, H.-F. 2007. The impact of website quality dimensions on customer satisfaction in the B2C e-commerce context, *Total Quality Management*, 18(4), 363-78.
- R166. Lin, K.-Y., and H.-P. Lu. 2011. Why people use social networking sites: an empirical study integrating network externalities and motivation theory. *Computers in Human Behavior* 27, 1152–1161.
- R167. Lin, H.-H., W.-C. Yen, Y.-S. Wang and Y.-M. Yeh. 2018. Investigating consumer responses to online group buying service failures: The moderating effects of seller offering type. *Internet Research* 28 (4), 965–987.
- R168. Lin, C., X. Xu. 2017. Effectiveness of Online Consumer Reviews: The influence of source trustworthiness, valence, reviewer ethnicity and social distance. *Internet Research*. 27. 362-380.
- R169. Liu, L., C. M. Cheung, and M. K. Lee. 2016. An empirical investigation of information sharing behavior on social commerce sites. *International Journal of Information Management*, 36(5), 686-699.
- R170. Lu, Y., L. Zhao, and B. Wang. 2010. From virtual community members to C2C e-commerce buyers: Trust in virtual communities and its effect on consumers' purchase intention, *Electronic Commerce Research and Applications*, 9, 346-360.
- R171. Lu, L.-C., W.-P. Chang and H.-H. Chang. 2014. Consumer attitudes toward blogger's sponsored recommendations and purchase intention: The effect of sponsorship type, product type, and brand awareness. *Computers in Human Behavior*, 34. 258–266.

- R172. Lu, B. and Z. Chen. 2021. Live Streaming Commerce and Consumers' Purchase Intention: An Uncertainty Reduction Perspective. *Information & Management*, 58. doi:103509. 10.1016/j.im.2021.103509.
- R173. Lu, Z., H. Xia, S. Heo; and D. Wigdor. 2018. You watch, you give, and you engage: a study of live streaming practices in china. In: CHI'18: Proceedings of the 2018 CHI conference on human factors in computing systems, Montreal QC Canada, 2018. New York: Association for Computing Machinery, 1–13.
- R174. Lu, Z., M. Annett; and D. Wigdor. 2019. Vicariously experiencing it all without going outside: a study of outdoor livestreaming in china. In: Proceedings of the ACM on Human-Computer Interaction (PACMHCI), 3, 1–28.
- R175. Luo, X., Lim, W. M., Cheah, J. H., Lim, X. J., & Dwivedi, Y. K. (2023). Live Streaming Commerce: A Review and Research Agenda. *Journal of Computer Information Systems*, 1–24.
- R176. Lv, Z., Y. Jin, and J. Huang. 2018. How do sellers use live chat to influence consumer purchase decision in China?. *Electronic Commerce Research and Applications*, 28, 102-113.
- R177. Ma, M., and R. Agarwal. 2007. Through a glass darkly: Information technology design, identity verification, and knowledge contribution in online communities. *Information Systems Research*, 18, 1, 42–67.
- R178. Macdonald, E.K., and B.M. Sharp. 2000. Brand awareness effects on consumer decision making for a common, repeat purchase product: A replication. *Journal of Business Research*, 48(1), 5–15.
- R179. Malinen, S., and J. Ojala. 2012. Maintaining the instant connection—Social media practices of smartphone Users. In *From Research to Practice in the Design of Cooperative Systems: Results and Open Challenges: Proceedings of the 10th International Conference on the Design of Cooperative Systems*. May 30-1 June, 2012 (pp. 197-211). Springer London.
- R180. Malinen, S., & Ojala, J. (2013). Perceptions of trust between online auction consumers. *Web Portal Design, Implementation, Integration, and Optimization*. IGI Global Publications.
- R181. Martin, K. D., and N. C. Smith. 2008. Commercializing social interaction: The ethics of stealth marketing. *Journal of Public Policy & Marketing*, 27(1), 45-56.
- R182. Mavlanova, A., A.-R. Benbunan-Fich, and G. Lang. 2016. The role of external and internal signals in E-commerce, *Decision Support Systems*, 87, 59-68.
- R183. McKnight, D.-H., V. Choudhury and C. Kacmar. 2002. The impact of initial consumer trust on intentions to transact with a website: a trust building model, *Strategic Information Systems*, 11(3), 297-323.
- R184. McKnight, D.-H. and N.-L. Chervany. 2001. What trust means in e-commerce customer relationships: an interdisciplinary conceptual typology. *Electronic Commerce*, 6(2), 35-59.
- R185. McKnight, H., and C. Kacmar. 2006, January. Factors of information credibility for an internet advice site. In *Proceedings of the 39th Annual Hawaii International Conference on System Sciences (HICSS'06)* 6, 113-123. IEEE.
- R186. Meenaghan, T., and P. O'Sullivan. 2013. Metrics in sponsorship research—is credibility an issue?. *Psychology & Marketing*, 30(5), 408-416.
- R187. Mittendorf, C. 2016. What Trust means in the Sharing Economy: A provider perspective on Airbnb.com, *Twenty-second Americas Conference on Information Systems*, San Diego, 2016.
- R188. Moe, W.-W., and M. Trusov. 2011. The value of social dynamics in online product ratings forums, *Marketing Research*, 48 (3), 444–456.
- R189. Möhlmann, M., T. Teubner, and A. Graul. 2019. Leveraging trust on sharing economy platforms: Reputation systems, blockchain technology and cryptocurrencies. *Handbook of the Sharing Economy*, 290-302.
- R190. Mudambi, S.-M., and D. Schuff. 2010. What makes a helpful online review? A study of customer reviews on Amazon.com. *MIS Quarterly*, 34(1), 185–200.
- R191. Mukhopadhyay, S.-K., and R. Setoputro. 2004. Reverse logistics in e-business. *Physical Distributions and Logistics Management* 34 (1), 70–89.
- R192. Nakayama, M. and Y. Wan. 2019. The cultural impact on social commerce: a sentiment analysis on Yelp ethnic restaurant reviews, *Information and Management*, 56(2), 271-279.
- R193. Neelotpaul, B. 2010. A study on interactivity and online branding, *Advances in Management*, 3(3), 13-17.
- R194. Nyshadham, E. A. 2000. Consumer perceptions of online transaction security-A cognitive explanation of the origins of perception. *AMCIS 2000 Proceedings*, 111.
- R195. Palla, P., R.-H. Tsotsou, and Y.-T. Zotos. 2013. Is website interactivity always beneficial? An elaboration likelihood model approach, in *Proceedings of Advances in Advertising Research*, Springer Gabler, Wiesbaden, 4, 131-145.
- R196. Pang, H. 2021. Identifying associations between mobile social media users' perceived values, attitude, satisfaction, and eWOM engagement: The moderating role of affective factors. *Telematics and Informatics*, 59, 101561.

- R197. Pang, B., and L. Lee. 2004. A Sentimental Education: Sentiment Analysis Using Subjectivity Summarization Based on Minimum Cuts, *Proc. 42nd Ann. Meeting of the Assoc. for Computational Linguistics (ACL '04)*, 271-278.
- R198. Papadimitriou, A., P. Symeonidis, and Y. Manolopoulos. 2012. A generalized taxonomy of explanations styles for traditional and social recommender systems. *Data Mining and Knowledge Discovery*, 24, 555-583.
- R199. Park, H., and G.-T. Cameron. 2014. Keeping it real: exploring the roles of conversational human voice and source credibility in crisis communication via blogs. *Journalism and Mass Communication Quarterly* 91 (3), 487–507.
- R200. Park, H.-J., and L.-M. Lin. 2020. The effects of match-ups on the consumer attitudes toward internet celebrities and their live streaming contents in the context of product endorsement, *Retailing and Consumer Service* 52(2020), 101934.
- R201. Park, D.-H., J. Lee, and I. Han. 2007. The effect of on-line consumer reviews on consumer purchasing intention: the moderating role of involvement, *Electronic Commerce* 11 (4) 125–148.
- R202. Park, C., and T. Lee. 2009. Information direction, website reputation and eWOM effect: A moderating role of product type. *Business Research*, 62 (1), 61–67.
- R203. Park, D. H., and J. Lee. 2008. eWOM overload and its effect on consumer behavioral intention depending on consumer involvement. *Electronic commerce research and applications*, 7(4), 386-398.
- R204. Park, J., L. Stoel and S.-J. Lennon. 2008. Cognitive, affective and conative responses to visual simulation: the effects of rotation in online product presentation, *Consumer. Behavior*, 7, 72-87.
- R205. Parris, D., J. Dapko, R. Arnold, and D. Arnold. 2016. Exploring transparency: A new framework for responsible business management. *Management Decision* 54 (1), 222–247.
- R206. Pavlou, P. A. 2002. Institution-based trust in interorganizational exchange relationships: the role of online B2B marketplaces on trust formation. *The Journal of Strategic Information Systems*, 11(3-4), 215-243.
- R207. Pavlou, P. and D. Gefen. 2004. Building Effective Online Marketplaces with Institution-Based Trust. *Information Systems Research*. 15. 37-59 .
- R208. Pavlou, P.-A. and D. Gefen. 2005. Psychological contract violation in online marketplaces: Antecedents, consequences, and moderating role, *Information Systems Research*, 16(4), 372-399.
- R209. Pavlou, P.-A., H.-G. Liang and Y.-J. Xue. 2007. Understanding and mitigating uncertainty on online buyer-seller relationships: A principal agent perspective. *MIS Quarterly*, 31(1), 105–136.
- R210. Pavlou, P.-A., and A Dimoka. 2006. The Nature and Role of Feedback Text Comments in Online Marketplaces: Implications for Trust Building, Price Premiums, and Seller Differentiation. *Information Systems Research*, 17(4), 392-414.
- R211. Pazzani, M. J., and D. Billsus. 2007. Content-based recommendation systems. In *The adaptive web: methods and strategies of web personalization* (325-341). Berlin, Heidelberg: Springer Berlin Heidelberg.
- R212. Petty, R. D., and J. C. Andrews. 2008. Covert marketing unmasked: A legal and regulatory guide for practices that mask marketing messages. *Journal of public policy & marketing*, 27(1), 7-18.
- R213. Pezderka, N., and R. R. Sinkovics. 2011. A conceptualization of e-risk perceptions and implications for small firm active online internationalization. *International Business Review*, 20(4), 409-422.
- R214. Pizzutti, C., and D. Fernandes. 2010. Effect of recovery efforts on consumer trust and loyalty in e-tail: a contingency model. *International Journal of Electronic Commerce*, 14(4), 127-160.
- R215. Prater, E., M. Biehl, and M. A. Smith. 2001. International supply chain agility-Tradeoffs between flexibility and uncertainty. *International journal of operations & production management*, 21(5/6), 823-839.
- R216. Qi, X., J. H. Chan, J. Hu, and Y. Li, Y. 2020. Motivations for selecting cross-border e-commerce as a foreign market entry mode. *Industrial Marketing Management*, 89, 50-60.
- R217. Qiao, Z., X. Zhang, M. Zhou, G. A. Wang, and W. Fan. 2017. A domain oriented LDA model for mining product defects from online customer reviews. *The 50th Hawaii International Conference on System Sciences (HICSS)*
- R218. Qiu, L., and I. Benbasat. 2005. Online consumer trust and live help interfaces: The effects of text-to-speech voice and three-dimensional avatars. *International journal of human-computer interaction*, 19(1), 75-94.
- R219. Quijano-Sanchez, L., C. Sauer, J. A. Recio-Garcia, and B. Diaz-Agudo. 2017. Make it personal: a social explanation system applied to group recommendations. *Expert Systems with Applications*, 76, 36-48.
- R220. Rahman, A., R. N. Fauzia, and S. Pamungkas. 2020. Factors Influencing Use of Social Commerce: An Empirical Study from Indonesia. *Journal of Asian Finance, Economics and Business*, 7, 711-720.
- R221. Ramanathan, U., and A. Gunasekaran. 2014. Supply chain collaboration: Impact of success in long-term partnerships. *International Journal of Production Economics*, 147, 252-259.
- R222. Read, W., N. Robertson, L. McQuilken and A.-S. Ferdous. 2019. Consumer engagement on Twitter: Perceptions of the brand matter. *Marketing*. 53 (9), 1905–1933.

- R223. Ren, S., T. M. Choi, K. M. Lee, and L. Lin. 2020. Intelligent service capacity allocation for cross-border-E-commerce related third-party-forwarding logistics operations: A deep learning approach. *Transportation Research Part E: Logistics and Transportation Review*, 134, 101834.
- R224. Riasi, A., Z. Schwartz and C. C. Chen. 2018. A proposition-based theorizing approach to hotel cancellation practices research. *International Journal of Contemporary Hospitality Management*, 30(11), 3211-3228.
- R225. Rippé, C. B., B. Smith, and A. J. Dubinsky. 2018. Lonely consumers and their friend the retail salesperson. *Journal of Business Research*, 92, 131-141.
- R226. Rotfeld, H. J. 2008. The stealth influence of covert marketing and much ado about what may be nothing. *Journal of public policy & marketing*, 27(1), 63-68.
- R227. Saini, A., and J. L. Johnson. 2005. Organizational capabilities in e-commerce: An empirical investigation of e-brokerage service providers. *Journal of the Academy of Marketing Science*, 33(3), 360-375.
- R228. Salo, J. and H. Karjaluo. 2007. A conceptual model of trust in the online environment, *Online Information Review*, 31(5), 604-21.
- R229. San Martín, S., and C. Camarero. 2009. How perceived risk affects online buying. *Online Information Review*. 33 (4), 629–654.
- R230. San-Martín, S., N. Jimenez, C. Camarero, and R. San-José. 2020. The path between personality, self-efficacy, and shopping regarding games apps. *Journal of theoretical and applied electronic commerce research*, 15(2), 59-75.
- R231. Sawhney, R., and N. Sumukadas. 2005. Coping with customs clearance uncertainties in global sourcing. *International Journal of Physical Distribution & Logistics Management*, 35(4), 278-295.
- R232. Sepulveda Rojas, J. P., and Y. Frein. 2008. Coordination and demand uncertainty in supply chains. *Production Planning and Control*, 19(7), 712-721.
- R233. Sharma, A., and D. Cosley. 2013, May. Do social explanations work? Studying and modeling the effects of social explanations in recommender systems. In *Proceedings of the 22nd international conference on World Wide Web* (1133-1144).
- R234. Shen, J. 2021. An e-commerce facility location problem under uncertainty, *Science and Technology*, 28(1), 412-423.
- R235. Shen, X.-L., C. M. K. Cheung and M. K. O. Lee. 2013. Perceived critical mass and collective intention in social media-supported small group communication, *Information Management*, 33(5), 707-715.
- R236. Shen, X.-L., K. Z. Zhang, and S. J. Zhao. 2016. Herd behavior in consumers' adoption of online reviews. *Journal of the Association for Information Science and Technology*, 67(11), 2754-2765.
- R237. Shi, Y., T. Wang, and L. C. Alwan. 2020. Analytics for cross-border e-commerce: inventory risk management of an online fashion retailer. *Decision Sciences*, 51(6), 1347-1376.
- R238. Shih, H. Y. 2012. The dynamics of local and interactive effects on innovation adoption: The case of electronic commerce. *Journal of Engineering and Technology Management*, 29(3), 434-452.
- R239. Shukla, P. 2014. The impact of organizational efforts on consumer concerns in an online context. *Information & Management*, 51(1), 113-119.
- R240. Siegrist, M., M. Siegrist, G. Cvetkovich, and C. Roth. 2002. Salient value similarity, social trust, and risk/benefit perception, *Risk Analysis* 20, 353–362.
- R241. Smith, S., and J. Wheeler. 2002. *Managing the customer experience: Turning customers into advocates*. London: Prentice Hall Financial Times and Pearson Education Ltd.
- R242. Sohaib, O., K. Kang, and I. Miliszewska. 2019. Uncertainty Avoidance and Consumer Cognitive Innovativeness in E-Commerce. *Global Information Management* 27. 59-77.
- R243. Soleimani, M. 2022. Buyers' trust and mistrust in e-commerce platforms: a synthesizing literature review. *Information Systems and e-Business Management* 20, 57–78.
- R244. Son, M., and K. Han. 2011. Beyond the technology adoption: Technology readiness effects on post-adoption behavior. *Journal of Business Research*, 64(11), 1178-1182.
- R245. Sotiriadis, M.-D. and C.-V. Zyl. 2013. Electronic word-of-mouth and online reviews in tourism services: the use of twitter by tourists, *Electronic Commerce Research* 13, 103–124.
- R246. Sprague, R., and M. E. Wells. 2010. Regulating online buzz marketing: Untangling a web of deceit. *American Business Law Journal*, 47(3), 415.
- R247. Sprecher, S., S. Treger, and J.-D. Wondra. 2012. Effects of self-disclosure role on liking, closeness, and other impressions in get-acquainted interactions. *Social and Personal Relationships* 30 (4), 497–514.
- R248. Strader, T. J., and S. N. Ramaswami. 2002. The value of seller trustworthiness in C2C online markets. *Communications of the ACM*, 45(12), 45-49.
- R249. Stubb, C., and J. Colliander. 2019. This is not sponsored content—The effects of impartiality disclosure and e-commerce landing pages on consumer responses to social media influencer posts. *Computers in Human Behavior*, 98, 210-222.

- R250. Sussman, S. W., and W. S. Siegal. 2003. Informational influence in organizations: An integrated approach to knowledge adoption. *Information systems research*, 14(1), 47-65.
- R251. Sutanonpaiboon, J., and A. Abuhamdieh. 2008. Factors influencing trust in online consumer-to-consumer (C2C) transactions. *Journal of Internet Commerce*, 7(2), 203-219.
- R252. Tang, Z., and L. Chen. 2020. An empirical study of brand microblog users' unfollowing motivations: The perspective of push-pull-mooring model. *International Journal of Information Management*, 52, Article 102066. 10.1016/j.ijinfomgt.2020.102066.
- R253. Tang, H., and X. Lin. 2019. Curbing shopping cart abandonment in C2C markets —An uncertainty reduction approach. *Electronic Markets*, 29 (3), 533–552. 10.1007/s12525-018-0313-6.
- R254. Techinakarawin, T., and J. Sun. 2023. Does Impulsive Posting Hurt or Help? The Effects of Conflicting Online Information on Attitude Uncertainty and Behavioral Consequences: The Moderating Role of Peer Social Network Support. *Theoretical and Applied Electronic Commerce Research* 18(1), 615–633.
- R255. Ter Huurne, M., A. Ronteltap, R. Corten, and V. Buskens. 2017. Antecedents of trust in the sharing economy: A systematic review. *Consumer Behavior*, 16(6), 485-498.
- R256. Thierer, A., C. Koopman, A. Hobson, and C. Kuiper. 2015. How the internet, the sharing economy, and reputational feedback mechanisms solve the lemons problem. *U. Miami L. Rev.*, 70, 830.
- R257. Tracy, J.-L., and R.-W. Robins. 2007. The psychological structure of pride: a tale of two facets, *Personality and Social Psychology* 92 (3), 506–525.
- R258. Utz, S., U. Matzat, and C. Snijders. 2009. On-line reputation systems: The effects of feedback comments and reactions on building and rebuilding trust in on-line auctions. *International Journal of Electronic Commerce*, 13(3), 95-118.
- R259. Valkenburg, P. M., and M. Buijzen. 2005. Identifying determinants of young children's brand awareness: Television, parents, and peers. *Journal of Applied Developmental Psychology*, 26(4), 456-468.
- R260. Van Nguyen, T., L. Zhou, A. Y. L., Chong, B. Li, and X. Pu. 2020. Predicting customer demand for remanufactured products: A data-mining approach. *Operational Research* 281 (3), 543–558.
- R261. Vonkeman, C., T. Verhagen, and W. Van Dolen. 2017. Role of local presence in online impulse buying, *Information Management* 54(8), 1038-1048.
- R262. Wan, Y. and M. Nakayama. 2014. The Reliability of Online Review Helpfulness, *Electronic Commerce Research* 15, 179–189.
- R263. Wang, Y., J. Wang, T. Yao, M. Li, and X. Wang. 2020. How does social support promote consumers' engagement in the social commerce community? The mediating effect of consumer involvement. *Information Processing & Management*, 57(5), 102272.
- R264. Wang, J., F. Shahzad, Z. Ahmad, M. Abdullah and N.-M. Hassan. 2022. Trust and Consumers' Purchase Intention in a Social Commerce Platform: A Meta-Analytic Approach. *SAGE Open*, 12(2).
- R265. Wang, Y., J. Anderson, S. Joo, and J. Huscroft. 2019. The leniency of return policy and consumers' repurchase intention in online retailing. *Industrial Management & Data Systems*, 120(1), 21–39.
- R266. Wang, C., P. Zhang, R. Choi, R., and M.D. Eredita. 2002. Understanding consumers attitudes toward advertising. In *Proceedings of the 8th Americas conference on information systems* (pp.1143–1148). Texas: Dallas.
- R267. Wang, C.-H, and J.-Y., Chen. 2019. Demand forecasting and financial estimation considering the interactive dynamics of semiconductor supply-chain companies. *Computers & Industrial Engineering*. 138.
- R268. Wang, W., & Benbasat, I. 2008. Attributions of Trust in Decision Support Technologies: A Study of Recommendation Agents for E-Commerce. *Journal of Management Information Systems*, 24(4), 249–273.
- R269. Weathers, D., S. Sharma, and S.-L. Wood. 2007. Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods, *Retailing* 83 (4), 393–401.
- R270. Weathers, D., S. Swain, and V. Grover. 2015. Can Online Product Reviews be More Helpful? Examining Characteristics of Information Content by Product Type. *Decision Support Systems*. 79, 12-23.
- R271. Wei, P. S., and H. P. Lu. 2013. An examination of the celebrity endorsements and online customer reviews influence female consumers' shopping behavior. *Computers in Human Behavior*, 29(1), 193-201.
- R272. Willemsen, L.-M., P.-C. Neijens, F. Bronner and J.-A. de Ridder. 2011. 'Highly recommended!' The content characteristics and perceived usefulness of online consumer reviews, *Computer Mediated Communication* 17, 19–38.
- R273. Wongkitrungrueng, A., and N. Assarut. 2020. The role of live streaming in building consumer trust and engagement with social commerce sellers. *Journal of Business Research*, 117, 543–556.
- R274. Wu, G. C. 2013. The influence of green supply chain integration and environmental uncertainty on green innovation in Taiwan's IT industry. *Supply Chain Management: An International Journal*, 18(5), 539-552.
- R275. Wu, J.-J. and Y.-S. Chang. 2006. Effect of transaction trust on e-commerce relationships between travel agencies, *Tourism Management*, 27(6), 1253-1261.

- R276. Wu, Y. 2011. Linear robust models for international logistics and inventory problems under uncertainty, *International Journal of Computer Integrated Manufacturing*, 24(4), 352-364.
- R277. Wu, J., J. Chen, H. Chen, W. Dou, and D. Shao. 2019. What to say on social media and how: Effects of communication style and function on online customer engagement in China. *Service Theory Practice* 29 (5/6), 691–707.
- R278. Xiao, B., and I. Benbasat. 2007. E-Commerce Product Recommendation Agents: Use, Characteristics, and Impact. *MIS Quarterly*, 31(1), 137-209.
- R279. Xiao, B. and I. Benbasat. 2014. E-commerce Product Recommendation Agents: Use, Characteristics and Impact, *MIS Quarterly*, 31, 137-209.
- R280. Xiao, B., M. Huang and A.-J. Barnes. 2015. Network closure among sellers and buyers in social commerce community, *Electronic Commerce Research and Applications*, 14(6), 641-653.
- R281. Xu, Y., and Y. Ye. 2020. Who watches live streaming in China? Examining viewers' behaviors, personality traits, and motivations. *Frontiers in Psychology*, 11, 1607.
- R282. Xu, F., Z. Pan, and R. Xia. 2020. E-commerce product review sentiment classification based on a naïve Bayes continuous learning framework. *Information Processing & Management*, 57(5), 102221.
- R283. Xu, X., J. H. Wu, and Q. Li. 2020. What drives consumer shopping behavior in live streaming commerce? *Journal of electronic commerce research*, 21(3), 144-167.
- R284. Xu, X. 2019. The architecture of China's cross-border e-commerce platform based on the data mining technology, *International Conference on Big Data Analytics for Cyber-Physical-Systems*, Singapore, December 2019, Springer, 1607-1613.
- R284. Xu, F., J. Lian, Z. Han, Y. Li, Y. Xu, and X. Xie. 2019, November. Relation-aware graph convolutional networks for agent-initiated social e-commerce recommendation. In *Proceedings of the 28th ACM international conference on information and knowledge management* (pp. 529-538).
- R285. Yim, M. Y. C., S. C. Chu, and P. L. Sauer. 2017. Is augmented reality technology an effective tool for e-commerce? An interactivity and vividness perspective. *Journal of interactive marketing*, 39(1), 89-103.
- R286. Yin, X., H. Wang, Q. Xia, and Q. Gu. 2019. How social interaction affects purchase intention in social commerce: A cultural perspective. *Sustainability*, 11(8), 2423.
- R287. Ying, W., and S. Dayong. 2005. Multi-agent framework for third party logistics in E-commerce. *Expert Systems with Applications*, 29(2), 431-436.
- R288. You, Y., G.-G. Vadakkepatt, and A.-M. Joshi. 2015. A meta-analysis of electronic word-of-mouth elasticity, *Marketing*. 79, 19–39.
- R289. Zeng, Q., Q. Guo, W. Zhuang, Y. Zhang, and W. Fan. 2023. Do real-time reviews matter? Examining how bullet screen influences consumers' purchase intention in live streaming commerce. *Information systems frontiers*, 25(5), 2051-2067.
- R290. Zhang, K. Z. K., S.-J. Barnes, S.-J. Zhao, and H. Zhang. 2018. Can consumers be persuaded on brand microblogs? An empirical study, *Information Management*, 55, 1-15.
- R291. Zhang, H., Y. Lu, S. Gupta, and L. Zhao. 2014. What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences. *Information Management* 51 (8), 1017–1030 .
- R292. Zhang, W., and S. Watts. 2003. Knowledge adoption in online communities of practice. In S.T. March, A. Massey, and J.I. Degross (eds.), *Proceedings of the 24th International Conference on Information Systems*. Seattle: Association for Information Systems, 96–109.
- R293. Zhang, K. Z., S. J. Zhao, C. M. Cheung, and M. K. Lee, M. K. 2014. Examining the influence of online reviews on consumers' decision-making: A heuristic–systematic model. *Decision Support Systems*, 67, 78-89.
- R294. Zhang, W. and S. Watts. 2008. Online communities as communities of practice: A case study. *Journal of Knowledge Management*, 12 (4), 55–71.
- R295. Zhang, J., H. Li, R. Yan, and C. Johnston. 2016. Examining the Signaling Effect of E-tailers' Return Policies. *Journal of Computer Information Systems*, 57(3), 191–200.
- R296. Zhao, X. W., Y. Guo, Y. He, H. Jiang, Y. Wu, and X. Li. 2014, August. We know what you want to buy: a demographic-based system for product recommendation on microblogs. In *Proceedings of the 20th ACM SIGKDD international conference on Knowledge discovery and data mining* (pp. 1935-1944).
- R297. Zhao, L. and Y. Lu. 2012. Enhancing perceived interactivity through network externalities: An empirical study on microblogging service satisfaction and continuance intention, *Decision Support Systems*, 53(4), 825-834.
- R298. Zhao, W. X., J. Wang, Y. He, J.R. Wen, E.Y. Chang, and X. Li. 2016. Mining product adopter information from online reviews for improving product recommendation. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 10(3), 1-23.

- R299. Zhou, T., Y. Lu, and B. Wang. 2009. The relative importance of website design quality and service quality in determining consumers' online repurchase behavior, *Information Systems Management*, 26(4), 327-37.
- R300. Zhu, Y.-Q., D. Amelina, and D.-C. Yen. 2022. Celebrity endorsement and impulsive buying intentions in social commerce-The case of instagram in Indonesia: Celebrity endorsement. In *Research Anthology on Social Media Advertising and Building Consumer Relationships* (pp. 1401-1419). IGI Global.
- R301. Zhu, J.-Y., and B. C. Y. Tan. 2007. Effectiveness of blog advertising: Impact of communicator expertise, advertising intent, and product involvement. *International Conference on Information Systems, ICIS 2007*. Canada: Montreal.
- R302. Zhu, F., and X. Zhang. 2006. The influence of online consumer reviews on the demand for experience goods: The case of video games. *ICIS 2006 proceedings*, 25.
- R303. Sun, Y., X. Shao, X. Li, Y. Guo, and K. Nie. 2019. How live streaming influences purchase intentions in social commerce: An IT affordance perspective, *Electronic Commerce Research and Applications*, 37, 100886.
- R304. Al-Natour, S., I. Benbasat, and R.T. Cenfetelli. 2011. The adoption of online shopping assistants: Perceived similarity as an antecedent to evaluative beliefs. *Association Information System*, 12(5), 347-374.
- R305. Chen Y., Y. Lu, B. Wang, Z. Pan. 2019. How do product recommendations affect impulse buying? An empirical study on WeChat social commerce. *Information and Management*, 56(2), 236-248.
- R306. Chang, D., H.Y. Gui, R. Fan, Z.Z. Fan, J. Tian. 2019. Application of Improved Collaborative Filtering in the Recommendation of E-commerce Commodities, *Computers Communications & Control*, 14(4), 489-502.
- R307. Chen C.-C., K.-L. Hsiao, S.-J. Wu. 2018. Purchase intention in social commerce: An empirical examination of perceived value and social awareness. *Library Hi Tech*, 36(4), 583-604.
- R308. Han B., J. Windsor. 2011. User's willingness to pay on social network sites. *Computer Information Systems*, 51, 31-40.
- R309. Sobihah, M., M. Mohamad, N.A.M. Ali, and W.Z.W. Ismail. 2015. E-Commerce Service Quality on Customer Satisfaction, Belief and Loyalty: A Proposal, *Mediterranean Journal of Social Sciences*, 2.
- R310. Bansal, S., G. Gutierrez, and J. Keiser. 2016. Quantifying Uncertainties and Risks Using Managerial Judgments in a Dynamic New Product Development Environment. *Production and Operations Management*, 25(12), 2010-2013.
- R311. Teubner, T., M. Adam, S. Ahumada, K. Hassanein. 2015. To share or not to share on consumer-to-consumer platforms: The role of user representation. *Institute of Information Systems and Marketing (IISM) working paper*.
- R312. Chen, J., X-L. Shen, Z-J. Chen. 2014. Understanding Social Commerce Intention: A Relational View. *Proceedings of the Annual Hawaii International Conference on System Sciences*. 1793-1802.
- R313. Chen, C-C. and Y-C. Lin. 2018. What drives live-stream usage intention? The perspectives of flow, entertainment, social interaction, and endorsement, *Telematics and Informatics*, 35(1), 293-303.
- R314. Turban, E., J. Whiteside, D. King, J. Outland. 2017. *Introduction to Electronic Commerce and Social Commerce*, Springer Publications.
- R315. Bhatt, G. 2004. Bringing Virtual Reality For Commercial Web sites. *Human-Computer Studies*, 60, 1-15.