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Mapping the terrain of social and livestream commerce research through the affordance lens: A bibliometric review and research agenda

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ABSTRACT

Livestream commerce is a form of social commerce that leverages advanced technology for interactivity. Although research is complex due to vast geographical and platform diversity, this domain is ideal for applying affordance theory. We systematically analyze 62 livestreaming and social commerce research papers that have used affordance theory. Our three-step methodology includes performance analysis to identify prolific authors and collaborative patterns; thematic analysis to uncover methodological approaches, contextual themes and focal points of investigation; and science mapping to identify thematic evolution and research frontiers. Through our integrated perspective on affordance theory in social and livestream commerce, we present a typology of key affordances, review prominent works, categorize clusters and topics and identify four research frontiers. We propose an integrated model to explore potential avenues for research on consumer behaviours, holistically integrating actors, context, platform diversity and affordances, and addressing methodological challenges, including use of visual methodologies to investigate real-time interactions.

1. Introduction

Although research identifies social and livestream commerce (SC and LS) as amongst the most promising areas for future growth, exponential growth is currently concentrated in China and other Asia Pacific countries, while Western countries lag far behind (Ceci, 2022). Regardless of its actual market size, livestream commerce has become a buzzword in the literature and industry.

LS displays products to customers in real-time videos to narrow the distance between customers and products. It has markedly extended traditional e-commerce through its high social interaction, using virtual face-to-face technology within the consumer journey. It is already very popular in some sectors, with over 8.2 billion hours of entertainment content consumed annually, over 40 % of performers livestreaming concerts monthly, and significant developments in online live e-commerce led by tech company Alibaba (Ceci, 2022). Although customers in the Asia Pacific region continue to be more interested in LS than the rest of the world, the European appetite is changing, with younger populations expressing greater interest in livestreaming on e-commerce, social media and gaming platforms (Statista, 2021).

The intricate landscape of SC and LS research, which is still in its

infancy, arises from the industry's vast geographical and platform variety. The affordance lens is a popular theoretical approach to studying this topic; nevertheless, very few systematic or bibliometric reviews have mapped the field of affordance-based SC and LS research. The concept of affordance refers "neither to the environment nor to the individual, but to the relationship between the individual and the environmental cognition" (Parchoma, 2014, p. 361). Affordance theory is concerned with potential behaviours arising from relationships between individuals and objects (Bygstad et al., 2016), and has thus become a popular choice to help investigate the untapped territory of relationships between individuals and the various technical, social and relational features of this new form of commerce (Sun et al., 2019). Scholars of affordance theory advocate its use as a powerful tool, particularly for understanding and unpacking interrelationships between a person (user) and a new environment (platform) (Sun et al., 2019, 2020; Treem and Leonardi, 2013; Tuncer, 2021; Zhou and Lou, 2023). As a result, the field has witnessed a boom in studies using affordance theory to investigate SC and LS. However, few reviews have been conducted to provide a comprehensive view of the field. Our study focuses specifically on reviewing research papers that employ affordance theory to study SC and LS.

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LS is regarded as a new form of SC, so the two fields have naturally merged without well-defined boundaries. Most studies share similar frameworks of affordances applied in different contexts to investigate livestreaming features as drivers of trust in SC platforms (Wongkitrungrueng and Assarut, 2020) and recommendations (Liao et al., 2021), or as a new form of SC (Guo et al., 2021) emerging from the development of new technologies (Zhao et al., 2023). Indeed, the boundaries between SC and LS are blurred because platforms continue to integrate the two into customer experiences. Despite the inter-connectedness of these fields, previous reviews have examined specific aspects of either LS or SC, not their interconnectedness, thus offering only a partial view of specific areas. For instance, some reviews focus on understanding the emergent phenomenon of LS in areas such as users' behaviours in tourism and hospitality (Lin et al., 2022) and the legal and ethical challenges of livestreaming (Fietkiewicz, 2020). Similarly, current SC reviews focus narrowly on the systematization and synthesis of SC research (Busalim and Hussin, 2016; Busalim et al., 2019; Han et al., 2018), consumer adoption of SC (Dwivedi et al., 2021), consumer trust (Mou and Benyoucef, 2021), customer experiences in SC (Dhaigude and Mohan, 2022) and online consumer behaviour (Zhao et al., 2023), as well as a systems approach to overcome the drawbacks of a single-factor approach (Wang et al., 2022b).

Current reviews suggest a dearth of comprehensive examinations of the two inter-connected fields. Accordingly, no thorough review seems to have taken stock of the literature's performance and scientific contributions to LS opportunities for e-commerce and its relationship with SC environments, with an emphasis on affordance theory. Current professional practice in LS also raises various ongoing challenges, which need to be classified and analyzed to understand the content and context of extant research and shape future research paths. The novelty of our study lies in exploring how affordance theory has been applied within the realm of SC and LS. We systematically elucidate the landscape of platform-specific affordances and developmental trajectories, and propose areas for further development. Notably, in this context the majority of extant research relies heavily on the affordance models pioneered by Dong and Wang (2018).

The main aim of this study is to map the terrain of SC and LS research through the affordance lens by presenting (1) a performance analysis of LS and SC studies that have employed an affordance lens, (2) a thematic analysis (Andersen, 2019) of the most dominant methodologies, research classifications across different designs, data types and geographical concentration (Baker et al., 2020), and (3) a science mapping (Cobo et al., 2011; Donthu et al., 2021) of LS and SC studies that have employed an affordance lens, including analysis of collaboration patterns (Crane, 1977), research trends, group predominance, prominent underlying themes and future research avenues. Specifically, we address the following research questions:

RQ1: What are the productivity and impact of affordance-based SC and LS research?

RQ2: What geographical and methodological themes are present in this literature, and what key contextual themes, types of platforms and affordances and focal points are observed in consumer-brand interactions in these domains?

RQ3: How do these connections, patterns and underlying themes map the terrain of the literature on affordance-based SC and LS?

In this paper, we explain and justify our methodology for the literature search and analysis, and present our findings in three main sections on performance analysis, thematic analysis and comprehensive science mapping. We then identify four research frontiers in the field, and explain their implications for future research, before drawing some conclusions.

2. Methodology

In this study, we integrate a systematic literature review (SLR)

(Tranfield et al., 2003) with a bibliometric analysis (Donthu et al., 2021). While SLR allows for transparent, replicable and authentic research, it is not immune to potential interpretive biases owing to its qualitative nature (MacCoun, 1998). Combining SLR with bibliometric analysis helps overcome such drawbacks and allows analysis of a large sample of work (Ramos-Rodríguez and Ruíz-Navarro, 2004). Guided by Mukherjee et al.'s (2022) bibliometric method, we integrate research objectives with the proposed methodology outlined in Table 1.

2.1. Literature search

A bibliometric index is a metric to gauge specific facets of scientific activity, enabling assessment of research impact in diverse scientific fields. Two primary databases, Web of Science (WoS) and Scopus, facilitate this analysis, although these are commercially inclined. Notably, Clarivate and Elsevier have leveraged these databases to create applications that allow organizations to evaluate their research from multiple perspectives. These enable the formulation and assessment of strategies grounded in reliable data (Garcia-Zorita et al., 2018, Traag et al., 2019).

Following the procedures of SLR (Tranfield et al., 2003), we began by defining our search strategy, as shown in Fig. 1. In the first step, we defined the search queries for a keyword search in the WoS and Scopus databases. We chose these databases based on their data download capabilities (Moral-Muñoz et al., 2020). We placed no temporal constraints on the data search in either of the databases, encompassing all available publications up to December 2023. The search terms used to query previews with booleans were: LIVE STREAMING (Combined with OR) "Live streaming commerce", "Real-time shopping", "Real-time shop*", "E-commerce live stream*", "Live-stream shopping", "Live-stream shop*", "Live shopping", "live commerce", "live streaming e-commerce", "Live-stream*", "Live streaming", "Live video streaming", "live streamer*", "live econom*", "live-streamer*"; OR SOCIAL COMMERCE (Combined with OR) "Social commerce", "Social-commerce", "s-commerce", "scommerce", "scommerc*", "Social shopping", "Social shop*"; AND "affordance*", "IT AFFORDANCE", "it affordance*", "Technology AFFORDANC*", "Technol* AFFORDANC*". In this initial stage, we established the foundation for a thorough search spanning the entire WoS.

This deliberate strategy allowed us to smoothly incorporate the selection of internal WoS databases in subsequent phases of our search and selection process. Such an approach effectively mitigates the constraints associated with relying solely on a customized subset of WoS (Liu, 2019). This initial search produced 1,427 documents. The search queries in Scopus mirrored those used in WoS. Notably, no data period was

Table 1
Overview of the research methodology and design.

Research question	Analytical strategy	Analytical tool	Data type	Technology used
RQ1	Set out the publications and citation patterns of contributors and	Performance analysis	Publications Citations Sources Authors	Databases: Web of Science (WoS) Scopus
RQ2	Conduct a thematic analysis of the review corpus	Thematic analysis	Publications	Software: VOSviewer Atlas.ti R Studio (Bibliometrix, Biblioshiny)
RQ3	Verify the different content markers and develop thematic clusters	Co-citation analysis Bibliographic coupling analysis Co-occurrence analysis	Publications References Citations Keywords	

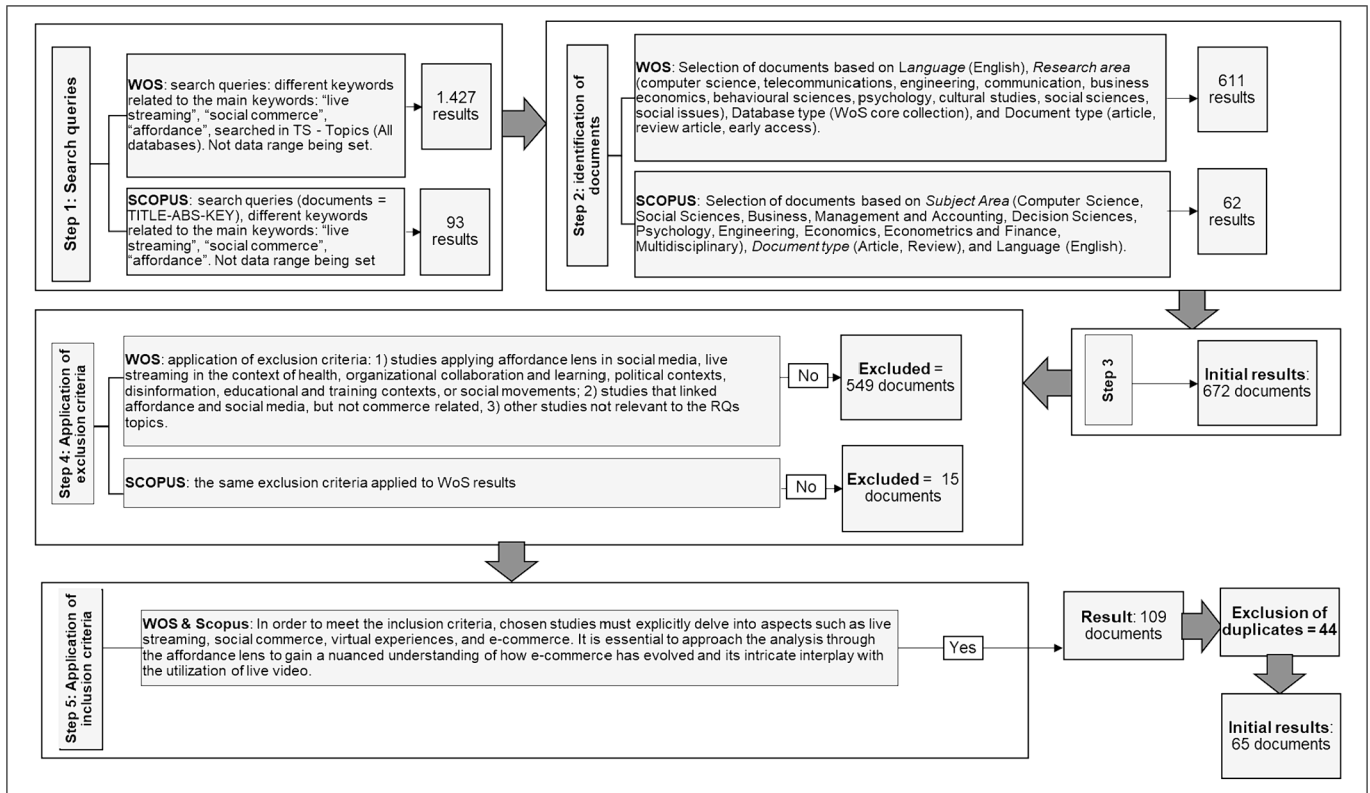


Fig. 1. Literature search strategy.

specified, encompassing results up to December 2023. However, the search terms were applied only to the titles of publications and author-designated keywords. This meticulous criterion yielded a more succinct set of documents (n = 93).

In step 2, we refined WoS results to categories linked with relevant research areas (computer science, telecommunications, engineering, communication, business economics, behavioural sciences, psychology, cultural studies, social issues, other social sciences topics), document types (article, early access, review article), databases (WOS core collection), published in English. This initial query yielded 611 documents. Similarly, we refined the Scopus results to encompass relevant subject areas, including computer science, social sciences, psychology, engineering, econometrics and finance and multidisciplinary categories. We also filtered by document type, specifically focusing on articles and reviews, while restricting the language to English. Through this refinement process, we obtained 62 results.

To ensure relevance, in steps 3 and 4, we conducted a detailed screening process through manual analysis of the remaining documents by scrutinizing their abstracts, titles and keywords. Our inclusion criteria were that the selected studies must mention livestreaming, affordance and SC. We also included documents mentioning integrated virtual experiences, e-commerce and SC linked with an affordance lens to understand the evolution of e-commerce and its links with live video usage. During this manual analysis, we excluded all articles that did not align with our research objectives. A large group of studies was removed from our sample (WoS = 549, Scopus = 15), as they explored the topics of social networks, social media or live streaming in the contexts of health, organizational collaboration and learning, political contexts, disinformation, education and training contexts or social movements, but lacked any connection with affordance theory and commerce-related themes. This careful check of the data resulted in a sample of 109 documents.

The last stage of the process involved thoroughly checking for duplicates across the two databases. We identified and excluded 44

duplicate documents, resulting in a definitive sample of 65 documents. In this process, we identified three documents that were only available in Scopus (Ma et al., 2022; Lu et al., 2023; Jia et al., 2024). As a result of this search process, the documents and citations aggregated from the two databases were well connected, and the bibliometric analysis findings between the two databases did not differ significantly (Archambault et al., 2009).

2.2. Method of analysis

To address the research questions, we began by conducting performance analysis (RQ1), which involves using citations and publications as measures of influence and productivity (Ding et al., 2009). For RQ2, to analyze the dominant methodologies in affordance-based LS and SC research, we classified the articles based on their research approach (empirical, conceptual, modelling and analytical, review or mixed) and design (quantitative, qualitative or mixed) (Baker et al., 2020), and on the research source (archival, survey, case study, interview, experimental or field) (Cumming et al., 2023). We used Thomas and Harden's (2008) thematic analysis approach to identify key types of affordances, key platforms for LS and SC and their focus. Using Atlas.ti, we read and coded our dataset of papers and identified key themes using a constant comparative approach. We discussed and agreed on all emerging themes before synthesizing them into the themes presented in this paper.

To present a science mapping of LS and SC studies that have used the affordance lens (RQ3), we combined tools such as co-authorship analysis (Acedo et al., 2006), keyword co-occurrence analysis (Cahlik, 2000), co-citation analysis (Hota et al., 2020; Xu et al., 2018) and bibliographic coupling (Baker et al., 2020), using references as content markers for the two analyses. Documents frequently cited together share a thematic similarity (Small, 1973) and allow for identification of consensus among scholars on a given paradigm (Culnan et al., 1990). Co-citation analysis reveals the intellectual structure and evolution of a research field, portraying shifts in interests and intellectual patterns over time. Measuring

co-citation strength gauges the degree of relationship or association between documents, as perceived by the citing authors' community (Small, 1973).

To explore underlying themes shaping the literature landscape and address RQ3, we used bibliographic coupling, a technique that identifies contemporary research frontiers and highlights recent areas of emphasis (Zupik and Cater, 2014). This has been extensively employed by others (Boyack and Klavans, 2010; Mura et al., 2018; Skute, 2019), and Zupik and Cater (2014) affirm its suitability for analyzing recent publications, emphasizing document citation and the establishment of links through cited references. Some argue that it is more precise than co-citation or citation analysis (Boyack and Klavans, 2010). In dynamic research fields, bibliographic coupling performs better than other techniques (Vogel and Güttel, 2013). Hence, we combined bibliographic coupling with citation, co-citation and keyword co-occurrence analysis.

Examining cited references allowed us to comprehend the main themes developed by scholars and how articles share literature references. This allowed us to identify thematic similarities, which we used to create clusters of articles and determine the key themes. We also used the bibliometrix R package, a comprehensive toolkit for quantitative analysis and scientometrics in R (Aria and Cuccurullo, 2017), and VOSviewer, known for its intuitive interface and graphical capabilities, facilitating enhanced network visualizations (Van Eck and Waltman, 2010).

3. Performance analysis of affordance-based social and livestream commerce research

Our performance analysis of the review corpus covers patterns of publication and citation, the most prolific contributors, the most cited papers and the most relevant journals. As illustrated in Fig. 2, LS and SC research using the affordance lens is relatively recent, with most published within the last six years, despite specifying no cut-off point for inclusion. In addition to publications, we highlight how extensively this published work has been cited, showing a peak in citations in 2019 for both LC and SC. LS research attracts 58 % of total citations, with a peak in both publications and citations in 2022–2023, indicating a recent rise in popularity.

We utilized VOSviewer for network analysis of author citations, applying a threshold of one document per author and a minimum of ten citations, and employing Van Eck and Waltman's (2010) association strength method for normalization. Fig. 3. illustrates the citations from author analysis based on authors' names, the number of documents they published, the number of citations and the total link strength, calculated by standard weighting attributes that indicate the total strength of one item's links with other items (MacAllister et al., 2022).

In LS, the most cited authors are Sun, Y., Shao, X., Nie, K. Li, X. and Guo, Y., sharing two publications and 336 citations (Sun et al., 2019, 2020). The most cited authors in SC are Lin, J., Guo, J., Turel, O., Liu, S., Luo, Z., Cheng, X. and Li, L., sharing two documents and 150 citations (Lin et al., 2019, 2020). Sun et al.'s (2019) work stands out prominently in the network overlay, featuring a network of 220 links and a total link strength of 302. This underscores its significance in providing comprehensive citation coverage from 2019 to 2023, having been established as a seminal work on the integration of LS into SC research through the application of affordance theory.

Using the R studio Biblioshiny tool, Fig. 4 highlights how authors' publications have evolved over time. The colour intensity is proportional to the year of citation, and the bubble size represents the author's relative yearly output.

As shown in Fig. 4, authors exhibit diverse production trends over a five-year span, with Sun et al. amassing approximately 60 total citations per year for their 2019 publication, and a second lesser-cited publication in 2020. Dong, X. stands out as the author with the most extended coverage period, having published a paper on affordances in SC in 2018 and a recent one on LS in 2023.

Next, we conducted document citation analysis to identify the most cited papers in this field. With a minimum threshold of 10 citations, we identify 32 documents. Table 2 presents the largest set of connected documents (19). While Sun et al.'s (2019) paper is the most cited in LS research, with 300 citations, two publications by Lin, J. B. (Lin et al., 2019, 2020) have accumulated 146 citations in SC.

To deepen our comprehension of connections between the documents, we conducted an intellectual structure analysis using historiography with R Studio to identify three primary relationships, as shown in Fig. 5. Notably, Tuncer's (2021) research on SC affordances exhibits a broader historiographic relationship, exerting influence on subsequent works on LS affordances, including those by Zhang et al. (2023), Yan et al. (2023), Xiong et al. (2023) and Shin et al. (2024).

The performance analysis reveals 44 journals as sources for the review corpus, most commonly categorized as information science, computer science, communication and business journals. Citation analysis of sources enables us to identify the top five journals publishing the highest number of publications within the review corpus and with the highest accumulation of citations. SC and LS research is strongly concentrated in information systems and computer science categories see (Table 3).

4. Thematic analysis of affordance-based social and livestream commerce research

To address RQ2, we conducted thematic analysis of geographical, methodological and contextual themes, as well as types of platforms,

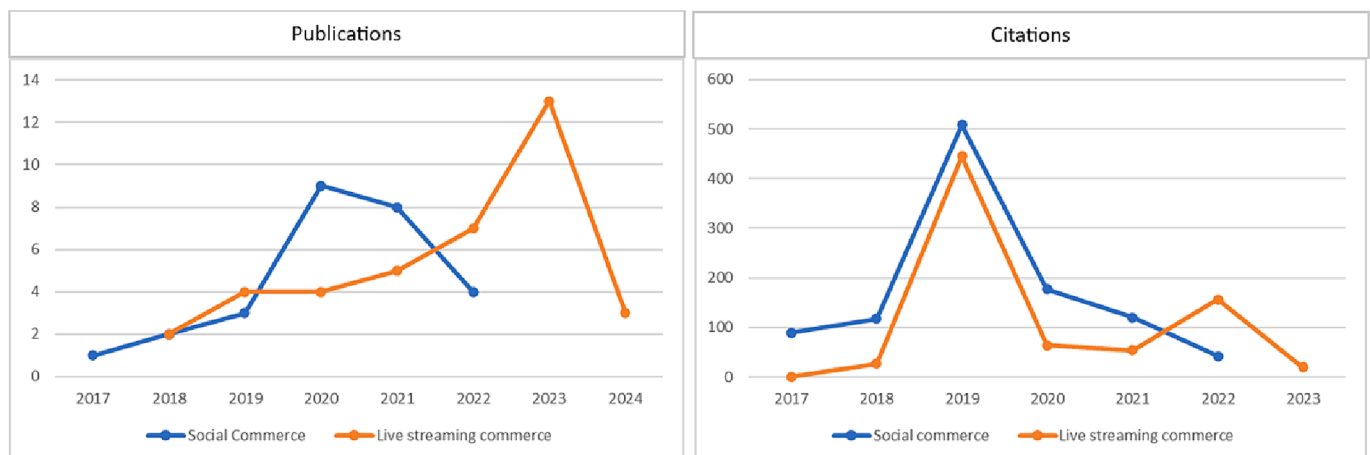


Fig. 2. Pattern of yearly publications and citations for LS and SC research that has used an affordance lens.

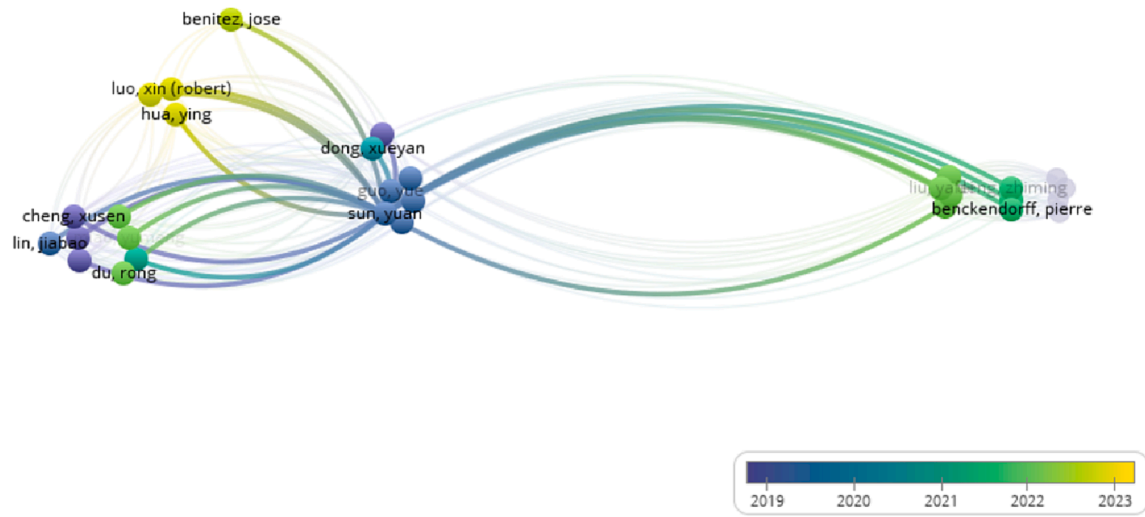


Fig. 3. Network and connections among LS and SC authors using the affordance lens.

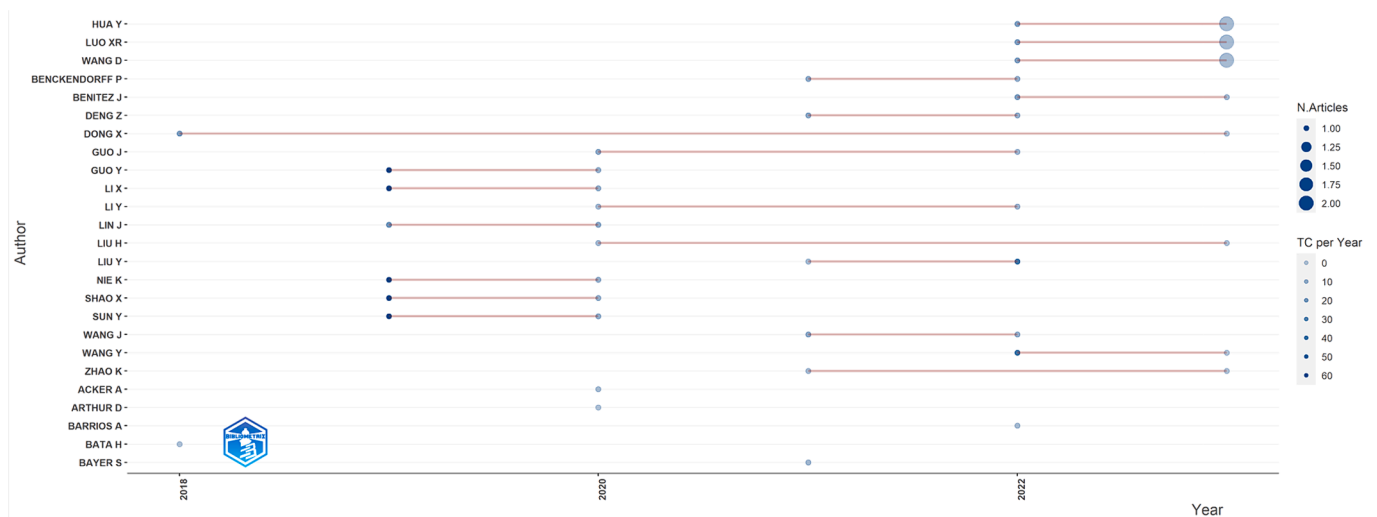


Fig. 4. Top authors' production from 2018 to 2023.

typology of affordances and focal points in consumer–brand interactions in LS and SC.

4.1. Geographical and methodological themes

Using R Studio, we scrutinized the countries of corresponding authors to identify single- and multi-country collaborative publications, covering 17 countries in total. China emerges as the predominant corresponding author's country, with 26 articles, of which 15 are single-country publications, followed by the USA with 16 articles, of which 11 are single-country publications (see Fig. 6).

Unsurprisingly, China plays a pivotal role in collaborations with other countries, particularly the USA (with 10 collaborations), as depicted in dark blue on the collaboration map in Fig. 7.

To discern methodological trends in the realm of LS and SC research, we performed thematic analysis in Atlas.ti, utilizing predefined categories (Baker et al., 2020; Cumming et al., 2023) to categorize these publications based on their research approach, design and sample source. Fig. 8 shows a predominance of empirical studies, with a pronounced preference for quantitative research designs, particularly in the SC domain. Qualitative LS studies are centred around exploring archival

data, sourced primarily from APIs of online streaming platforms. In contrast, quantitative studies in SC and LS rely predominantly on survey methodologies, making surveys the most prevalent sample source.

We also filtered documents based on their citations. Table 4 presents the most cited papers in the two domains.

4.2. Contextual themes, platform types and affordance types

The next aspect of RQ2 entailed delineating pivotal contextual themes, platform categories and affordance typologies through thematic analysis conducted with Atlas.ti. Textual examination of the documents employing a constant comparative method facilitated categorization of the studies' contextual emphasis within LS and SC. This process established connections between the studies, the platforms under investigation and classification of the various affordances explored in these studies. The results of this analysis are presented in Tables 5 (LS) and 6 (SC).

Table 5 identifies four contextual themes, with the predominant shopping-related LS theme revolving around the affordances of live videos to create real-time product demonstrations, instant responses, personalized services and an immersive, engaging shopping experience

Table 2

The largest set of connected articles on SC and LS using the affordance lens (based on citations and total link strength).

Authors	Year	Journal	Total citations /Link strength	Field
Sun et al.	2019	Electronic Commerce Research and Applications	300/9	LS
Dong and Wang	2018	International Journal of Information Management	101/7	SC
Lin et al.	2019	Information & Management	105/6	SC
Zhang et al.	2022	Computers in Human Behavior	73/4	LS
Tuncer	2021	Technology in Society	40/4	SC
Deng et al.	2021	Information Technology & Tourism	34/4	LS
Sjöblom et al.	2019	Computers in Human Behavior	69/3	LS
Miao et al.	2022	Information & Management	13/3	SC
Shao and Pan	2019	International Journal of Information Management	61/2	SC
Wang et al.	2022a	Decision Support Systems	32/2	LS
Deng et al.	2022	Tourism Management	17/2	LS
Xu et al.	2022	Journal of Global Information Management	11/2	LS
Su et al.	2020	Sustainability	21/2	LS
Lin et al.	2020	International Journal of Information Management	45/1	SC
Sun et al.	2020	Electronic Commerce Research and Applications	36/1	LS
Wu et al.	2022	Journal of the Academy of Marketing Science	19/1	SC
Fang et al.	2021	Information Technology & People	18/1	SC
Zou, S.	2018	TripleC: Communication Capitalism & Critique	17/1	LS
Zhao et al.	2021	Journal of the Association for Information Systems	12/1	LS

Notes: The citation analysis is based on network document citation analysis conducted with VOSviewer; SC = Social Commerce; LS = Livestreaming.

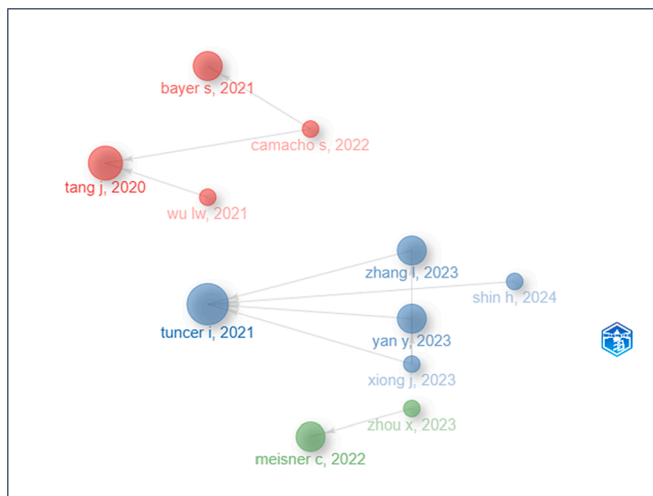


Fig. 5. Historiography of LS and SC affordance-based research, obtained using R Studio.

that fosters more intimate connections (e.g., Su et al., 2020; Xu et al., 2020, 2022; Xue et al., 2020; Sun et al., 2019; Zhang et al., 2022). *Gaming-related LS* is the second most predominant theme, focusing on real-time gamer–audience interactions for entertainment, engagement and revenue purposes (e.g., Church and Thambusamy, 2022; Johnson and Woodcock, 2019; Sjöblom et al., 2019; Zhao et al., 2021). Next is *celebrity-related LS*, involving content creation, co-creation, streamer–viewer interactions and gratification, and micro-celebrity and

Table 3

Sources publishing SC and LS studies using the affordance lens.

Source	D	C	CR	JIF*2022	Q	Category
Computers in Human Behavior	5	189	USA	9.9	Q1	Psychology, Experimental
International Journal of Information Management	4	210	UK	21	Q1	Information science
Electronic Commerce Research and Applications	3	352	USA	6	Q1	Computer science, Information systems
Information & Management	3	148	Netherlands	9.9	Q1	Information science
Electronic Markets	3	30	Germany	8.5	Q1	Business

Notes: Citations are identified using VOSviewer citation network analysis of sources; data on source profiles are extracted from JCR journal profiles; D = documents, C = citations, CR = Country region, JIF = WoS Journal Impact Factor, Q = percentile on WoS.

influencer streamers, as well as a strong focus on advertising and revenue opportunities (e.g., Zou, 2018; Ross and Logi, 2021; Meisner and Ledbetter, 2020; Wang, 2020; Jacobs and Booth, 2021). Finally, *travel-related LS* involves real-time streamer–viewer–sponsor interactions in creating and sharing travel experiences, product sales and destination promotion (e.g., Deng et al., 2021, 2022).

Table 5 also presents six identified platform types: livestream shopping platforms (e.g., Taobao, Sina Microblog, Jd.com, Mogujie.com), social media platforms, messaging apps (e.g., WeChat), specialist streaming platforms (e.g., Twitch), entertainment gaming platforms (e.g., live-singing, HuaJiao) and short-form video apps (e.g., Douyin shopping). The reviewed corpus shows diverse explorations of platforms, with a recent inclination towards incorporating multi-platform analyses (e.g., Dong et al., 2023; Yan et al., 2023; Zhang et al., 2023; Gao et al., 2023).

Finally, Table 5 presents a typology of affordances in LS consisting of five main types.

- (1) *Platform-based affordances* consist of social affordances such as commenting, liking, sharing and virtual gifting (Sjöblom et al., 2019; Sun et al., 2020; Ross and Logi, 2021) and technological/functional affordances such as materiality of technology, privacy features and algorithmic structures (e.g., Johnson and Woodcock, 2019; Song, 2021; Wang, 2020; Deng et al., 2022; Zou, 2018; Licoppe and Morel, 2018). Social and functional affordances are the most fundamental technological affordances, appearing in dualism (Deng et al., 2022) but with slight differences in contextual focus based on context. For example, in the context of performative labour, greater attention is paid to functional and technical affordances that enable streamers to claim a position such as microcelebrity status (Sjöblom et al., 2019; Johnson and Woodcock, 2019). Media literacy and access affordances (Church and Thambusamy, 2022) facilitate performance tracking and knowledge accumulation (e.g., viewership metrics, levels, types of donations) for learning and improvement, aiming to generate mass appeal and expand the audience base. Finally in this category is revenue affordances (Johnson and Woodcock, 2019), encompassing various monetization models such as subscribing, donating, cheering, advertising, sponsorships, competitions and targets, unpredictable rewards and channel games.
- (2) *Game-based affordances* consist of user reflection (e.g., data display, push messages and gamification, enabling viewers to self-assess and showcase skills and knowledge), community involvement (Church and Thambusamy, 2022) and relational

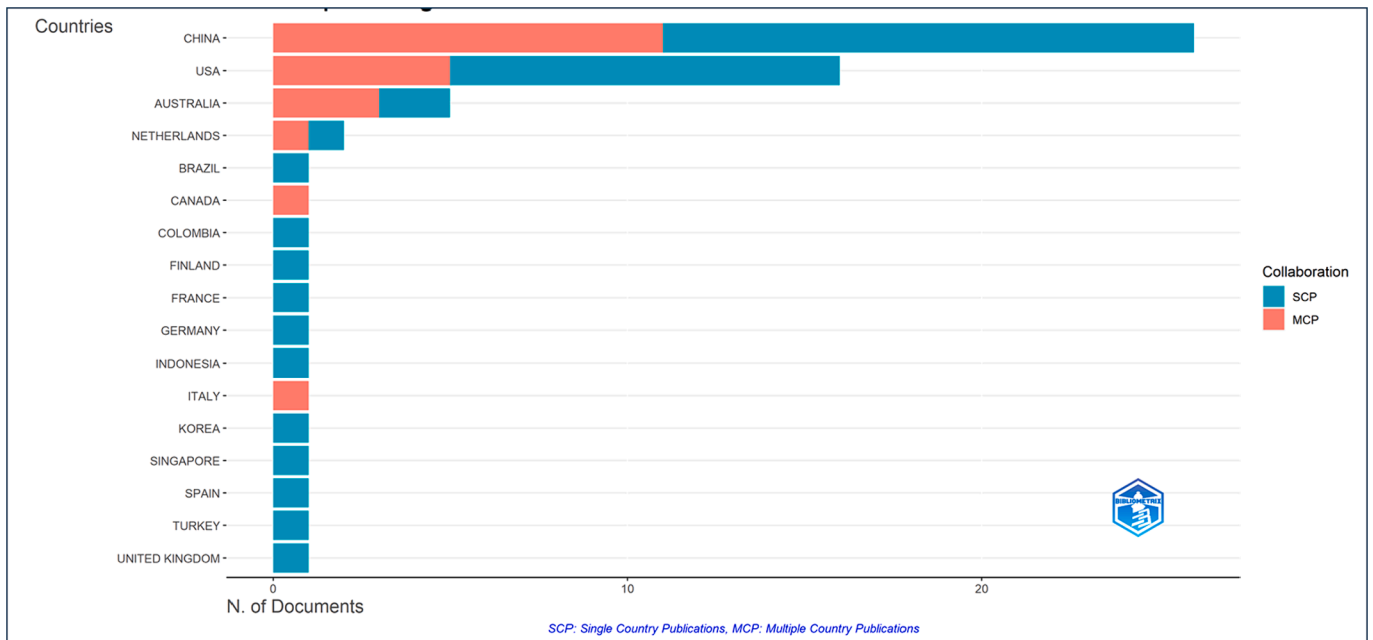


Fig. 6. Overview of authors' geographical collaboration based on corresponding authors.

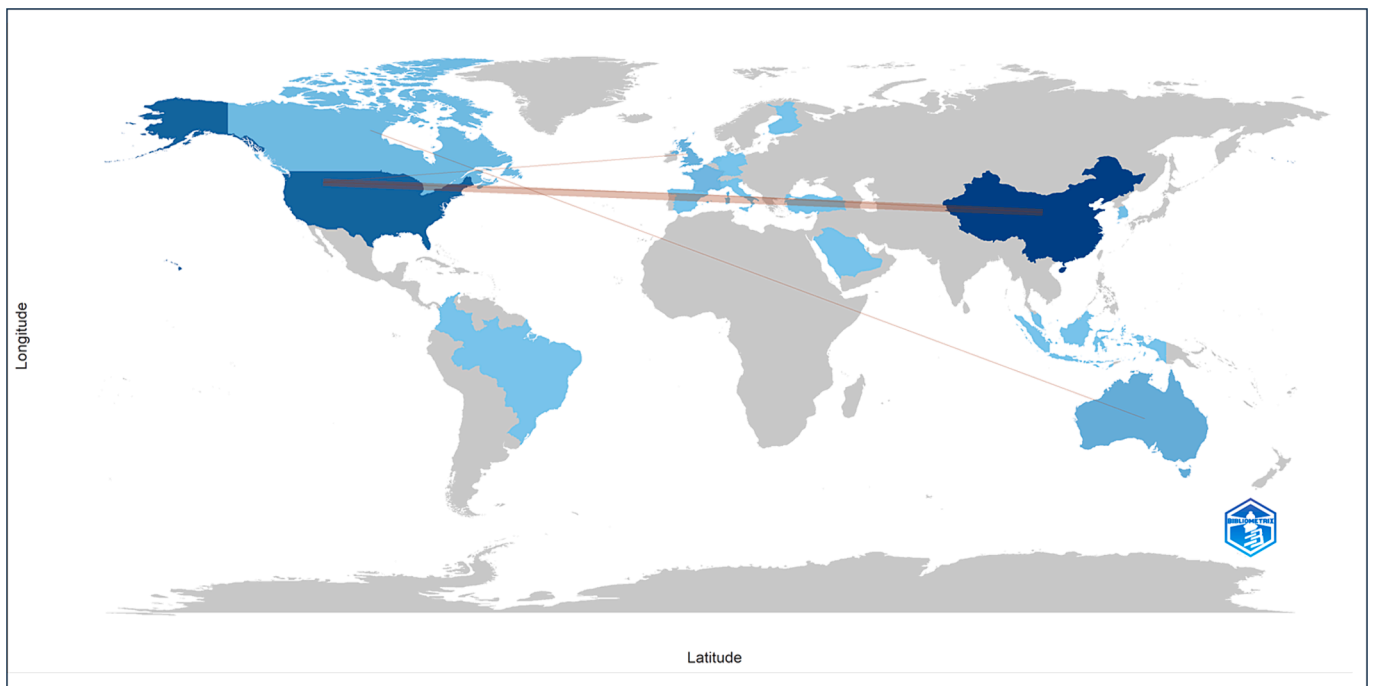


Fig. 7. World map of countries' collaboration in publications on LS and SC.

affordances such as direct interactions and a sense of belonging to a community (Gao et al., 2023). These, in turn, lead to revenue affordances, referring to monetization systems closely linked with social/relational affordances (Houssard et al., 2023).

- (3) *Social livestream* affordances include commodification (real-time engagement metrics, streamer rankings, income opportunities and incentive systems), connection (synchronous connections such as co-broadcasting via guest invitation live responses affording conversations on personal topics) and aspirations (livestream highlights recording and sharing features that allow personal branding by broadcasters) (Meisner and Ledbetter,

2020). Although commodification appears similar to functional affordances, it emphasizes livestreaming as a packaged commodity with fluctuating value in real time powered by metrics.

- (4) *Travel-specific livestreaming* (TLS) affordances include media (video, photo, text), spatial (creation of multiple physical and virtual spaces affording a hybrid TLS environment), interactivity (enabling communication and engagement via direct responses to comments/demands, real-time cooperation in experience creation, blended body language with performance), and temporal (real-time production and consumption of visual media, intensifying the experience as travel livestreamers cannot edit their

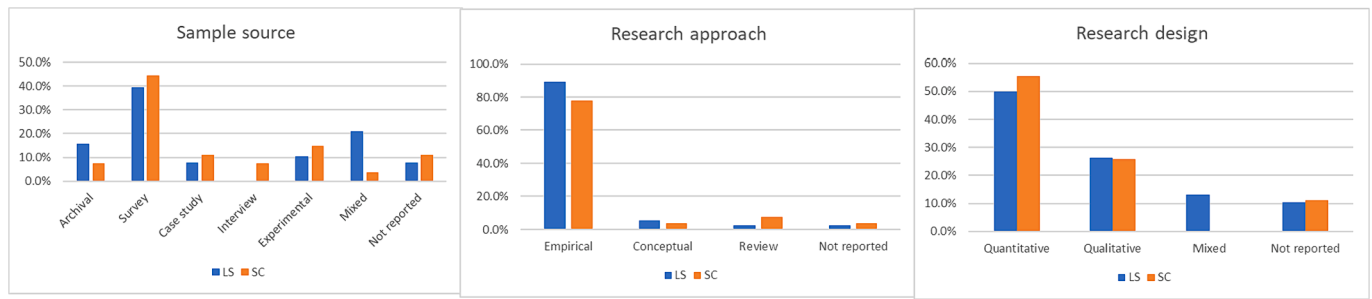


Fig. 8. Methodological choices in LS and SC research (data sample, research approach and design).

Table 4
Research methodology, design, and sample source in the most cited papers on LS and SC.

Field	Rank	Publication	TC	RA	RD	SS
LS	1	Sun et al., 2019	300	E	QT	S
	2	Zhang et al., 2022	73	E	QT	S
	3	Sjöblom et al., 2019	69	E	Q	A
	4	Johnson and Woodcock, 2019	58	E	Q	M
	5	Wang, 2020	47	E	Q	A
SC	1	Lin et al., 2019	105	E	QT	S
	2	Dong and Wang, 2018	101	E	QT	S
	3	Leonardi, 2017	75	E	Q	I
	4	Shao and Pan, 2019	61	E	QT	S
	5	Lin et al., 2020	45	E	QT	S

Notes: TC = Total citations, RA = Research approach (E = empirical, C = conceptual, R = review, ND = not reported), RD = Research design (Q = qualitative, QT = quantitative, M = mixed, ND = not reported), SS = Source of sample (A = archival, S = survey, CS = case study, I = interview, E = experimental, M = mixed, ND = not reported).

reactions) (Deng et al., 2021, 2022). In TLS, the media and interactivity affordances are similar to those of social (e.g., liking, commenting, sharing) and functional affordances (e.g., video, text, emoticons), whereas the temporal and spatial affordances are specific to TLS owing to its real-time viewability of travel experiences from anywhere (temporal) and its capability to create hybrid experiences where viewers can connect via chat rooms to engage in real-time transmissions (spatial) (Deng et al., 2021).

- (5) *Livestream shopping affordances* consist of social and technical groups, sometimes in combination. For instance, the affordance of interactivity exhibits both technical and social enablers (Zhang et al., 2022), integrating social features, such as active control, two-way communication and synchronicity, with technical characteristics of the platforms through guidance shopping, visibility and media richness affordances (Dong et al., 2023). It embeds parasocial interactions, allowing streamers to respond to other customers, and thereby fostering a climate of closeness and friendship (Sun et al., 2019; Wang et al., 2022a; Xu et al., 2022; Zhang et al., 2022). Purely social affordances include entertainment and gamification (Wang et al., 2023; Yin et al., 2024); telepresence affordances mimic communication with real salespeople and create a sense of presence in the shopping scene; and flow affordances allow consumers to devote themselves to the purchase process, reduce streamer–shopper differences and align their interests (Lu et al., 2023).

Three purely technical affordances (Dong and Wang, 2018) are visibility, guided shopping (including personalized advice, atmospheric cues, pop-up messages and customer decision-making support) and metavoicing (enabling relevant product information and feedback exchange). These have been applied to livestream shopping contexts in

Table 5
The LS field.

Contextual focus	Related studies	Affordance types	Platform types
Shopping-related	Sun et al., 2019, 2020; Su et al., 2020; Xu et al., 2020, 2022; Xue et al., 2020; Zhang et al., 2022, 2023; Dong et al., 2023; Li et al., 2023; Saffanah et al., 2023; Wang et al., 2023; Yan et al., 2023; Yin et al., 2024; Zhou and Lou, 2023; Shin et al., 2024; Lu et al., 2023; Ma et al., 2022	<p><i>Platform-based:</i></p> <ol style="list-style-type: none"> 1) Social 2) Technical/functional 3) Media literacy and access 4) Revenue <p><i>Game-based affordances:</i></p> <ol style="list-style-type: none"> 1) User-reflection 2) Community involvement/relational 3) Revenue 	<ol style="list-style-type: none"> 1) <i>Livestreaming shopping platforms</i>, specialist or hosted on online shopping sites (Taobao Global Shopping, Taobao Live, Sina Microblog, Jd.com, Mogujie.com) 2) <i>Social media platforms</i>, hosting highly interactive online communities and allowing sharing of rich content (TikTok, Twitter, Periscope, Instagram, Weibo) 3) <i>Messaging apps</i>, allowing for instant message exchange, social sharing and shopping (WeChat, Blue App) 4) <i>Specialist streaming platforms</i>, structured around chatrooms and live channels, each hosted by a unique streamer with interactive real-time content (Twitch, Inke, YouNow, Huajiao) 5) <i>Entertainment gaming platforms</i> (Live-singing, HuaJiao) 6) <i>Short-form video apps (SFV)</i> (Douyin shopping)
Travel-related	Deng et al., 2021, 2022	<p><i>Social live streaming affordances:</i></p> <ol style="list-style-type: none"> 1) Commodification 2) Connection 3) Aspiration 	
Celebrity-related	Zou, 2018; Ross and Logi, 2021; Meisner and Ledbetter, 2020; Wang, 2020; Jacobs and Booth, 2021; Song, 2021		
Gaming-related	Church and Thambusamy, 2022; Johnson and Woodcock, 2019; Sjöblom et al., 2019; Zhao et al., 2021; Gao et al., 2023; Houssard et al., 2023	<p><i>Travel live streaming affordances:</i></p> <ol style="list-style-type: none"> 1) Media 2) Spatial 3) Interactivity 4) Temporal <p><i>LS affordances:</i></p> <p><i>Social affordances:</i></p> <ol style="list-style-type: none"> 1) Real-time interactivity/ social interactivity 2) Entertainment 3) Telepresence 4) Flow <p><i>Technical affordances:</i></p> <ol style="list-style-type: none"> 1) Visibility 2) Guidance shopping 3) Meta-voicing 4) Trading 5) Media richness 6) Source diversity 7) Recommendation 8) Synchronicity 9) Network association 10) Searchability 	

various studies (Sun et al., 2019; Wang et al., 2022a; Xu et al., 2022; Zhang et al., 2022). Other technical affordances include trading (encompassing real-time product information to mitigate information asymmetry and facilitate transactional transparency; Sun et al., 2019), media richness (Dong et al., 2023), source diversity (simultaneously gaining product information from multiple sources, such as salespeople, other customers and videos in various visual and verbal formats; Wang et al., 2023), and recommendation (algorithmic capacity to deliver accurate and personalized content; Yin et al., 2024). Finally in this category are recent frameworks such as Li et al.'s (2023) extension of Sun et al.'s (2019) model, which includes platform promotion and support and streamer guidance, and Zhou and Lou's (2023) four-dimensional framework of synchronicity, agency, interactivity and navigability.

Having presented a comprehensive thematic analysis of context, platforms and affordances in LS, next we present similar thematic analysis for SC (see Table 6).

Table 6 presents thematic analysis of studies in the SC field, comprising four contextual themes: (1) SC platforms, with studies on online commerce traits and processes encompassing recommendation sharing, comments, community engagement, social support, interactivity and feedback mechanisms across web, desktop and mobile apps; (2) multichannel commerce, investigating the integration of SC into multichannel strategies (Wu et al., 2021); (3) consumer-initiated SC, examining the dynamics of social media influencers' collaboration with companies (Wu et al., 2022); and (4) tourism SC, which studies the dynamics of online booking of tourism products on web and mobile apps, along with sharing of travel experiences (Taylor et al., 2022; Califf et al., 2020).

Table 6 also presents six identified platform types: sharing economy and traditional booking sites and apps such as Airbnb and Expedia (Taylor et al., 2022; Califf et al., 2020); social media platforms, including Facebook, Instagram, Twitter and LinkedIn (Camacho and Barrios, 2021; Fang et al., 2021; Chae et al., 2020; Tuncer, 2021); messaging apps such as WeChat and WeChat Moments (Dong and Wang, 2018; Lin et al., 2019, 2020; Martínez-López et al., 2020; Shao and Pan, 2019); livestream shopping platforms like Taobao Village (Wu et al.,

2020); e-commerce platforms such as Little Red Book (Chen et al., 2021a); and payment apps and digital wallets enabling social sharing and ratings, such as Alipay and Venmo (Huang and Zhou, 2021; Acker and Murthy, 2020).

Finally, Table 6 presents a typology of affordances in SC, consisting of five main types. First, SC platform-based affordances are based primarily on Dong and Wang's (2018) five categories of visibility, meta-voicing, triggered attending, social connecting and trading. They have been used to study impulse buying (Chen et al., 2021a), knowledge acquisition and sharing within guanxi circles embedded in social media such as WeChat (Lin et al., 2019) and impact on trust and flow experiences (Tuncer, 2021). Additional affordances in this category include Tang and Zhang's (2020) perceived utilitarian, hedonic and connective affordances, adapted to examine high performance in tourism-specific SC platforms (Taylor et al., 2022) and user engagement and social group identity (Chen et al., 2021b). Other studies use a mixture of different types of affordances, including social design affordances (Grange et al., 2019) and a combination of visibility and interactivity affordances with selectivity and persistence (Fang et al., 2021). The last subcategory draws on Hartson's (2003) physical, sensory, cognitive and functional affordances in social platform integration (Martínez-López et al., 2019). A mix of various social media and SC affordances, combined with entrepreneurial-oriented actions and Facebook features, result in eleven SC affordances: monitoring, profiling, visibility, connection, content association, persistence, generative role-taking, community engagement, customized engagement, supervising, and experimenting (Camacho and Barrios, 2021).

Second, in the social media-based affordance category, Leonardi (2017) employs visibility, editability, persistence and association affordances to understand employees' and managers' knowledge contribution and retrieval. Similarly, Martin et al. (2020) examine use of social media modes to achieve business objectives by examining organization affordances. They suggest that companies of varying sizes and resources may seek to deliver more narrowly focused, small-scale social media systems that support product, customer and information exchange outcomes. Wu et al.'s (2020) study of eight ICT affordances acknowledges differences in the birth, expansion and self-renewal stages of rural e-commerce in China. Wu et al. (2022) also draw on the social media affordances of association, visibility, exploration and coordination to understand how social media influencers integrate resources to engage in and enable service innovation in consumer-initiated SC. From an organizational viewpoint, Chae et al. (2020) examine how the supply chain affordances of association, communication, big data intelligence and collaboration, relating to using different social media platforms, impact on better forecasting and planning.

The last three categories are service-based gamification, with the affordances of interactivity, cooperation, and competition (Huang and Zhou, 2021), multichannel shopping-based, with the affordances of persistence, selectivity (customization) and interactivity (active control, two-way communication, and synchronicity; Wu et al., 2021), and mobile, e-commerce and IoT commerce-based, examining the affordances of interactivity and media richness in mobile social platforms such as WeChat Moments (Shao and Pan, 2019). The latter also explores the affordances of personalized services, temporal independence, electronic transactions, information transparency, location-based services, online platforms, pro-active services, social interactions and spatial independence in e-commerce and m-commerce. Furthermore, context-aware services, natural interactions and automated customer processes are unique to IoT commerce.

4.3. Focal points in consumer-brand interactions in the field

In the final phase of our thematic analysis for RQ2, we meticulously coded the publications to pinpoint the primary focus of studies in the LS and SC literature that have used the affordance lens. This involved identifying the central themes and specific problems that these studies

Table 6
The social commerce field.

Contextual focus	Related studies	Affordance types	Platform types
SC platforms	Fang et al., 2021; Acker and Murthy, 2020; Chen et al., 2021a, 2021b; Miao et al., 2022; Grange et al., 2019; Camacho and Barrios, 2021; Tang and Zhang, 2020; Tuncer, 2021; Dong and Wang, 2018; Martin et al., 2020; Lin et al., 2019, 2020; Martínez-López et al., 2020; Shao and Pan, 2019; Wu et al., 2020	SC platform-based: 1) SC affordances 2) Perceived 3) Social design 4) Extended SC Social media-based: 1) Visibility 2) Editability 3) Persistence 4) Association 5) Organization 6) ICT 7) Supply chain	Sharing economy and traditional booking sites and apps Social media platforms Messaging apps Livestream shopping platforms E-commerce platforms Payment apps and digital wallets
Multichannel commerce	Wu et al., 2021	Service-based gamification: 1) Interactivity 2) Cooperation 3) Competition	
Consumer-initiated SC	Wu et al., 2022	Multichannel shopping-based: 1) Persistence 2) Selectivity 3) Interactivity	
Tourism SC	Taylor et al., 2022; Califf et al., 2020	Mobile, e-commerce, and IoT commerce-based	

aimed to investigate. We then categorized the publications into themes based on their shared characteristics (Small, 1973; Culnan et al., 1990).

In LS affordances research, we identify six themes. The first is *decision-making and purchase intentions*, such as impulse buying behaviour (Wang et al., 2022a), consumer purchasing efficiency (Su et al., 2020), strengthening of purchase intentions by allowing immersion and presence (Sun et al., 2019), and improving transparency of products, sellers and transactions through frequency of watching (Xu et al., 2022). The second theme is *engagement and viewing experiences*: LS affordances such as visibility, metavoicing and guidance shopping may influence consumers' purchase intentions (Sun et al., 2019), change product viewing experiences (Jacobs and Booth, 2021), allow audiences to co-construct products (Meisner and Ledbetter, 2020) and impact on customers' experiences (Wang et al., 2022a). The third theme, *consumer trust*, is linked with interactivity, visibility and personalization affordances (Zhang et al., 2022). Fourth, in *monetization models*, technical affordances and platform governance shape cultural content production and consumption (Johnson and Woodcock, 2019). The fifth theme is *gaming behaviours*, relating to how platform- and game-based affordances contribute to the content creation process (Church and Thambusamy, 2022). Finally, the sixth theme, *community building and sharing*, centres specifically on the role of travel livestreaming affordances in shaping parasocial interactions and relationships (Deng et al., 2022).

Similarly, in SC affordances research, we identify six themes. First, *satisfaction and loyalty* examines how utilitarian and hedonic marketing affordances affect users' experiences (Taylor et al., 2022) and how multichannel customer-perceived affordances influence shopping values and users' satisfaction (Wu et al., 2021). The second theme, *purchase and engagement behaviours*, examines the affordances of interactivity, stickiness and word-of-mouth to determine social ties and purchase behaviour (Lin et al., 2019), as well as different combinations of IT affordances to enhance social identification and facilitate impulse buying behaviour (Chen et al., 2021a) and influence trust in the seller and the platform, which is essential in shopping (Tuncer, 2021). Utilitarian and connective affordances may enhance information interchange and interpersonal communications, while hedonic affordances, such as gamification-designed systems, may affect only users' perceptions of the quality of their interactions with the platform (Chen et al., 2021b). Interactivity, recommendations and feedback affordances increase consumer perceptions of utilitarian and emotional benefits (Lin et al., 2020) and create the right conditions for serendipity in online shopping (Grange et al., 2019).

The third theme, *social selling and interactions*, explores interactivity and media richness affordances in promoting users' social ties and active participation (Shao and Pan, 2019), and social media affordances as resource capabilities to enable individual consumers to engage in service innovation (Wu et al., 2022) and as enhancers of organizational knowledge sharing (Leonardi, 2017). Fourth, the *social transactions* theme examines visibility, selectivity, persistence and interactivity affordances in developing consumer values that impact on brand loyalty and endorsement (Fang et al., 2021), and technical and social affordances that impact on users' shopping attitudes on social platforms (Martínez-López et al., 2020) and active users (Acker and Murthy, 2020).

The fifth theme, *customer buying process in IoT e-commerce*, examines how context-aware services, natural interactions, automated customer processes and other social media affordances affect each step in the buying process (Bayer et al., 2021). The sixth and final theme, *services and business impact*, explores different roles of affordances in different aspects of the business. Social media technological affordances facilitate the influencer, communicator and innovator roles, which influences business innovation outcomes (Wu et al., 2022), increases associations between people's information and content, enhances communication channels and data collection and optimization and increases planning collaboration and coordination (Chae et al., 2020; Martin et al., 2020). ICT affordances impact on knowledge integration, visibility, experimentation, networking and openness of the actors involved in setting up

e-commerce (Wu et al., 2020), and aid buyers and sellers in building social ties that impact on repurchasing intentions (Dong and Wang, 2018).

5. Science mapping

To address RQ3, we conducted science mapping utilizing co-citation analysis (Culnan, 1987; Nerur et al., 2008) and bibliographic coupling (Zupik and Cater, 2014). Using a full counting method in VOSviewer version 1.6.20, with a minimum threshold of eight citations for a citing publication, a normalization method for association strength and a cluster rotation set to 10 iterations, we constructed a 22-node network of highly cited documents, as illustrated in Fig. 9.

Older references in the network (Podsakoff et al., 2003; Fornell and Larcker, 1981) provide methodological foundations and key constructs analyzed through the lens of affordances (Gibson, 1979) and IT features (Markus and Silver, 2008). Studies published around 2013 focus on relational affordances, user behaviour and purchase intentions (Leonardi, 2011; Volkoff and Strong, 2013; Majchrzak et al., 2013; Treem and Leonardi, 2013; Zhang et al., 2014; Karahanna et al., 2018; Chen et al., 2017), audience engagement, often combining the affordance lens with other theoretical lenses like gratification theory (Hilvert-Bruce et al., 2018), social identity theory (Hu et al., 2017) and flow theory (Chen and Lin, 2018). After 2018, articles that conceptualize affordances in SC (Dong and Wang, 2018) and in LS (Sun et al., 2019) become relevant references in the field.

For bibliographic coupling, we established a minimum three-citation threshold for document selection, applied a normalization method for association strength and conducted cluster rotation with ten iterations, identifying 45 publications, as shown in Fig. 10.

The most linked publications address two issues: (1) the influence of IT affordances on SC users' responses in terms of sharing, purchasing and engagement (Dong and Wang, 2018; Tuncer, 2021); and (2) the integration of livestreaming into SC and its influence on consumer retention, engagement and purchasing behaviours (Sun et al., 2019; Zhang et al., 2022; Yan et al., 2023).

The network visualization reveals four interconnected themes, indicating that LS and SC form cohesive and interlinked research domains when viewed through the affordance lens. Each thematic cluster points toward a research frontier, as elaborated below.

Frontier 1: The livestream commerce perspective

The blue cluster in Fig. 10, led by Sun et al.'s (2019) groundbreaking model examining LS affordances in SC customers' purchase intentions, is a pivotal area of LS research strategically positioned at the network's centre. This frontier explores the correlation between livestream features and e-commerce opportunities, with a primary focus on usage intentions and consumer behaviours relating to purchase intentions and engagement (Zhang et al., 2022; Su et al., 2020). It also investigates the varying impacts on customers' quick decisions (Wang et al., 2022a) and the effects of customers' help-seeking propensity on different information processing paths (Wang et al., 2023). More recently, attention has turned to consumer engagement in LS within an experiential co-creation mode in the hospitality sector (Hua et al., 2023).

Frontier 2: The social commerce perspective.

The red cluster in Fig. 10, led by Tuncer's (2021) model of IT affordances, flow and trust, primarily explores consumer buying approaches in SC. Studies within this frontier examine the impact of different types of affordances on the buying process (Bayer et al., 2021) or on behavioural variables such as engagement (Chen et al., 2021b), approach and avoidance behavioural intentions (Tang and Zhang, 2020), and continuous usage intentions based on product characteristics (Lin et al., 2020) and humanlike versus system-like trusting beliefs (Califf et al., 2020). Studies also focus on the seller's perspective, including the role of social network affordances both in the rise of female entrepreneurs (Camacho and Barrios, 2021) and in mis-uses of salespeople in CRM maintenance (Bata et al., 2018). Finally, this frontier

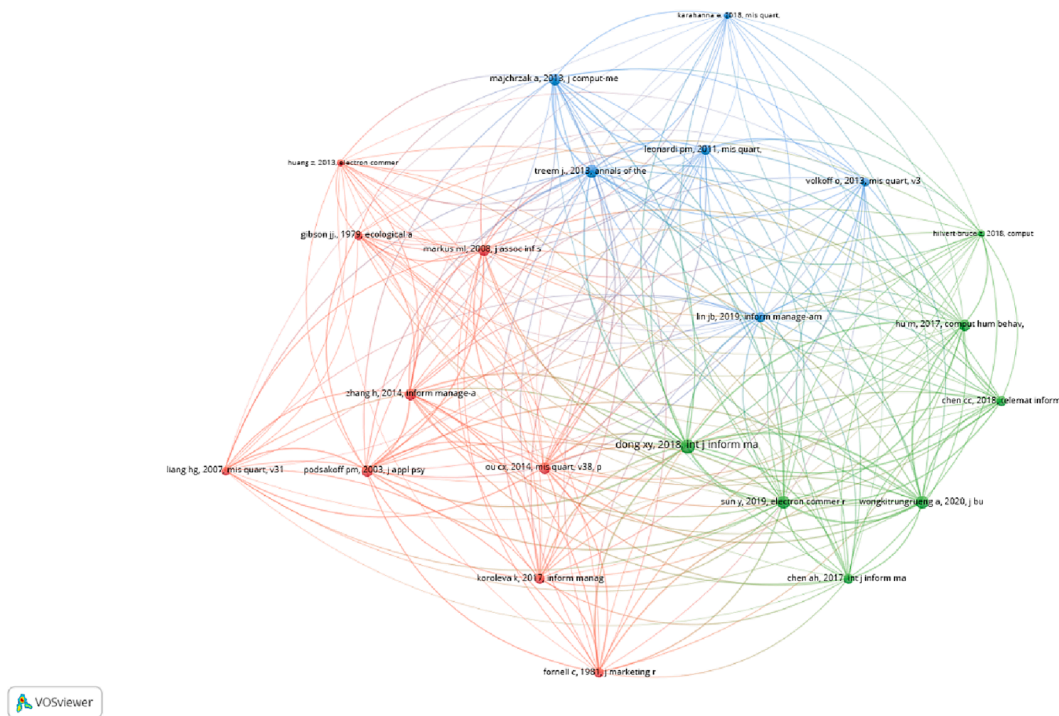


Fig. 9. Co-citation network in LS and SC research using the affordance lens.

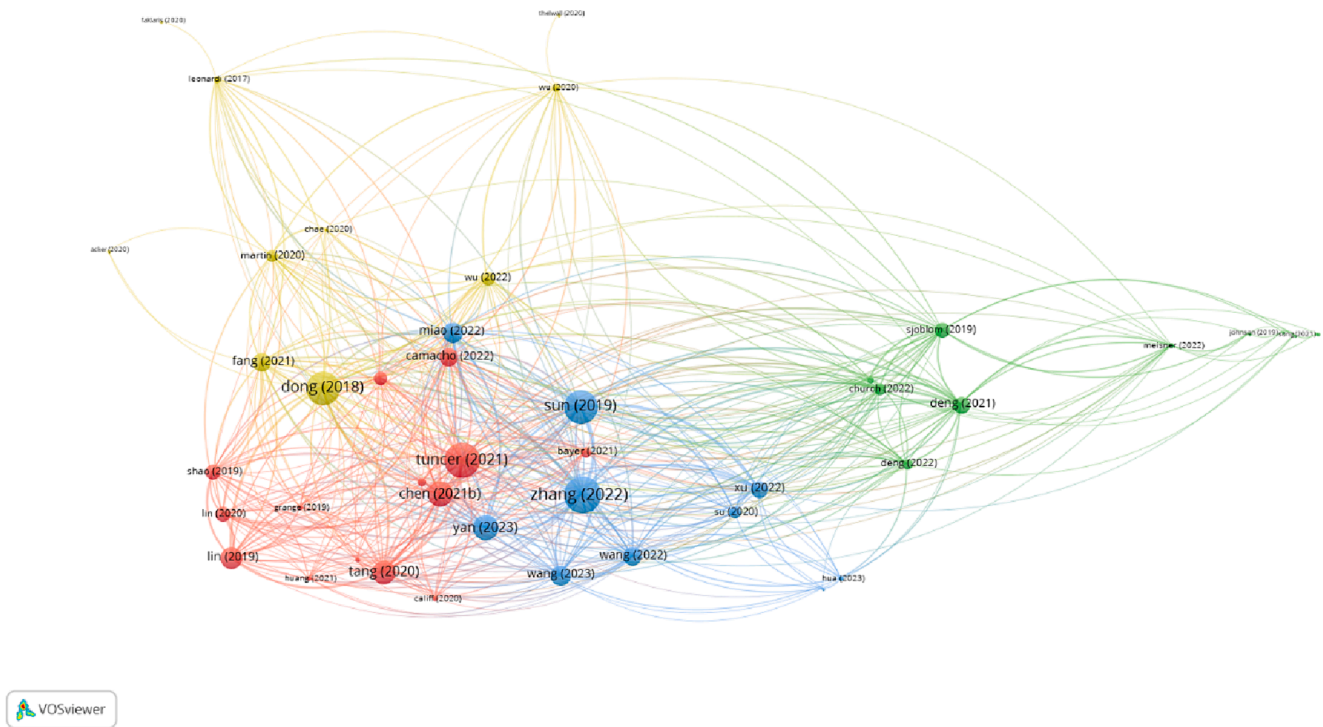


Fig. 10. Network visualization of bibliographic coupling.

focuses on the link between affordances and social capital in relation to participatory and repurchasing behaviours (Shao and Pan, 2019), interpersonal relationships (Lin et al., 2019), impulse buying (Chen et al., 2021a) and creating serendipitous conditions in SC (Grange et al., 2019).

Frontier 3: The organizational perspective.

The yellow cluster in Fig. 10, led by Dong and Wang’s (2018)

integration of SC affordances with SC ties, focuses primarily on investigating affordances from an organizational perspective. For example, studies examine social media affordances and supply chains in B2B environments (Chae et al., 2020), multi-organizational collaborations for business development (Martin et al., 2020), knowledge sharing on organizational strategy (Leonardi, 2017), and service innovation (Wu et al., 2021). In addition, Fang et al. (2021) explore how brand pages’

affordances support SC and endorsement based on relationship quality.

Frontier 4: The content creation and monetization perspective.

Unlike the other closely linked frontiers, the green cluster in Fig. 10 is a distinct frontier, somewhat distant from the others. It focuses primarily on specific contexts, such as travel platforms (Deng et al., 2021, 2022), videogame affordances supporting streamers' content creation (Church and Thambusamy, 2022) and streamers' popularity based on profile-building affordances (Zhao et al., 2021). Monetization, emerging as a new online business model, is a key focus, exploring content creation and monetization patterns in areas like dating apps (Wang, 2020; Song et al., 2021) and gaming (Johnson and Woodcock, 2019; Zou, 2018; Sjöblom et al., 2019). Another focus within this frontier utilizes affordance theory to comprehend the relational environment shaped by social livestreaming affordances (Meisner and Ledbetter, 2020; Licoppe and Morel, 2018).

To expand comprehension of the thematic evolution of the field, we also conducted keyword co-occurrence analysis (Cobo et al., 2011). We divided the research period (2017–2024) into four sub-periods (2017–2020, 2021, 2022 and 2023–2024). We then developed four strategic diagrams based on index keywords to illustrate the thematic evolution. Using the Walktrap clustering algorithm and a minimum weight index of 0.1, these strategic diagrams classify themes into four quadrants based on Cahlik's (2000) classification: (1) motor themes (highly important with significant potential), (2) niche themes (highly specialized but peripheral), (3) emerging or declining themes (undeveloped and on the periphery), and (4) basic themes (important but undeveloped, transversal and general) (see Fig 11).

This analysis reveals that early research on LS and SC employing an affordance lens focused on understanding various behaviours, such as user acceptance, intentions, experience, purchases and the capabilities of resources and technology in the context of social media affordances and information systems. Other themes explored organizational impact, including ambient awareness, knowledge management and performance. A more specific theme emerged around the role of social media and technologies in motivation, relating to prosumption, consumption, playfulness, labouring and monetization. Towards the end of this initial period, the emphasis shifted toward behavioural research around trust, motivation, satisfaction and repurchase intentions.

Consumer behaviours, including engagement, motivations and community involvement, persisted as a significant theme throughout the thematic evolution and evolved into basic themes in the 2021 and 2022 sub-periods. In the 2023–2024 sub-period, well-developed motor themes with potential emerged as subtopics within the impact of SC (consumer trust, perceived risks, flow and enjoyment, engagement, repetition), and consumer behaviour (social ties, engagement, experiences, decision making, and technological tool usage such as augmented reality). However, the continual transfer between theme clusters suggests that research in LS and SC utilizing the affordance lens is still in its initial phase and is far from mature, as indicated by the quadrants of motor and basic themes over time. Even in the more extensively discussed dimensions (motor themes), the subtopics remain underexplored in terms of both depth and breadth.



Fig. 11. Strategic diagrams of theme evolution (2017–2024): (a) 2017–2020 (25 documents); (b) 2021 (13 documents); (c) 2022 (10 documents); (d) 2023–2024 (14 documents).

6. Future research avenues

Our results reveal a cohesive network of studies in affordance-based SC and LS research, supported by extensive citation coverage. We highlight interconnectedness between the fields and identify key papers, scholars and themes to guide future research endeavours. For example, Sun et al.'s (2019) work is recognized as a seminal contribution to LS, while Dong et al.'s (2023) recent publication builds on their 2018 seminal work, offering a social-technical perspective on livestreaming and insights into user behaviours. Building on these findings, and addressing the research gap in systematic reviews of affordance-based research that integrates LS and SC domains, we propose a model that elucidates the relevance of platform-specific affordances in a context in which SC and LS are seamlessly integrated into a unified experience (Fig. 12). Our findings relating to thematic evolution highlight the persistence of aspects of consumer behaviour as basic themes in SC and LS research. The model aims to enhance our understanding of consumer behaviours in both LS and SC fields, adopting a multifaceted approach to the consumer journey that considers four layers: actors, context, platform dynamics and affordance diversity.

While research in both fields focuses on decision-making, purchase and engagement behaviours (Su et al., 2020; Lin et al., 2019), more holistic integration of other dynamics of consumers' journey processes seems to be neglected. The actors layer emphasizes actors and contextual interactions. Brands and streamers, guided by the design of products, services and experiences, will concentrate on understanding the dynamic interplay between consumer characteristics, such as demographics, gender, age, values and attitudes aligned with the product or service, to navigate emerging shopping patterns and evolving paths to purchase.

Technological progress, encompassing AI agents, chatbots, virtual influencers, voice search and interactive livestreams utilizing virtual or augmented reality, will shape the design and emergence of novel forms and dynamics in path-to-purchase models. This, in turn, may impact on how brands and consumers engage in co-creation throughout the consumer journey process. Moreover, geographical and cultural factors may play pivotal roles in comparing different platforms and moments of purchase across diverse customer segments.

The rise of interactive consumer journeys in SC highlights the significance of LS affordances in SC users' experiences. Future research

might address questions such as what challenges and opportunities arise from integrating livestreaming affordances into various SC platforms, how technological innovations influence consumer-brand interactions throughout the entire purchase journey, and how an integrated understanding of brand/streamers and users might inform the development of path-to-purchase models in livestreaming in SC.

In the platform layer, challenges arise from three key aspects: 1) platform diversity, involving the distinction between specialist live commerce apps and social media platforms with livestreaming features; 2) the variety of devices used by consumers, including mobile, web and IoT-connected devices; and 3) the type of LS. The interplay of these elements in the actors layer, which includes consumer types and characteristics based on product attributes, is intricately connected with the context layer. As affordances are context-specific, studies that capture dynamic relationships among the actors, context and platform layers might contribute to a more nuanced understanding of affordance types and their roles. This approach will allow exploration of novel affordances in SC and LS resulting from integration of these layers, addressing the challenge of designing customer experience management models in livestreaming in SC.

Most studies in LS typically adhere to Sun et al.'s (2019) affordances model and draw on Dong and Wang's (2018) model of SC affordances. In the affordance layer, we propose classifying affordances into four groups: (1) social, commonly found in studies across both LS and SC domains; (2) context-based, integrating usage context (shopping, gaming, travel, etc); (3) platform-based, integrating specific elements relating to platforms such as livestreaming apps and social media; and (4) extended, accommodating novel forms of affordances derived from the emergence of new technologies that cannot be categorized under the previous groups.

Given that affordances are context-specific, the model emphasizes their shaping by geographical and cultural diversity, technological advancements and platform variations. Dynamic interplay between these layers prompts research questions such as how path-to-purchase models can adapt to evolving affordances on livestreaming platforms, what impacts interactions between persuasive streamers, sellers' styles and platform affordances have on consumer attitudes across diverse demographics and cultural backgrounds, and how affordances can be tailored for diverse audiences, considering cultural nuances and the global competitive landscape of livestreaming.

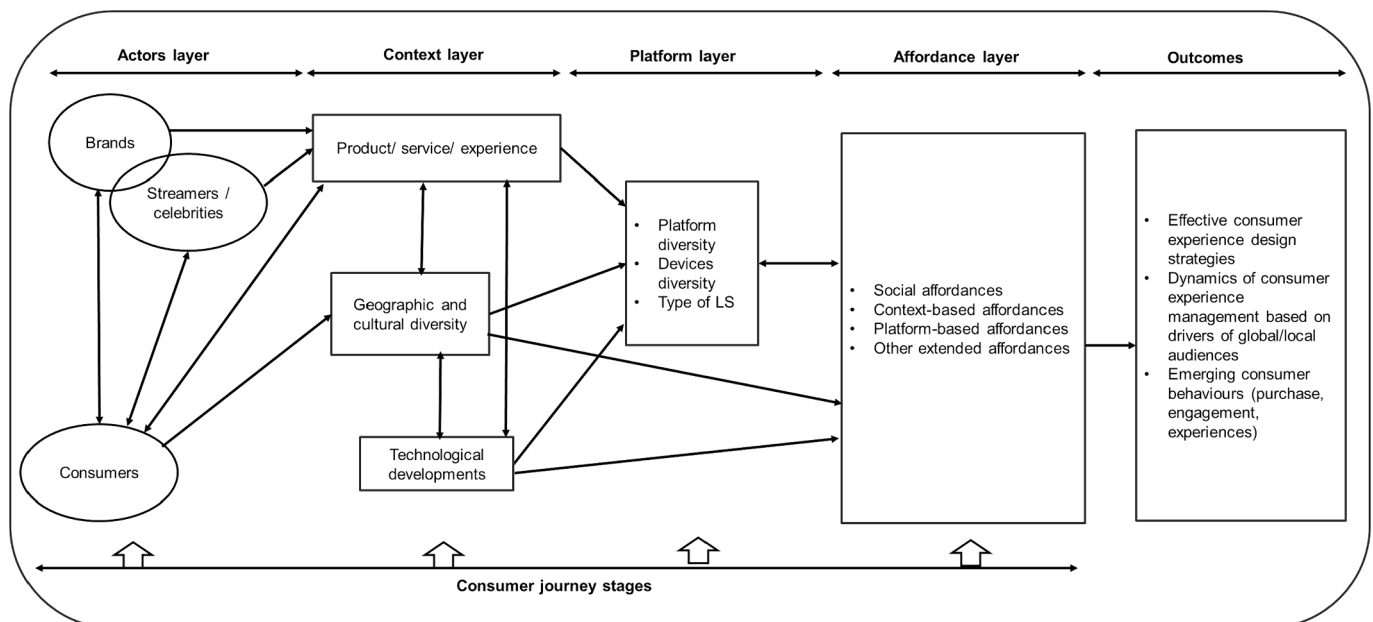


Fig. 12. An integrated model for future research on affordance-based SC and LC.

Extant research emphasizes the impact of perceived affordances on customer satisfaction and loyalty (Wu et al., 2021). However, a single-platform focus may limit understanding of the role of newly-emerging affordances across various consumer journey stages and affordance dynamics in emerging global live-shopping platforms. Recent studies (Dong et al., 2023; Yan et al., 2023; Zhang et al., 2023) attempt to address this gap by exploring multi-platforms, such as Taobao, WeChat and TikTok, but platform diversity in LS research tends to be limited to a single geographical and cultural context, primarily centred on China, concentrating on facilitators and outcomes in that region. Expanding the scope to investigate how consumers from diverse backgrounds perceive LS on global shopping platforms might offer insights into customer experience dynamics. This will involve understanding how persuasive content and sellers' styles interact with platform affordances, influencing attitudes and behaviours in a global audience setting. Another strong recommendation is to explore unique design features (Licoppe and Morel, 2018) by investigating various combinations of newly-emerging technologies across multiple platforms.

Future research might explore outcomes arising from the layers of dynamic relationships, particularly from the viewpoints of brands and sellers. This will inform the effective design of consumer experience management, considering the diversity of global and local audiences intertwined with technology trends. The consumer perspective must also be examined, focusing on identifying outcomes in terms of emerging behaviours resulting from these dynamic layers. This will encompass aspects of engagement, experiential elements and challenges associated with the purchasing process.

Our model addresses methodological challenges in expanding current path-to-purchase models, recognizing the need to tackle sampling concerns. This will involve considering various actors, livestreaming types (celebrities, shopping, gaming, travel, organizational, etc.) and platform groups (social media, message apps, LS, livestreaming apps, etc.) in specific cultural and technological contexts. Geographical diversity may influence platform affordances, an aspect currently under-explored. Beyond traditional surveys and controlled experiments, capturing live, real-time experiences across multiple platforms might reshape our understanding of affordances, distinguishing between local and global platforms. Furthermore, existing studies rely predominantly on quantitative approaches to examine consumer behaviours and perceptions of affordances, whereas qualitative methodologies, and particularly in-depth visual methods like screencast videography (Kawaf, 2019) that span platform and geographical diversity, might facilitate in-depth analysis of users' experiences, considering dynamic layers.

7. Conclusion

Within a brief timeframe, a considerable knowledge base has been built, advancing the theoretical underpinnings of IT affordances in LS and SC research (Sun et al., 2019; Lin et al., 2019; Dong and Wang, 2018). Previous literature reviews have separately addressed some challenges in each field, such as customer experiences in SC (Dhaigude and Mohan, 2022), state-of-the-art SC (Zhao et al., 2023) and user behaviours in LS (Luo et al., 2022). However, these have not drawn on the affordance lens, so no comprehensive review centred on affordances theory in LS and SC has previously been undertaken. Amid rising interest in and the challenge of leveraging new technologies, brand touchpoints and more efficient path-to-purchase models, this review contributes a comprehensive understanding of state-of-the-art research in affordance-based SC and LS. We also propose an integrated research model derived from these two interconnected domains.

7.1. Practical contributions

Our examination of affordance theory in LS and SC, with an integrated categorization of significant platform affordances, grants a

comprehensive understanding of these affordance variances across distinct domains such as shopping, travel, gaming and IoT commerce. This understanding will be invaluable for marketing professionals, helping them to reflect on the challenges involved in comprehending and customizing strategies to effectively leverage and optimize platform-specific affordances. Particularly noteworthy is the burgeoning presence of global shopping platforms, intensifying the complexity and significance of platform design and optimization. This shift underscores the critical need for businesses to focus strategically on maximizing customer engagement and enhancing the overall customer experience. Furthermore, our integrated model for future research on affordance-based SC and LC will serve as a practical guide for marketing practitioners. This model offers valuable insights for planning and enhancing comprehension of consumer behaviours, especially in the context of interactive and evolving technologies, through the affordance lens.

7.2. Theoretical contributions and study limitations

A significant contribution of this review is to offer a systematization of affordance typologies tied to distinct contexts in the LS and SC fields and a nuanced classification of various platforms, highlighting key research themes and their interconnected patterns across the review corpus. We unpack four contextual themes in LS research: *shopping* (Su et al., 2020; Xu et al., 2020, 2022; Wang, 2020; Sun et al., 2019; Zhang et al., 2022), *travel* (Deng et al., 2021, 2022), *celebrities* (Zou, 2018; Ross and Logi, 2021; Meisner and Ledbetter, 2020; Wang, 2020; Jacobs and Booth, 2021) and *gaming* (Church and Thambusamy, 2022; Johnson and Woodcock, 2019; Sjöblom et al., 2019; Zhao et al., 2021). Similarly, we identify four contextual themes in SC: *platforms* (Fang et al., 2021; Acker and Murthy, 2020; Chen et al., 2021a, 2021b; Miao et al., 2022; Lin et al., 2020; Martínez-López et al., 2020), *multichannel and IoT commerce* (Bayer et al., 2021), *consumer-initiated* (Wu et al., 2021) and *tourism* (Califf et al., 2020).

Our review distinguishes between different types of platforms in LS and SC, presents a typology of all the affordances examined in the two bodies of literature and highlights notable models of affordances, such as platform affordances in LS (Deng et al., 2022) and SC (Dong and Wang, 2018) and a perceived affordances framework (Tang and Zhang, 2020). The science mapping analysis distinguishes prominent founding work cited and relied on in the field. It also identifies four research frontiers that consolidate and elucidate prevalent affordances in SC and LS literature: (1) LS affordances, features and outcomes (Sun et al., 2019; Zhang et al., 2022); (2) SC affordances and the buying process (Tuncer, 2021; Tang and Zhang, 2020); (3) SC and social media affordances in the context of social relationships and organizational strategies (Dong and Wang, 2018; Fang et al., 2021); and (4) livestream affordances, content creation and monetization (Deng et al., 2021; Church and Thambusamy, 2022).

Our paper contributes to future research by proposing an integrated model for leveraging the affordance lens to understand consumer behaviour in LS and SC domains. The model suggests integrating four key layers (actors, context, platform and affordances) to effectively scrutinize consumer behaviour outcomes, emphasizing the need to expand cultural diversity and platform variety in research. This expansion is crucial for discerning technological mediation in consumer-brand interactions, especially in specialist LS platforms. Furthermore, we advocate exploring qualitative and innovative methodologies to unveil real-time consumer experiences, moving beyond conventional self-administered questionnaires or reliance on digital footprints.

Despite insightful findings, we acknowledge a few limitations. In this review, we collected data from WoS and Scopus and focused on the 62 most cited articles clustered by network analysis, using VOSviewer and R Studio. These parameters may have affected our results. Future reviews might consider including more diverse database sources, such as Dimensions which gives more diverse types of data (videos, case studies), or Altmetric which integrates the relevance of publications

based on who is talking about it online. These might bring different insights by integrating professional and academic practices on this topic, taking account of the social impacts of the research.

CRedit authorship contribution statement

Fatema Kawaf: Conceptualization, Data curation, Validation, Writing – review & editing. **Michele Girotto:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Visualization, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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