DECONSTRUCTING E-COMMERCE PRESENCES - A SYSTEMATIC REVIEW AND RESEARCH AGENDA

Kevin Schwehm
University of Würzburg, kevin.schwehm@uni-wuerzburg.de

Jana-Kristin Prigge
University of Würzburg, jana-kristin.prigge@uni-wuerzburg.de

Steven Schwehm
University of Würzburg, steven.schwehm@uni-wuerzburg.de

DECONSTRUCTING E-COMMERCE PRESENCES – A SYSTEMATIC REVIEW AND RESEARCH AGENDA

Research Paper

Kevin Schwehm, University of Würzburg, Germany, kevin.schwehm@uni-wuerzburg.de

Jana-Kristin Prigge, University of Würzburg, Germany, jana-kristin.prigge@uni-wuerzburg.de

Steven Schwehm, University of Würzburg, Germany, steven.schwehm@uni-wuerzburg.de

Abstract

This literature review systematically analyses recent studies on the effective design of e-commerce presences in order to provide a state-of-the-art overview on this important topic. To do so, our review focuses on the level of webshop elements (i.e., the building blocks to design webshops), which we cluster in eight categories (e.g., color usage, music usage, rich media usage), derived from previous website quality frameworks (e.g., SITEQUAL, WebQual) and prior reviews. The basis of our comprehensive literature review are 91 articles grouped into the webshop element categories and additionally analyzed along three key study criteria, namely the applied research methods, theories, and key dependent variables. Based on the findings from this bibliographic analysis, we formulate an agenda for future research avenues to guide researchers in further exploring the field of e-commerce presences and to support practitioners in their decision-making on the implementation of webshop elements.

Keywords: E-Commerce, systematic review, webshop performance, webshop design

1 Introduction and positioning

Webshops are omnipresent and e-commerce software providers (such as Magento or Shopify) have enabled many firms to sell online. Yet, creating succesful webshops remains challenging even for professionals. A key aspect for successful webshops is its perceived quality, which researchers have conceptualized in several frameworks (Kim and Kim, 2020; Loiacono et al., 2002, Parasuraman et al., 2005; Suryani et al., 2022; Wolfinbarger and Gilly, 2003; Yoo and Donthu, 2001). Apart from a webshop's fulfillment ability, they especially point to dimensions concerning a webshop's overall appearance, i.e., its e-commerce presence, including dimensions such as its media design or its informational quality.

However, to build effective e-commerce presences, firms need to understand the nature and impact of the underlying webshop elements (Bleier et al., 2019; Luo et al., 2012). Webshop elements represent the "building blocks" of webshops' quality dimensions and can be directly implemented by webshop owners. For example, to optimize the design quality of a webshop, firms need to know which webshop elements actually constitute its design (such as colors or basic media like images or videos).

Thus, many researchers have devoted substantial efforts towards exploring the quality of e-commerce presences and its underlying elements to provide guidance to practitioners. As a result, several literature reviews and meta-analyses have systemized respective findings (e.g., Blut et al., 2015, Cyr, 2014; Zhao et al., 2021). However, in doing so, these consolidating works have explored individual webshop elements only to a limited degree (see Table 1) and have done so mainly with a specific perspective (topic focus), such as personalization (Adolphs and Winkelmann, 2010) or culture (Moura et al., 2016).

Moreover, researchers do not have a full and current picture about how webshop elements can contribute towards e-commerce presence effectiveness. First, that is because the identified reviews and meta-analyses typically focus on specific, but not overarching outcomes (e.g., trust, Kim and Peterson 2017, or satisfaction, Ghasemaghaei and Hassanein, 2015). Second, most reviews and meta-analyses (with the exception of Zhao et al., 2021) base their findings on studies published no later than 2015, thus being comparably old for a dynamically developing field such as e-commerce.

To gain a comprehensive state-of-the-art view on the effectiveness of webshops and their elements, it is also vital to understand the underlying mechanisms and how they can be measured. Yet, research still lacks a cohesive overview of the applied theories, research methods, and dependent variables (Table 1).

Degree of considered webshop elements	Format	Study focus on…					Thematic focus
		…webshop elements	…applied theories	…applied methods	…dependent variables	Current-ness	
Adolphs & Winkelmann (2010)	LR	+	o	o	o	o	Personalization
Blut et al. (2015)	MA	+	o	o	+	+	E-Service Quality
Cyr (2014)	LR	+	o	+	+	+	General website design
Ghasemaghaei and Hassanein (2015)	MA	+	o	o	+	+	Information quality; consumer satisfcation
Kim and Peterson (2017)	MA	+	o	o	+	+	Online trust relationships
Moura et al. (2016)	LR	+	o	++	+	+	Cultural aspects
Zhao et al. (2021)	MA	+	o	o	+	++	Online impulse buying
Our study	LR	++	++	++	++	++	Webshop elements
LR = literature review; MA = meta-analysis; ++ = high + = medium o = low							

Table 1 Literature reviews and meta-analyses on the effectiveness of e-commerce presences

Hence, we aim to shed more light on the effectiveness of webshop elements inherent to quality dimensions of e-commerce presences by answering the following research questions:

- What is the state-of-the-art knowledge about the nature and effectiveness of webshop elements to enhance e-commerce presences?
- What underlying theories, methods, and variables can researchers use to explore this effectiveness?
- Which related insights are important but missing and could serve as avenues for future research?

Built on a systematic literature search, we provide multiple perspectives on the research landscape both from a content perspective (e.g., what webshop elements were explored), research study set-ups, major explored variables (independent, dependent, moderators, and mediators) as well as the mostly used theories and methods. Ultimately, we then use these results to propose our future research agenda.

2 Methodology

We followed the systematic literature review methodology by vom Brocke et al. (2009) and vom Brocke et al. (2015), which is frequently used for systematic reviews (e.g., Schellinger et al., 2022; Schmidt et al., 2021). Our search string (Figure 1) rests on an iterative process, starting with key studies of the fields and adding synonyms and other relevant keywords when screening these initial articles. For example, we added terms relating to upcoming technologies relevant for creating effective e-commerce presences, such as augmented and virtual reality, which were inspired by key studies and their related key words (e.g., Alimamy and Gnoth, 2022). This search string was the basis for the literature searches within three databases that are frequently used for systematic reviews with comparable research questions and scopes: *1) Web of Science* (Koukouvinou and Holmström, 2022; Schellinger et al., 2022), *2) EBSCO* (Fischer-

Pressler and Bonaretti, 2022; Nagel and Kranz, 2021; Tessmann and Elbert, 2022) and *3) Sciencedirect* (Jagals and Karger, 2021; Schmidt et al., 2021). We followed previous systematic reviews (Fischer-Pressler and Bonaretti, 2022; Schellinger et al., 2022; Tessmann and Elbert, 2022) and used several databases to make the search results more robust.

We then validated the studies against multiple inclusion and exclusion criteria. That is, the articles had to be written in English and published in peer-reviewed journals or conferences between 2013 and 2022. Moreover, all studies had to deal with the succesful design of webshop elements (e.g., basic media or audio usage) and should not deal with advertisement-related topics (e.g., search engine optimization or display ads). We then performed a forward and backward search to complement our initial search results (Figure 1). Mapping the studies along their publication years (Figure 2) reveals notable variations. However, because our review considers studies of a specific topic (e-commerce presences), these variations are more likely to occur compared to more overarching topics (e.g., e-commerce in general).

Databases	Total results	Duplicate removal	VHB filter	Title & abstract	Full text	Forward and backward	N of this study
Web of Science	n = 635						
EBSCO	n = 2305	- 960	- 5246	- 2817	- 453	+ 7	91
ScienceDirect	n = 6620						
("website" OR "webshop" OR "online retail" OR "online shop" OR "online store" OR "e-retail" OR "e-shop" OR "landing page" OR "product page" OR "product detail page") AND ("e-commerce" OR "e commerce") AND ("element" OR "design" OR "optimization" OR "conversion" OR "personalization" OR "trust" OR "virtual reality" OR "augmented reality" OR "media" OR "video" OR "image" OR "feature" OR "content")							

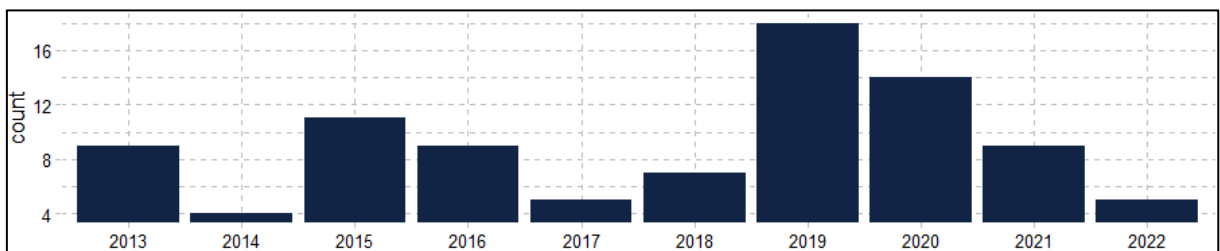*Figure 1 Literature review process*

Figure 2 Studies per year

3 Content analysis

First, we derived eight categories of webshop elements from the identified literature based on a structured synthesis of the quality dimensions suggested in the existing frameworks, literature reviews, and meta-analyses. Specifically, the category "assurance mechanisms" results from Loiacono et al. (2002) and Wolfinbarger and Gilly (2003), while "basic media", "rich media," and "color usage" were inspired by Yoo and Donthu (2001), Loiacono et al. (2002), Campbell et al. (2013), and Zhao et al. (2021). The categories "audio usage" and "chat" were inspired by Loiacono et al. (2002). Finally, Wolfinbarger and Gilly (2003) and Adolphs and Winkelmann (2010) imbued the category "personalization".

We then mapped all identified studies along the webshop element categories and along their overarching research approach (see Table 2). This is an important criterion as these approaches determine how valid research results are with regard to their cause-and-effect chain (internal validity) and applicability to real, non-study-specific environments (external validity). Specifically, these research approaches include: 1) analyses based on manipulated versions of shops and the respective elements under study (laboratory experiments, high internal validity), 2) analyses based on real, non-manipulated webshops (observations, high external validity), and 3) analyses based on specifically manipulated real webshops (field experiments, high internal and external validity).

Category	Field experiment studies (high external & internal validity)	Laboratory experiment studies (high internal validity)	Real webshop studies (high external validity)
Assurance mechanisms	Huang et al. (2019); Özpolat et al. (2013)	Bansal et al. (2015); Casado-Aranda et al. (2019); Darke et al. (2016); Li et al. (2014); Müller et al. (2019); Roghanizad and Neufeld (2015)	Chang and Fang (2013); Chen and Teng (2013); Karimov and Brengman (2014); Kim et al. (2016); Mavlanova et al. (2016); Oezpolat and Jank (2015); Seckler et al. (2015); Wang et al. (2018); Xu et al. (2017); Ye and Fang (2013); Zhou et al. (2016)
Audio usage		Cuny et al. (2015); Hwang et al. (2020); Hwang and Oh (2020); Klein et al. (2021); Reynolds-McIlnay and Morrin (2019)	
Basic media		Darke et al. (2016); Diwanji and Cortese (2020); Espigares-Jurado et al.(2020); Klein et al. (2021); Lee and Choi (2019); Liang et al. (2021); Maier (2019); Maier and Dost (2018); Orús et al. (2017); Walia et al. (2016)	Diwanji and Cortese (2020); Smink et al. (2019)
Chats	Tan et al. (2019)	Adam et al. (2021); Go and Sundar (2019)	Chen et al. (2021); Kang et al. (2015); Lv et al. (2018); Mero (2018); Mimoun and Poncin (2015)
Color usage		Cheng et al. (2019); Ettis (2017); Hsieh et al. (2022); Nissen (2020)	
Personalization	Benlian (2015); Ding et al. (2015); Hauser et al. (2014); Lee and Hosanagar (2019); Liberali and Ferecatu (2022)	Ding et al. (2015); Liberali and Ferecatu (2022); Müller et al. (2019); Yoon et al. (2013)	Alimamy and Gnoth (2022); Nilashi et al. (2016); Nguyen (2020); Pappas et al. (2014)
Rich media	Yang and Xiong (2019)	Algharabat et al. (2017); Bonnin (2020); Fan et al. (2020); Heller et al. (2019); Hilken et al. (2022); Huang (2021); Kinzinger et al. (2022); Krasonikolakis et al. (2018); Li and Meshkova (2013); Peukert et al. (2019); Smink et al. (2020); Yim et al. (2017)	Alimamy and Gnoth (2022); Kowalczuk et al. (2021); Smink et al. (2020); Smink et al. (2019); Xue et al. (2020)
Nascent areas	Huang et al. (2021); Roethke et al. (2020)	Chen (2018); Lo et al. (2016); Meng et al. (2021); Roethke et al. (2020); Wu (2019); Xu and Sundar (2016); Zhang et al. (2020)	Ageeva et al. (2019); Bilgihan and Bujisic (2015); Brusch et al. (2019); Cohen et al. (2020); Cyr (2013); Di Fatta et al. (2018); Fei et al. (2021); Floh and Madlberger (2013); Hoekstra et al. (2015); Kaushik et al. (2020); Liu et al. (2013); McDowell et al. (2016); Zhou et al. (2020)

Table 2 Articles identified mapped per core topic and research setting in alphabetical order

Mapping the literature along the webshop element categories (Table 2) reveals interesting findings. First, webshop elements such as rich media and assurance mechanisms have already been studied extensively as opposed to elements such as audio usage or color usage. Interestingly, a major part of the studies is based on laboratory experiments, while field experiments are relatively scarce despite the practical relevance of the topic. Generally, most studies rely on research settings of either high internal or high external validity, leaving room for supporting their findings in complementary settings. Music and color usage within webshops even lack complete external validation, leaving room for further research efforts. We will further elaborate on the eight webshop element categories highlighted by Table 2 over the course of the next sections, thereby focusing on key findings of each field.

3.1 Assurance mechanisms

Assurance mechanisms refer to internal and external signals (e.g., third-party certifications, seals, or warranties) intended to enhance trust in e-commerce settings, both while browsing a webshop (e.g., Hao et al., 2014) and during the actual purchase decisions, aiming at enhancing users' purchase intentions (Özpolat et al., 2013; Özpolat and Jank, 2015). However, a combined usage of assurance mechanisms may not always be beneficial. While Mavlanova et al. (2016) find that external and internal signals can complement each other and lead to positive outcomes, other works regard it as counterproductive (Wang et al., 2018; Özpolat and Jank, 2015) or effective rather for smaller retailers (Özpolat and Jank, 2015).

Overall, despite a solid body of research in this field, it may still benefit from future work. First, studies on the combination of assurance mechanisms still contradict each other in parts (see above). Researchers could thus explore the underlying mechanisms and situational factors potentially accounting for those differences (i.e. culture, product type, age or gender). Second, only a few studies have analysed the concept of distrust or trust in this regard, even though these constructs have been directly linked to the design of e-commerce presences (e.g., Seckler et al., 2015). Future studies could test whether an explicit integration of this concept into website quality frameworks could help explain differences.

3.2 Audio usage

The second category deals with the usage of audio elements within webshops. It covers the usage of interactive music, individual sounds, and background music. In their investigation of background music Klein et al. (2021) find that it can strongly influence consumer perceptions of visual images, which might significantly impact the results presented in sections 3.3 and 3.7. Moreover, individually selected sounds (such as sounds playing after clicking on a "add to cart" button) may enhance users' perceptions, such as trust (Reynolds-McIlnay and Morrin, 2019). Another perspective was taken by Hwang and Oh (2020) and Hwang et al. (2020) who focus on interactive music (i.e., music controllable by the webshop user) and reveal that it may substantially increase user engagement and behavioral intentions. However, its effect depends on the degree of consumer involvement. Specifically, offering too many music settings to low involvement consumers can also backfire (Hwang et al., 2020).

Interestingly, all identified studies in this field rely on laboratory experiments, thus lacking external validity. Hence, future studies could consider more realistic settings (e.g., study real reactions to auditory confirmation sounds). Moreover, study contexts are limited from a cultural perspective. For example, none of the studies was conducted in a non-western context, although sounds in other cultural settings (e.g., Asia) are typically very different from those in the studied settings.

3.3 Basic media

Basic media objects refer to design elements such as images or videos used in a webshop context. With regard to images or videos, Dark et al. (2016) analyze when and how webshop-placed images of offline locations (e.g., brick-and-mortar branches) can reduce users' webshop-related uncertainties. Other studies analyzing product-related images explore aspects such as the integration of different model types

into the images (professional vs. unprofessional, e.g., Liang et al., 2022) or the complexity of the provided images in relation to the product context and information needs (e.g., Walia et al., 2016). In this regard, especially studies on the usage of product videos are particularly helpful (Diwanji and Cortese, 2020) to find out when and how they can positively affect users' purchase decisions (Orús et al., 2017).

With regard to image or video positioning, recent findings suggest that main images on websites can be of big help in generating attention but vary in importance depending on the age and the state of the website visitors and their degree of goal-orientation (e.g., Espigares-Jurado et al., 2020). Other studies did not yet investigate different main image setups or alternatives like sliders or carousels. Lastly, it has also been found that simple images of offline locations can significantly reduce the psychological distance perceived by website visitors (Darke et al., 2016) .

Overall, the basic media category is still a rather young research area with most studies published within the last five years. This results probably from the very recent developments in this field, particularly owing to the increasing importance of videos. Moreover, comparably new media formats such as sliders, carousels, or animated banners, have hardly been investigated in the context of webshops, thus leaving substantial room for future research. Additionally, product galleries on product detail pages that can include both images and videos or even three dimensional elements have not yet been explored.

3.4 Chats

The fourth category focuses on direct customer interaction through chat technology. For example, Lv et al. (2018) find that live chat usage is positively related to subsequent purchase decisions and that salesperson behavior in chats has a significant impact in this regard. Mero (2018) shows that when users perceive chat interactions as initiated by the salesperson their trust, satisfaction, and repurchase intention increase. Additionally, Tan et al. (2019) show that users with higher purchase intentions are more likely to use live chats and that low rated sellers benefit more from live chats than sellers with higher ratings.

With regard to artificial chatbots, findings indicate that more human-like chatbot avatars (anthropomorphic chatbots; Seeger et al., 2021) enhance customer satisfaction after interaction (Go and Sundar, 2019). Moreover, so called "foot in the door" techniques (e.g., continued-question procedures) may increase the likelihood of users taking a desired action, such as providing positive feedback (Adam et al., 2021).

Overall, we find that research comparing livechats with artificial chatbots is still limited since most studies focus only on one type of chatbot. However, such work is highly relevant in order to provide practitioners with selection strategies to find the best solution for different stages of the customer journey or different industries, customers, and cultures. Moreover, it seems worthwhile to explore the boundary conditions of sales strategies applied within chats (e.g., consumer needs or involvement, product or complexity).

3.5 Color usage

The next element category deals with the usage of colors within webshops. Although only a few studies have analysed this topic so far, researchers have already greatly improved our understanding in this field. For example, to trigger feelings of flow in webshop users, firms should rather bank on blue than yellow colors (Ettis, 2017). Similarly, through comparing blueish, grey, greenish and reddish websites with regard to aesthetic perceptions, Nissen (2020) shows that blue outperforms other colors. However, not all studies confirm the superiority of blue: Hsieh et al. (2022) find that warm colors (i.e., red) generate higher levels of arousal compared to cool colors (i.e., blue) when used as a background color on shopping websites. Yet, these differences may result from the divergent cultural settings of the studies (Hsieh et al., 2022: Taiwan; Nissen, 2020: Germany) and have been confirmed by comparable studies (e.g., Cheng et al., 2019), who reveal that warm and cool colors cause different levels of arousal in users.

Because all studies on color usage rely on laboratory experimental setups, there is a need to establish external validity, for instance by relying on field experiments or real webshop settings. Moreover, it remains unclear how the insights on dominant colors may hold in business practice when companies are restricted by their corporate design and identity. Thus, it seems worthwhile to explore whether firms

may leverage benefits of cool colors (such as blue) even if their actual design is primarily driven by warm colors. Lastly, given the results from the audio category (i.e., benefits of giving users control over specific website characteristics) and since many apps and websites already offer color dark mode toggles, it seems fruitful to investigate the impact of interactive color usage.

3.6 Personalization

The sixth category examines webshop personalization in terms of adapting a webshop appearance or functionality to the specific user, typically through applying machine learning or complex mathematical models (e.g., multi-armed bandit and hidden Markov models). Research shows that these morphs can indeed increase website performance in terms of purchase intentions when shown to the right user at the right time (Hauser et al., 2014; Ding et al., 2015; Liberali and Ferecatu, 2022).

However, personalization cannot only directly enhance economic indicators, but also soft factors such as emotions (Pappas et al., 2014), trust (Nilashi et al., 2016), customer satisfaction (Yoon et al., 2013), or overall site perception (Benlian, 2015). Additionally, some studies suggest potential pitfalls and indicate that sales diversity might decrease through recommendations (Lee and Hosanagar, 2019).

Across all studies, we observe that most data points used to dynamically morph websites are limited to clickstream data. However, other potentially relevant datapoints such as mouse hovers or scrolling might help improve existing models by offering more nuanced insights into user actions. In a mobile context, similar new data points can be included such as swiping. Moreover, personalization research should not be limited to entire website morphs or tools like recommender systems, as many other parts of a webshop (such as product detail page information, media, or navigational elements) could be personalized and target, for example, users' culture, personal characteristics, or customer journey stages.

3.7 Rich media

Another category deals with rich media where we distinguish three different types of media objects, namely three dimensional elements (3D), augmented reality (AR), and virtual reality (VR). With regard to the usage of 3D elements, studies show multiple beneficial impacts for firms, such as improved product attitudes (e.g., Algharabat et al., 2017), but they may differ depending on the applied 3D store layout (e.g., Krasonikolakis et al., 2018). Regarding AR, virtual fittings rooms are promising for specific industries (e.g., fashion) and can considerably raise users' purchase intentions (e.g., Yang and Xiong, 2019; Yim et al., 2017). However, AR does not always trump conventional websites, so that AR's success may substantially depend on the respective product and webshop context (e.g., Alimamy and Gnoth, 2022; Kowalczuk et al., 2021). Regarding VR, Xue et al. (2020) find that consumers expect a high degree of vividness with authentic product features and that differences exist between consumer orientations (hedonic vs utilitarian). However, VR may be more suitable than AR when striving for stronger brand attitudes, which are also relevant for purchase intentions (Hilken et al., 2022).

Overall, this research field has been well investigated in terms of different topical aspects as well as from an internal and external validity perspective. However, the studies are lacking important trends, such as the emergence and role of virtual influencers, that have not yet been explored in this context at all. Moreover, researchers should address the contradicting results on comparisons between conventional websites and AR experiences. Lastly, work on 3D webshop elements primarily focusses on individual 3D elements in the form of product media while modern libraries (e.g., three.js) enable developpers to create game-like 3D experiences on websites, which might differ in the way they influence consumer behavior. Studying the differences between such setups and VR stores could thus be another interesting avenue for future research.

3.8 Nascent areas

We also identified several nascent research streams which we group together due to the low quantity of studies in each subcategory. Specifically, we included the research streams of livestreaming,

interactivity, and parallel inclusion of website elements. First, Fei et al. (2021) conduct an eye tracking experiment in a livestreaming setting and find that social cues (herding messages and interaction texts) are a double-edged sword, as interaction texts can cause user distraction while herding messages are more positive with regard to bringing attention to the promoted product. Moreover, Meng et al. (2021) investigate the impact of celebrity inclusion within livestreams and find that the viewers are not only influenced by the popular endorser, but also by the contagion effect caused by the audience. Overall, livestreaming research is so far rather narrow in terms of topics studied.

With regard to interactivity, study results are still mixed, claiming that interactive elements can improve users' product attitude and reduce the negative impact of perceived reduced control on the side of the consumer (Wu, 2019), while too much interactivity can also backfire (Xu and Sundar, 2016). More specifically, Xu and Sundar (2016) find that intertactive elements are recalled more strongly, but also reduce recall of non-interactive elements. Moreover, the authors find that time spent on a page is impacted by the degree of interactivity, which may not always be beneficial.

Other studies compare the impact of multiple elements simultaneously. In this regard, McDowell et al. (2016) study 23 different factors (e.g., shopping cart icons, recommended products, featured products, human contact information, order tracking functionality, etc.) and their impact on consumer actions. Another study analysing six different factors (e.g., page speed and existence of discounts) and their impact on purchase rates was conducted by Di Fatta et al. (2018). Other related studies focus primarily on impulse buying (Lo et al., 2016; Liu et al., 2013; Floh and Madlberger, 2013), but follow comparable approaches. Interestingly, while these studies use some overlapping criteria, the nature and quantity of variables used to study the same outcome differ significantly between the studies. Another approach stems from Brusch et al. (2019) who investigate the relative importance of several webshop elements for smaller and bigger online retailers.

Overall, we argue that any of these nascent fields bears a lot of potential for future investigations. For example, with regard to livestreaming features, studies are still relatively limited in their scope. Established platforms such as Twitch and DouYu already offer ample features that could be analysed in a webshop context within future studies (e.g., community badges, chat functionality, community emotes or specific roles within the livestream such as moderators).

Moreover, research opportunities in this area might be centered around webshop parts relevant for the customer journey outside of mere product detail pages. Product catalogs, carts, main pages, about us pages, or service areas have not been studied so far despite being essential parts of many webshops. In this context, also studies on how to best eliminate products or services from the portfolio and thus from the webshop could help broadening the research scope (e.g., Prigge et al., 2018). Approaches used to study product detail pages could thus be replicated in these contexts to validate existing insights. Moreover, many of these studies could benefit from an integration with aspects from other categories such as audio usage, color usage, or media objects. All of these elements could be included into more widespread analyses of (impulse) purchase rates that include several elements in order to provide a more complete picture on the effects operating in this regard.

4   Structural analysis

Besides the content analysis presented in section 3, our review includes three additional perspectives on the literature: a theory-focused, a method-focused, and a variable-focused perspective. We also relate the studies to the the disciplines to which they belong, using the VHB-JOURQUAL3 rating (VHB e.V., 2015) as the basis for the discipline mapping. Thereby, MA refers to marketing, IS refers to information systems and "Other" encompasses disciplines that were less frequently mapped, such as organizational or service research. Notably, some of the studies belong to multiple subratings and were thus mapped multiple times.

With regard to theories, we find that only about half of the identified studies draw on or extend established theories. Among those, stimulus-organism-response theory (SOR), signaling theory (ST), and the elaboration likelikhood model (ELM) are the most frequent. They are majorly used in contexts such as basic media, music and assurance mechanisms (ELM); personalization, rich media and color usage (SOR) as well as assurance mechanisms (ST). From a cultural perspective, only studies in

American or Asian contexts have been based on the ELM or signaling theory with regard to individual webshop elements whereas the SOR model has served as the basis for a multitude of cultural contexts (e.g., USA, China, Germany, UK, Taiwan, Southern Europe).

Overall, researchers should integrate those or additional theories into their research for a more coherent theoretical basis in future studies on e-commerce presences. Especially, media richness theory could help explain the impact of media objects in different webshop scenarios (e.g., Walia et al., 2016), whereas herding theory (used in Ye et al., 2013) can be applied to situations where website visitors come together (i.e., in livestreams or reviews). Additionally, we observe that the theories are used relatively similarly across disciplines, which underlines the importance of performing broad literature searches when conducting e-commerce research. Table 3 summarizes the major theories identified in this review.

Theory	Exemplary references	Disciplines
Construal level theory	Darke et al. (2016); Liang et al. (2021); Zhang et al. (2020)	MA (2), OTHER (3)
Cue utilization theory	Karimov and Brengman (2014); Yim et al. (2017)	MA (2), IS (1)
Elaboration Likelihood Model	Bansal et al. (2015); Hwang et al. (2020); Li et al. (2014); Walia et al. (2016); Zhou et al. (2016)	MA (2), IS (4)
Information processing theory	Huang et al. (2019); Huang et al. (2021)	IS (2), OTHER (2)
Media richness theory	Walia et al. (2016)	MA (1), IS (1)
Signaling theory	Chen and Teng (2013); Mavlanova et al. (2016); Wang et al. (2018)	MA (2), IS (3), OTHER (3)
Stimulus-organism-response theory	Benlian (2015); Ding et al. (2015); Ettis (2017); Fei et al. (2021); Floh and Madlberger (2013); Krasonikolakis et al. (2018); Liu et al. (2013)	MA (5), IS (5), OTHER (6)

Table 3 Major theories identified through the systematic review

With regard to methods, the picture is more diverse (see Table 4). A majority of studies has drawn on structural equation models (SEM), especially those who applied an observation or survey-based approach (see Table 2), followed by studies relying on regression analyses, mainly in contexts such as assurance mechanisms, live chats, content and rich media. Especially interesting is the growing number of studies applying Hayes-based mediation and moderation models, particulary in recent years. As of today, these models are, however, used comparably more often in a marketing than IS context.

Future studies could concentrate on the application of general linear models (e.g., negative binomial or poisson regression) in setups with count data (e.g., interactions within livestreams or reactions to reviews; see, for example, Schwehm & Prigge, 2022). Moreover, customer taxonomies used in website morphing studies (see paragraph about personalization) could be used as levels in hierarchical models to account for potential group effects.

Method	Exemplary references	Disciplines
Structural Equation Modeling	Ageeva et al. (2019); Alimamy and Gnoth (2022); Bansal et al. (2015); Bilgihan and Bujisic (2015); Chen and Teng (2013); Cuny et al. (2015); Darke et al. (2016); Huang (2021); Kim et al. (2016); Kowalczuk et al. (2021); Liu et al. (2013); Meng et al. (2021); Nilashi et al. (2016); Pappas et al. (2014); Peukert et al. (2019); Walia et al. (2016); Yim et al. (2017); Yoon et al. (2013)	MA (9), IS (12), OTHER (10)
Partial Least Squares	Benlian (2015); Hoekstra et al. (2015); Kinzinger et al. (2022); Mero (2018); Nilashi et al. (2016)	MA (2), IS (5)

Regression models	Logistic regression	Adam et al. (2021); Huang et al. (2019); Lv et al. (2018); Oezpolat and Jank (2015); Oezpolat et al. (2013); Roethke et al. (2020); Roghanizad and Neufeld (2015)	MA (3), IS (6), OTHER (7)
	Negative binomial regression	Huang et al. (2021)	IS (1), OTHER (1)
	Other regression-based studies	Adam et al. (2021); Di Fatta et al. (2018); McDowell et al. (2016); Oezpolat and Jank (2015); Tan et al. (2019); Yang and Xiong (2019); Ye et al. (2013)	MA (3), IS (5), OTHER (7)
Hayes mediation/ moderation models	Model 1	Hwang et al. (2020)	MA (1)
	Model 4	Hilken et al. (2022); Hwang and Oh (2020); Smink et al. (2019); Smink et al. (2020)	MA (3), IS (1), OTHER (2)
	Model 7	Heller et al. (2019); Hwang et al. (2020)	MA (2), OTHER (1)
	Model 80	Bonnin (2020)	MA (1), OTHER (1)
	Model 83	Heller et al. (2019)	MA (1), OTHER (1)
Eye tracking		Espigares-Jurado et al. (2020); Fei et al. (2021); Ye and Fang (2013)	MA (3), IS (2), OTHER (5)

Table 4 Major methods identified through the systematic review

In the following, we intend to provide e-commerce researchers with an overview of the major variables used to measure the effectiveness of e-commerce presences and their key success drivers (independent variables such as color usage or information quality). The results are summarized in Table 5. In particular, we find that a key outcome variable to assess e-commerce effectiveness is purchase intention, which has been used in a large part of the studies, while only a minority detects real purchases (e.g., Casado-Aranda et al., 2019; Huang, 2021).

Interestingly, most variables have been used in both marketing and information systems journals, but marketing studies seem to focus more on outcomes such as purchase intention, while purchases have been measured primarily in information systems articles. Finally, we find differences related to the cultural context of the studies. Our analyses show that most studies 3 have been conducted in the U.S. and China, followed by Germany, Taiwan, UK, Netherlands, and France, among others. Thus, while there is already a comparably high variance in cultural backgrounds of the studies, cross-cultural differences and other regions, such as African or South American contexts, were hardly investigated. Owing to the growing number of e-commerce users in these regions (Statista, 2022a; Statista 2022b) and the proven differences of suitable e-commerce presences across cultures, this may be worth exploring.

Function	Variable	Exemplary references	Context	Disciplines
Dependent variables	Purchase intention	Casado-Aranda et al. (2019); Chen and Teng (2013); Darke et al. (2016); Diwanji and Cortese (2020); Ettis (2017); Fan et al. (2020); Fei et al. (2021); Hilken et al. (2022); Hwang et al. (2020); Kim et al. (2016); Kinzinger et al. (2022); Kowalczuk et al. (2021); Krasonikolakis et al. (2018); Li and Meshkova (2013); Mavlanova et al. (2016); Meng et al. (2021); Orus et al. (2017); Pappas et al. (2014); Reynolds-McIlnay and Morrin (2019); Smink et al. (2019); Walia et al. (2016); Yim et al. (2017); Zhang et al. (2020); Zhou et al. (2016)	USA, South Korea, China, Germany, Greece, Spain, Taiwan, Turkey, Netherlands	MA (18), IS (11), OTHER (12)
	Loyalty	Bilgihan and Bujisic (2015); Brusch et al. (2019); Yoon et al. (2013);	USA, China, Germany	MA (3), IS (2), OTHER (3)

	Brand attitude	Diwanji and Cortese (2020); Hilken et al. (2022); Smink et al. (2019)	USA, Netherlands	MA (3), IS (1), OTHER (1)
	Willingness to pay	Benlian (2015); Casado-Aranda et al. (2019); Huang (2021); Heller et al. (2019); Li and Meshkova (2013)	Australia, UK, Germany, Spain, Taiwan, Netherlands	MA (4), IS (2), OTHER (2)
	Purchases	Oezpolat et al. (2013); Tan et al. (2019); Wang et al. (2018); Ye and Fang (2013); Zhou et al. (2020)	China	MA (1), IS (5), OTHER (5)
	Perceived usefulness	Cheng et al. (2019); Diwanji and Cortese (2020); Nguyen (2022)	Taiwan, Germany, USA	MA (1) IS (1), OTHER (2)
	Patronage intention	Bonnin (2020); Hsieh et al. (2022)	Taiwan, France	MA (2), IS (1), OTHER (1)
	Product attitude	Orús et al. (2017); Maier (2019); Wu (2019)	USA, Spain	MA (2), IS (2), OTHER (1)
Independent variables	Interactivity	Kowalczuk et al. (2021); Wu (2019); Xu and Sundar,(2016); Yim et al. (2017)	Germany, USA	MA (2), OTHER (3)
	Information quality	Bansal et al. (2015); Hoekstra et al. (2015)	USA, China, Netherlands	MA (1), IS (2)
	Color usage	Cheng et al. (2019); Ettis (2017); Hsieh et al. (2022)	Germany, Taiwan	MA (2), IS (1), OTHER (2)
	Reputation	Bansal et al. (2015); Karimov and Brengman (2014); Tan et al. (2019); Wang et al. (2018)	USA, China	MA (1), IS (4), OTHER (2)
Moderators	Cultural aspects	Cheng et al. (2019); Zhou et al. (2016)	Germany, Taiwan, China	IS (1), OTHER (1)
	Online shopping experience	Algharabat et al. (2017); Oezpolat and Jank (2015); Yoon et al. (2013)	USA, Jordan	MA (3), IS (2), OTHER (5)
	Product type	Fan et al. (2020); Li and Meshkova (2013); Zhang et al. (2020)	China, Netherlands	MA (2), IS (1), OTHER (2)
	Product price	Walia et al. (2016)	USA	MA (1), IS (1)
	Product Knowledge	Yoon et al. (2013)	USA	MA (1), IS (1), OTHER (2)
Mediators	Trust	Bansal et al. (2015); Bilgihan and Bujisic (2015); Chang and Fang (2013); Darke et al. (2016); Chen and Teng (2013); Mero (2018); Müller et al. (2019); Nilashi et al. (2016); Reynolds-McIlnay and Morrin (2019); Zhou et al. (2016)	Germany, USA, Finland, China, Malaysia, Taiwan	MA (6), IS (8), OTHER (2)
	Immersion	Cuny et al. (2015); Huang (2021); Kowalczuk et al. (2021); Yim et al. (2017)	Germany, USA, France, Taiwan	MA (2), IS (1), OTHER (2)
	Enjoyment	Benlian (2015); Ettis (2017); Kowalczuk et al. (2021); Peukert et al. (2019); Smink et al. (2019); Yim et al. (2017)	Germany, USA, Netherlands	MA (3), IS (3), OTHER (2)
	Perceived Risk	Alimamy and Gnoth (2022); Bonnin (2020); Casado-Aranda et al. (2019); Darke et al. (2016)	France, USA, Spain	MA (3), OTHER (3)
	Satisfaction	Brusch et al. (2019); Mero (2018); Yoon et al. (2013)	Finland, Taiwan, Germany, USA	MA (2), IS (2), OTHER (3)

Table 5 Major dependent variables used in the identified studies

5   Research Agenda

Based on the literature outlined above, we derive a future research agenda (Table 6) comprising research topics for each of the webshop element categories presented in Table 2 and Chapter 3. In particular, the research agenda includes key research questions derived and selected based on the analyses conducted within the sections 3 and 4 and the overview provided in Table 2. For example, some research topics are related to areas that have only been analysed in a single cultural context, while others may lack internal or external validity, depending on the setups used thus far. Other areas may be richer in terms of mere research quantity, but still contain ambiguous results. Ideally, the propositions are used in conjunction with Tables 2-5 and the descriptions included in sections 3 and 4. Owing to space restrictions, we focus on two major research topics per category.

Two overarching issues identified concern the distinction between different device sizes (e.g., mobile devices, desktop computers, or tablets) and the focus on product detail pages that may also be relevant for any of the research topics presented below. More precisely, our analysis revealed that only few studies explicitly state the devices on which the analysis was conducted or include screenshots of their setups in their manuscript or web appendix based on which the setups used could be derived (e.g., Liberali and Ferecatu, 2022). A clearer documentation in this regard would facilitate connecting new results with existing knowledge. Moreover, research so far focussed on product detail pages, while other important pages of webshops (e.g., home page, cart, checkout, order confirmation page, about us page) have largely been neglected. It would be interesting to see whether the existing results differ across these pages or whether they are robust across the customer webshop journey.

Category	Future research topics (RT)
Assurance mechanisms	**RT 1:** Results regarding the usage of multiple signals are still contradictive. Thus, future studies should study the boundary conditions that help explain these conflicts.
	RT 2: Research on distrust caused by webshop elements is scarce and studies need to identify potential pitfalls in this area, particularly if new technologies such as virtual fitting rooms, 3D store layouts, or livechats are used. Also the impact of potential co-occurrences of trust and distrust should are worth investigating.
Audio usage	**RT 3:** Studies on this topic have so far been purely experimental. Hence, this category lacks external validation. Future studies should thus extend the results through field studies (e.g., to validate potential benefits of auditory confirmation sounds or interactive music).
	RT 4: Studies on audio usage in webshop contexts are also very limited in their cultural scope. Future studies should therefore validate the current results cross-culturally.
Basic media	**RT 5**: Human characteristics used in webshop media are still underexplored. Researchers could analyse the impact of including individuals similar or different to the website visitors, or could explore the impact of celebrities in product pictures and the presentation of teams, contact persons, and testimonials.
	RT 6: Future studies should explore ways to reduce the perceived psychological distance by consumers by analysing media scenarios across the entire customer journey (e.g., validate results obtained regarding main images by analysing "about us" pages).
Color usage	**RT 7:** This category lacks complete external validation since all studies identified focused on experimental setups. Studies following more realistic setups can thus greatly complement the existing knowledge in this area.
	RT 8: Future work could study the effect of providing consumers with control over color usage on a webpage (similar to dark mode options and approaches regarding interactive music).
Chats	**RT 9:** Studies on e-commerce chats were mostly conducted in China. It seems promising to challenge their results through studies in Europe, the USA, or cross-culturally.

	RT 10: Studies did not compare chats with or without video elements. Results from the basic media category suggest potential boundary effects in this regard which should be explored.
Personalization of webshop elements	**RT 11:** Current personalization studies are mostly limited to morphing entire websites using predefined versions. Future studies should thus investigate whether individual elements can be morphed succesfully (e.g., showing more or different assurance mechanisms, displaying them more often for risk averse visitors). **RT 12:** The datapoints used for website morphing are mostly limited to clicks. Hence, future studies should try to improve current models by including data points such as hovering or scrolling and potentially even eye-tracking data.
Rich media	**RT 13:** Studies focus primarily on single 3D elements but neglect pages using modern libraries enabling entire 3D websites such as three.js, which could be analysed by future studies, for example with regard to differences compared to VR or AR technology. **RT 14:** Virtual fitting rooms have so far only been explored in Asian countries. Studies in European, American, or other contexts could thus extend the insights on this topic. Because this field also still lacks internal validity, laboratory experimental setups could help complement the current insights obtained so far.
Nascent areas	**RT 15:** Research on e-commerce livestreaming is currently narrow in terms of explored topics. Thus, future studies could analyse the potentials of existing features of popular (social) livestreaming platforms, such as Twitch or DouYu (e.g., community badges, channel emojis), that may play an important role in e-commerce livestreaming too. **RT 16:** Studies comparing multiple elements simultaneously are relatively scarce and use different sets of variables to study similar outcomes. Future work should aim at confirming the previously identified effects and identifying potential boundary conditions.

Table 6 Proposed future research agenda regarding individual webshop elements

6 Limitations

This systematic literature review is not without limitations. First, due to the selection of keywords and databases (Web of Science, EBSCO, and ScienceDirect), outlets such as books or articles of different languages might have been missed. Second, this review is the first to condense the research landscape to an individual webshop element level and to provide a broad overview of important topics. However, this also implies that the analyses of the individual areas mentioned in this systematic review are non-exhaustive. Third, literature classifications can always be influenced by subjective bias. To address this potential bias, we based the structure of our analysis on the established website quality frameworks, scientific literature as well as previous systematic reviews and meta-analyses of the field. Furthermore, we followed strict coding procedures as well as inclusion and exclusion criteria when conducting this systematic review to deal with the limitations mentioned earlier.

7 Conclusion

This work represents a systematic review on studies analysing individual webshop elements to decompose how e-commerce presences can be designed effectively and to derive avenues for future research. To do so, we first systematically identified literature and then mapped 91 articles along different categories of website elements and different types of analyses. In our research agenda, we identify key avenues for future research, which can help further improve the set-up of e-commerce presences, especially regarding its effectiveness. Moreover, we highlight current research practices on the application of different theories, major variables (e.g. dependent, independent, moderators and mediators), and methods used and make suggestions on how to further broaden the horizon of work on e-commerce presences.

References

Adolphs, C., and Winkelmann, A. (2010). Personalization research in e-commerce-A state of the art review (2000-2008). *Journal of Electronic Commerce Research*, 11(4), 326-341.

Adam, M., Wessel, M., and Benlian, A. (2021). AI-based chatbots in customer service and their effects on user compliance. *Electronic Markets*, 31(2), 427-445.

Ageeva, E., Melewar, T. C., Foroudi, P., and Dennis, C. (2019). Cues adopted by consumers in examining corporate website favorability: An empirical study of financial institutions in the UK and Russia. *Journal of Business Research*, 98, 15-32.

Algharabat, R., Alalwan, A. A., Rana, N. P., and Dwivedi, Y. K. (2017). Three dimensional product presentation quality antecedents and their consequences for online retailers: The moderating role of virtual product experience. *Journal of Retailing and Consumer Services*, 36, 203-217.

Alimamy, S., and Gnoth, J. (2022). I want it my way! The effect of perceptions of personalization through augmented reality and online shopping on customer intentions to co-create value. *Computers in Human Behavior*, 128, 107105.

Bansal, G., Zahedi, F. M., and Gefen, D. (2015). The role of privacy assurance mechanisms in building trust and the moderating role of privacy concern. *European Journal of Information Systems*, 24(6), 624-644.

Benlian, A. (2015). Web personalization cues and their differential effects on user assessments of website value. *Journal of Management Information Systems*, 32(1), 225-260.

Bilgihan, A., and Bujisic, M. (2015). The effect of website features in online relationship marketing: A case of online hotel booking. *Electronic Commerce Research and Applications*, 14(4), 222-232.

Bleier, A., Harmeling, C. M., and Palmatier, R. W. (2019). Creating Effective Online Customer Experiences. *Journal of Marketing*, 83 (2), 98-119.

Blut, M., Chowdhry, N., Mittal, V., and Brock, C. (2015). E-service quality: A meta-analytic review. *Journal of Retailing*, 91(4), 679-700.

Blut, M. (2016). E-service quality: development of a hierarchical model. *Journal of Retailing*, 92(4), 500-517.

Bonnin, G. (2020). The roles of perceived risk, attractiveness of the online store and familiarity with AR in the influence of AR on patronage intention. *Journal of Retailing and Consumer Services*, 52, 101938.

Brusch, I., Schwarz, B., and Schmitt, R. (2019). David versus goliath-service quality factors for niche providers in online retailing. *Journal of Retailing and Consumer Services*, 50, 266-276.

Campbell, D. E.; Wells, J. D.; Valacich, J. S. (2013). Breaking the ice in B2C relationships: Understanding pre-adoption e-commerce attraction. *Information Systems Research*, 24(2), 219-238.

Casado-Aranda, L. A., Dimoka, A., and Sánchez-Fernández, J. (2019). Consumer processing of online trust signals: a neuroimaging study. *Journal of Interactive Marketing*, 47, 159-180.

Chang, Y. S., and Fang, S. R. (2013). Antecedents and distinctions between online trust and distrust: Predicting high-and low-risk internet behaviors. *Journal of Electronic Commerce Research*, 14(2), 149-166.

Chen, M. Y., and Teng, C. I. (2013). A comprehensive model of the effects of online store image on purchase intention in an e-commerce environment. *Electronic Commerce Research*, 13(1), 1-23.

Chen, J. S., Tran-Thien-Y, L., and Florence, D. (2021). Usability and responsiveness of artificial intelligence chatbot on online customer experience in e-retailing. *International Journal of Retail & Distribution Management*, 49(11), 1512-1531.

Chen, M. (2018). Improving website structure through reducing information overload. *Decision Support Systems*, 110, 84-94.

Cheng, F. F., Wu, C. S., and Leiner, B. (2019). The influence of user interface design on consumer perceptions: A cross-cultural comparison. *Computers in Human Behavior*, 101, 394-401.

Chiou, W. C., Lin, C. C., and Perng, C. (2010). A strategic framework for website evaluation based on a review of the literature from 1995–2006. *Information & Management*, 47(5-6), 282-290.

Cohen, A. H., Fresneda, J. E., and Anderson, R. E. (2020). What retailers need to understand about website inaccessibility and disabled consumers: Challenges and opportunities. *Journal of Consumer Affairs*, 54(3), 854-889.

Cuny, C., Fornerino, M., and Helme-Guizon, A. (2015). Can music improve e-behavioral intentions by enhancing consumers' immersion and experience?. *Information & Management*, 52(8), 1025-1034.

Cyr, D. (2013). Website design, trust and culture: An eight country investigation. *Electronic Commerce Research and Applications*, 12(6), 373-385.

Cyr, D. (2014). Return visits: a review of how Web site design can engender visitor loyalty. *Journal of Information Technology*, 29(1), 1-26.

Darke, P. R., Brady, M. K., Benedicktus, R. L., and Wilson, A. E. (2016). Feeling close from afar: The role of psychological distance in offsetting distrust in unfamiliar online retailers. *Journal of Retailing*, 92(3), 287-299.

Di Fatta, D., Patton, D., and Viglia, G. (2018). The determinants of conversion rates in SME e-commerce websites. *Journal of Retailing and Consumer Services*, 41, 161-168.

Ding, A. W., Li, S., and Chatterjee, P. (2015). Learning user real-time intent for optimal dynamic web page transformation. *Information Systems Research*, 26(2), 339-359.

Diwanji, V. S., and Cortese, J. (2020). Contrasting user generated videos versus brand generated videos in ecommerce. *Journal of Retailing and Consumer Services*, 54, 102024.

Espigares-Jurado, F., Muñoz-Leiva, F., Correia, M. B., Sousa, C. M., Ramos, C. M., and Faísca, L. (2020). Visual attention to the main image of a hotel website based on its position, type of navigation and belonging to Millennial generation: An eye tracking study. *Journal of Retailing and Consumer Services*, 52, 101906.

Ettis, S. A. (2017). Examining the relationships between online store atmospheric color, flow experience and consumer behavior. *Journal of Retailing and Consumer Services*, 37, 43-55.

Fan, X., Chai, Z., Deng, N., and Dong, X. (2020). Adoption of augmented reality in online retailing and consumers' product attitude: A cognitive perspective. *Journal of Retailing and Consumer Services*, 53, 101986.

Fei, M., Tan, H., Peng, X., Wang, Q., and Wang, L. (2021). Promoting or attenuating? An eye-tracking study on the role of social cues in e-commerce livestreaming. *Decision Support Systems*, 142, 113466.

Fischer-Pressler, D. and Bonaretti, D. (2022). A Systematic Literature Review on Information Systems for Disaster Management and Proposals for its Future Research Agenda. *ECIS 2022 Research Papers*. 112, Timisoara, Romania.

Floh, A., and Madlberger, M. (2013). The role of atmospheric cues in online impulse-buying behavior. *Electronic Commerce Research and Applications*, 12(6), 425-439.

Ghasemaghaei, M., and Hassanein, K. (2015). Online information quality and consumer satisfaction: The moderating roles of contextual factors–A meta-analysis. *Information & Management*, 52(8), 965-981.

Go, E., and Sundar, S. S. (2019). Humanizing chatbots: The effects of visual, identity and conversational cues on humanness perceptions. *Computers in Human Behavior*, 97, 304-316.

Hauser, J. R., Liberali, G., and Urban, G. L. (2014). Website morphing 2.0: Switching costs, partial exposure, random exit, and when to morph. *Management Science*, 60(6), 1594-1616.

Heller, J., Chylinski, M., de Ruyter, K., Mahr, D., and Keeling, D. I. (2019). Touching the untouchable: exploring multi-sensory augmented reality in the context of online retailing. *Journal of Retailing*, 95(4), 219-234.

Hilken, T., Chylinski, M., Keeling, D. I., Heller, J., de Ruyter, K., and Mahr, D. (2022). How to strategically choose or combine augmented and virtual reality for improved online experiential retailing. *Psychology & Marketing*, 39(3), 495-507.

Hoekstra, J. C., Huizingh, E. K., Bijmolt, T. H., and Krawczyk, A. C. (2015). Providing information and enabling transactions: Which website function is more important for success. *Journal of Electronic Commerce Research*, 16(2), 81-94.

Hsieh, A. Y., Lo, S. K., and Hwang, Y. (2022). Making customers more likely to come back: the role of background colour in triggering arousal to influence memory, attitude, and patronage intention. *Electronic Commerce Research*, 1-20.

Huang, N., Sun, T., Chen, P., and Golden, J. M. (2019). Word-of-mouth system implementation and customer conversion: A randomized field experiment. *Information Systems Research*, 30(3), 805-818.

Huang, N., Mojumder, P., Sun, T., Lv, J., and Golden, J. M. (2021). Not registered? Please sign up first: A randomized field experiment on the ex ante registration request. *Information Systems Research*, 32(3), 914-931.

Huang, T. L. (2021). Restorative experiences and online tourists' willingness to pay a price premium in an augmented reality environment. *Journal of Retailing and Consumer Services*, 58, 102256.

Hwang, A. H. C., and Oh, J. (2020). Interacting with background music engages E-Customers more: The impact of interactive music on consumer perception and behavioral intention. *Journal of Retailing and Consumer Services*, 54, 101928.

Hwang, A. H. C., Oh, J., and Scheinbaum, A. C. (2020). Interactive music for multisensory e-commerce: The moderating role of online consumer involvement in experiential value, cognitive value, and purchase intention. *Psychology & Marketing*, 37(8), 1031-1056.

Jagals, M. and Karger, E. (2021), Inter-Organizational Data Governance: A Literature Review. *ECIS 2021 Research Papers*. 57, Marrakech, Morocco.

Kang, L., Wang, X., Tan, C. H., and Zhao, J. L. (2015). Understanding the antecedents and consequences of live chat use in electronic markets. *Journal of Organizational Computing and Electronic Commerce*, 25(2), 117-139.

Karimov, F. P., and Brengman, M. (2014). An examination of trust assurances adopted by top internet retailers: unveiling some critical determinants. *Electronic Commerce Research*, 14(4), 459-496.

Kaushik, V., Khare, A., Boardman, R., and Cano, M. B. (2020). Why do online retailers succeed? The identification and prioritization of success factors for Indian fashion retailers. *Electronic Commerce Research and Applications*, 39, 100906.

Kim, J. H., and Kim, M. (2020). Conceptualization and assessment of E-service quality for luxury brands. *The Service Industries Journal*, 40(5-6), 436-470.

Kim, Y., and Peterson, R. A. (2017). A Meta-analysis of Online Trust Relationships in E-commerce. *Journal of Interactive Marketing*, 38, 44-54.

Kim, D. J., Yim, M. S., Sugumaran, V., and Rao, H. R. (2016). Web assurance seal services, trust and consumers' concerns: An investigation of e-commerce transaction intentions across two nations. *European Journal of Information Systems*, 25(3), 252-273.

Kinzinger, A., Steiner, W., Tatzgern, M., and Vallaster, C. (2022). Comparing low sensory enabling (LSE) and high sensory enabling (HSE) virtual product presentation modes in e-commerce. *Information Systems Journal*, 32(5), 1034-1063

Klein, K., Melnyk, V., and Völckner, F. (2021). Effects of background music on evaluations of visual images. *Psychology & Marketing*, 38(12), 2240-2246.

Kowalczuk, P., Siepmann, C., and Adler, J. (2021). Cognitive, affective, and behavioral consumer responses to augmented reality in e-commerce: A comparative study. *Journal of Business Research*, 124, 357-373.

Krasonikolakis, I., Vrechopoulos, A., Pouloudi, A., and Dimitriadis, S. (2018). Store layout effects on consumer behavior in 3D online stores. *European Journal of Marketing*, 52 (5-6), 1223-1256

Kumar, H., and Srivastava, R. (2022). Exploring the role of augmented reality in online impulse behaviour. *International Journal of Retail & Distribution Management*, 50(10), 1281-1301.

Koukouvinou, P. and Holmström, J. (2022). AI Management beyond the Narratives of Dystopian Nightmares and Utopian Dreams: a Systematic Review and synthesis of the literature. *ECIS 2022 Research Papers*. 137, Timisoara, Romania.

Lee, K., and Choi, J. (2019). Image-text inconsistency effect on product evaluation in online retailing. *Journal of Retailing and Consumer Services*, 49, 279-288.

Lee, D., and Hosanagar, K. (2019). How do recommender systems affect sales diversity? A cross-category investigation via randomized field experiment. *Information Systems Research*, 30(1), 239-259.

Li, T., and Meshkova, Z. (2013). Examining the impact of rich media on consumer willingness to pay in online stores. *Electronic Commerce Research and Applications*, 12(6), 449-461.

Li, H., Jiang, J., and Wu, M. (2014). The effects of trust assurances on consumers' initial online trust: A two-stage decision-making process perspective. *International Journal of Information Management*, 34(3), 395-405.

Liang, X., Hu, X., Meng, H., Jiang, J., and Wang, G. (2021). How does model type influence consumer and online fashion retailing?. *International Journal of Retail & Distribution Management*, 50(6), 728-743

Liberali, G., and Ferecatu, A. (2022). Morphing for Consumer Dynamics: Bandits Meet Hidden Markov Models. *Marketing Science*, 41(4), 769-794.

Liu, Y., Li, H., and Hu, F. (2013). Website attributes in urging online impulse purchase: An empirical investigation on consumer perceptions. *Decision Support systems*, 55(3), 829-837.

Lo, L. Y. S., Lin, S. W., and Hsu, L. Y. (2016). Motivation for online impulse buying: A two-factor theory perspective. *International Journal of Information Management*, 36(5), 759-772.

Loiacono, E. T., Watson, R. T., and Goodhue, D. L. (2002). WebQual: A measure of website quality. *Marketing Theory and applications*, 13(3), 432-438.

Luo, J., Ba, S., & Zhang, H. (2012). The Effectiveness of Online Shopping Characteristics and Well-Designed Websites on Satisfaction. *MIS Quarterly*, *36*(4), 1131–1144.

Lv, Z., Jin, Y., and Huang, J. (2018). How do sellers use live chat to influence consumer purchase decision in China?. *Electronic Commerce Research and Applications*, 28, 102-113.

Maier, E., and Dost, F. (2018). The positive effect of contextual image backgrounds on fluency and liking. *Journal of Retailing and Consumer Services*, 40, 109-116.

Maier, E. (2019). The negative effect of product image inconsistency on product overviews during the online product search. *International Journal of Electronic Commerce*, 23(1), 110-143.

Mavlanova, T., Benbunan-Fich, R., and Lang, G. (2016). The role of external and internal signals in E-commerce. *Decision Support Systems*, 87, 59-68.

McDowell, W. C., Wilson, R. C., and Kile Jr, C. O. (2016). An examination of retail website design and conversion rate. *Journal of Business Research*, 69(11), 4837-4842.

Meng, L. M., Duan, S., Zhao, Y., Lü, K., and Chen, S. (2021). The impact of online celebrity in livestreaming E-commerce on purchase intention from the perspective of emotional contagion. *Journal of Retailing and Consumer Services*, 63, 102733.

Mero, J. (2018). The effects of two-way communication and chat service usage on consumer attitudes in the e-commerce retailing sector. *Electronic Markets*, 28, 205-217.

Mimoun, M. S. B., and Poncin, I. (2015). A valued agent: How ECAs affect website customers' satisfaction and behaviors. *Journal of Retailing and Consumer Services*, 26, 70-82.

Moura, F. T., Singh, N., and Chun, W. (2016). The influence of culture in website design and users' perceptions: Three systematic reviews. *Journal of Electronic Commerce Research*, 17(4), 312-339.

Müller, S., Thiesse, F., Hewig, J. and Schwehm, S. (2019). Personalization & Trust-Enhancing Signals in E-Commerce. *ICIS 2019 Proceedings*. 10, Munich, Germany.

Nagel, E. and Kranz, J. (2021). Is 'Chained' Property the Future? A Review and Synthesis of Literature on Blockchain Technology and Property Rights. *ECIS 2021 Research Papers*. 88, Marrakech, Morocco.

Nguyen, T. K. and Hsu, P. F. (2022) More Personalized, More Useful? Reinvestigating Recommendation Mechanisms in E-Commerce. *International Journal of Electronic Commerce*, 26(1), 90-122.

Nilashi, M., Jannach, D., bin Ibrahim, O., Esfahani, M. D., and Ahmadi, H. (2016). Recommendation quality, transparency, and website quality for trust-building in recommendation agents. *Electronic Commerce Research and Applications*, 19, 70-84.

Nissen, A. (2020). Psychological and Physiological Effects of Color Use on eCommerce Websites: a Neural Study Using fNIRS. *ICIS 2020 Proceedings*, 1, Hyderabad, India.

Özpolat, K., and Jank, W. (2015). Getting the most out of third party trust seals: An empirical analysis. *Decision Support Systems*, 73, 47-56.

Özpolat, K., Gao, G., Jank, W., and Viswanathan, S. (2013). The Value of Third-Party Assurance Seals in Online Retailing: An Empirical Investigation). *Information Systems Research*, 24(4), 1100-1111.

Orús, C., Gurrea, R., and Flavián, C. (2017). Facilitating imaginations through online product presentation videos: effects on imagery fluency, product attitude and purchase intention. *Electronic Commerce Research*, 17(4), 661-700.

Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., and Chrissikopoulos, V. (2014). Shiny happy people buying: the role of emotions on personalized e-shopping. *Electronic Markets*, 24(3), 193-206.

Parasuraman, A., Zeithaml, V. A., and Malhotra, A. (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213-233.

Peukert, C., Pfeiffer, J., Meißner, M., Pfeiffer, T., and Weinhardt, C. (2019). Shopping in virtual reality stores: the influence of immersion on system adoption. *Journal of Management Information Systems*, 36(3), 755-788.

Prigge, J. K., Homburg, C., & Fürst, A. (2018). Addressing a product management's orphan: How to externally implement product eliminations in a B2B setting. *Industrial Marketing Management*, *68*, 56-73.

Reynolds-McIlnay, R., and Morrin, M. (2019). Increasing shopper trust in retailer technological interfaces via auditory confirmation. *Journal of Retailing*, 95(4), 128-142.

Roethke, K., Klumpe, J., Adam, M., and Benlian, A. (2020). Social influence tactics in e-commerce onboarding: The role of social proof and reciprocity in affecting user registrations. *Decision Support Systems*, 131, 113268.

Roghanizad, M. M., and Neufeld, D. J. (2015). Intuition, risk, and the formation of online trust. *Computers in Human Behavior*, 50, 489-498.

Schwehm, K., & Prigge, J. K. (2022). Give it away and get it back? On the role and nature of giveaway campaigns by social media influencers. *ECIS 2022 Research-in-Progress Papers*. 57, Timisoara, Romania.

Seckler, M., Heinz, S., Forde, S., Tuch, A. N., and Opwis, K. (2015). Trust and distrust on the web: User experiences and website characteristics. *Computers in Human Bbehavior*, 45, 39-50.

Schellinger, B., Ante, L. and Bauers, S. B. (2022). Blockchain Use Cases and Concepts in Sports: A Systematic Review. *ECIS 2022 Research Papers*. 49, Timisoara, Romania.

Schmidt, K., Ullrich, A. and Eigelshoven, F. (2021). From Exploitative Structures Towards Data Subject-Inclusive Personal Data Markets – a Systematic Literature Review. *ECIS 2021 Research Papers*. 60, Marrakech, Morocco.

Seeger, A. M., Pfeiffer, J., & Heinzl, A. (2021). Texting with humanlike conversational agents: designing for anthropomorphism. *Journal of the Association for Information Systems*, 22(4), 8.

Smink, A. R., Frowijn, S., van Reijmersdal, E. A., van Noort, G., and Neijens, P. C. (2019). Try online before you buy: How does shopping with augmented reality affect brand responses and personal data disclosure. *Electronic Commerce Research and Applications*, 35, 100854.

Smink, A. R., Van Reijmersdal, E. A., Van Noort, G., and Neijens, P. C. (2020). Shopping in augmented reality: The effects of spatial presence, personalization and intrusiveness on app and brand responses. *Journal of Business Research*, 118, 474-485.

Statista (2022a), *eCommerce - Africa*. URL: https://www.statista.com/outlook/dmo/ecommerce/africa (visited on November 17, 2022)

Statista (2022b), *eCommerce – South America*, URL: https://www.statista.com/outlook/dmo/ecommerce/south-america (visited on November 17, 2022)

Suryani, T., Fauzi, A. A., Sheng, M. L., and Nurhadi, M. (2022). Developing and testing a measurement scale for SMEs' website quality (SMEs-WebQ): Evidence from Indonesia. *Electronic Commerce Research*, 1-32.

Tan, X., Wang, Y., and Tan, Y. (2019). Impact of live chat on purchase in electronic markets: The moderating role of information cues. *Information Systems Research*, 30(4), 1248-1271.

Tessmann, R. and Elbert, R. (2022). IOIS Adoption and Diffusion a Review of Port and Cargo Community System Literature. *ECIS 2022 Research Papers*. 43, Timisoara, Romania.

Vom Brocke, J., Simons, A., Niehaves, B., Riemer, K., Plattfaut, R. and Cleven, A. (2009) Reconstructing the Giant: On the Importance of Rigour in Documenting the Literature Search Process. *Proceedings of the 17th European Conference on Information Systems*.

VHB e.V. (2015) (20 *Liste der Fachzeitschriften in VHB-JOURQUAL3* URL: https://vhbonline.org/vhb4you/vhb-jourqual/vhb-jourqual-3 (visited on March 15, 2023)

Vom Brocke, J., Simons, A., Riemer, K., Niehaves, B., Plattfaut, R., and Cleven, A. (2015). Standing on the shoulders of giants: Challenges and recommendations of literature search in information systems research. *Communications of the Association for Information Ssystems*, 37.

Walia, N., Srite, M., and Huddleston, W. (2016). Eyeing the web interface: the influence of price, product, and personal involvement. *Electronic Commerce Research*, 16(3), 297-333.

Wang, Y., Qu, Z., and Tan, B. (2018). How do assurance mechanisms interact in online marketplaces? A signaling perspective. *IEEE Transactions on Engineering Management*, 65(2), 239-251.

Wolfinbarger, M., and Gilly, M. C. (2003). eTailQ: dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, 79(3), 183-198.

Wu, L. (2019). Website interactivity may compensate for consumers' reduced control in E-Commerce. *Journal of Retailing and Consumer Services*, 49, 253-266.

Xu, Q., and Sundar, S. S. (2016). Interactivity and memory: Information processing of interactive versus non-interactive content. *Computers in Human Behavior*, 63, 620-629.

Xu, X., Munson, C. L., and Zeng, S. (2017). The impact of e-service offerings on the demand of online customers. *International Journal of Production Economics*, 184, 231-244.

Xue, L., Parker, C. J., and Hart, C. (2020). How to design fashion retail's virtual reality platforms. *International Journal of Retail & Distribution Management*, 48(10), 1057-1076.

Yang, S., and Xiong, G. (2019). Try it on! Contingency effects of virtual fitting rooms. *Journal of Management Information Systems*, 36(3), 789-822.

Ye, Q., and Fang, B. (2013). Learning from other buyers: The effect of purchase history records in online marketplaces. *Decision Support Systems*, 56, 502-512.

Yim, M. Y. C., Chu, S. C., and Sauer, P. L. (2017). Is augmented reality technology an effective tool for e-commerce? An interactivity and vividness perspective. *Journal of Interactive Marketing*, 39(1), 89-103.

Yoo, B., and Donthu, N. (2001). Developing a scale to measure the perceived quality of an Internet shopping site (SITEQUAL). *Quarterly Journal of Electronic Commerce*, 2(1), 31-45.

Yoon, V. Y., Hostler, R. E., Guo, Z., and Guimaraes, T. (2013). Assessing the moderating effect of consumer product knowledge and online shopping experience on using recommendation agents for customer loyalty. *Decision Support Systems*, 55(4), 883-893.

Zhang, M., Qin, F., Wang, G. A., and Luo, C. (2020). The impact of live video streaming on online purchase intention. *The Service Industries Journal*, 40(9-10), 656-681.

Zhao, Y., Li, Y., Wang, N., Zhou, R., and Luo, X. R. (2021). A meta-analysis of online impulsive buying and the moderating effect of economic development level. *Information Systems Frontiers*, 1-22.

Zhou, T., Lu, Y., and Wang, B. (2016). Examining online consumers' initial trust building from an elaboration likelihood model perspective. *Information Systems Frontiers*, 18(2), 265-275.

Zhou, W., Lin, M., Xiao, M., and Wang, Z. (2020). Beyond the Search Bar: The Value of Search Quality on E-commerce Platforms. *ICIS 2020 Proceedings*. 1, Hyderabad, India.