**A systematic literature review of store atmosphere in alternative retail commerce channels**

**Abstract**

The importance of store atmospherics on consumers’ shopping behavior has been widely studied since the 1970s. Over the years, and with the development of technology, store atmosphere has changed form and shape in alternative retail commerce channels, such as brick-and-mortar, 2D and 3D online, mobile, and virtual and augmented reality. However, despite its importance, there is not a holistic analysis of the components and dimensions of store atmosphere in retailing. This research fills this gap by denoting integrated knowledge and outcomes in alternative commerce channels and developing a unifying integrative framework that includes the components, the antecedents, and the consequences of store atmosphere. We follow a systematic literature review approach to (1) review past research and directions, (2) develop a map of the components of store atmosphere in the last 45 years, (3) explicate 208 variables that are directly linked with store atmosphere, and (4) draw an integrative framework and present future research directions and managerial implications.

**Keywords:** store atmosphere, web atmospherics, store aesthetics, systematic literature review

# **1. Introduction**

There has been a lot of interest in the consumer behavior literature in the role of store atmosphere (SA) and consumers’ responses. The topic of store atmosphere has reached maturity with the advances of commercial channel extensions from traditional physical stores to online and virtual reality scenarios. Several studies show that store atmosphere directly affects consumers’ perceptions of a store and their consuming behavior (e.g., Verhagen & van Dolen, 2009; Krasonikolakis et al., 2018). Brocato et al. (2015, p. 200) report that ‘in atmosphere dominant service firms, sense of place leads to place attachment, which in turn plays a critical role in driving desirable customer behaviors. In brick-and-mortar retail stores, atmospheric factors such as color, and music influence emotional responses and purchase intentions. With the advent of e-commerce, many researchers have investigated whether the established knowledge of offline stores can also be applied to online stores (Vrechopoulos et al., 2004; Wu et al., 2015; Lombart et al., 2020). The same stands for more recent commerce channels, such as mobile and 3D online (Baek et al., 2018; Krasonikolakis et al., 2018; Schnack et al., 2021). Store atmosphere plays an indispensable role in driving consumer purchasing behaviors and assisting strategic decision-making for commercial organizations. Both academics and practitioners value store atmosphere factors as essential attributes in delivering consumer satisfaction.

Surprisingly, despite this common interest, most studies focus only on one particular commerce channel, or empirically investigate whether the outcomes and performance of store atmosphere in one commerce channel may exist in another. We argue that this approach does not lead to a higher level of understanding of all components that constitute store atmosphere. Even in the eras of multi-channel and omni-channel commerce, scholarly articles that explore key business and marketing concepts, taking into account all commerce channels, remain scarce. Furthermore, only two store atmosphere studies employed meta-analysis (Roschk et al., 2017) and systematic review (Gomes & Paula, 2017) to demonstrate the conceptual and theoretical implications of store atmosphere. This systematic literature review (SLR) is the first attempt to integrate knowledge and outcomes in alternative commerce channels and develop a unifying integrative framework that includes the components, the antecedents, and the consequences of SA. A systematic literature review approach was taken to present a holistic synthesis of store atmosphere research that may suggest theoretical development and managerial implications for practitioners. Having critically researched and analyzed each store atmosphere study of our review sample, we achieve this goal by offering theoretical significance and practical denotations to retailers, business managers and marketers. In the next section, we provide an overview of our methodology, focusing on the research questions that this review responds to, the search protocols, the inclusion and exclusion criteria, and data coding and synthesis. Then, we provide a descriptive review of pertinent literature, the methodological propositions, the relevant research contexts, and the thematic analysis. This is followed by an outline of a holistic framework of all constructs that are relevant to store atmosphere along with the theoretical vehicles in the domain. We conclude by providing theoretical and managerial implications, and future research directions.

# **2. Review Method**

To delineate a critical and comprehensive understanding of store atmosphere in retailing, we follow a structured systematic literature review that focuses on the interdisciplinary fields of marketing, information systems, business management, and consumer psychology (Paul & Singh, 2017; Kahiya, 2018; Dabić et al., 2020). Through the lens of systematic literature review, scholars capture ‘what we know’ as established knowledge (Rousseau et al., 2008, p. 5) and unknown components of a given research question through accumulative analysis and comprehension of the area under study (Shamsollahi et al., 2020). In the past, different approaches of systematic reviews have been developed, such as bibliometrics reviews (Dabić et al., 2019; Fakhar Manesh et al., 2020; Donthu et al., 2021), framework-based reviews (Xie et al., 2017; Paul & Benito, 2018), hybrid-narratives approach (Paul et al., 2017; Kumar et al., 2020), theme-based synthesis (Kahiya, 2018; Christofi et al., 2021), theory-based reviews (Hassan et al., 2016; Gilal et al., 2019), and meta-analyses (Roschk et al., 2017; Rana & Paul, 2019).

We follow a structured review type to synthesize widely adopted theories, methods, and constructs (Paul & Singh, 2017; Dabić et al., 2020; Paul & Feliciano-Cestero, 2021). This yields several advantages, including proposing explicit assumptions (Palmatier et al., 2018; Lyngdoh et al., 2021); providing transparent protocols and search process of literature (Christofi et al., 2017); summarizing extant research findings of a specific domain (Crossan & Apaydin, 2010); and indicating comprehensive propositions for future frameworks (Leonidou et al., 2020; Vrontis et al., 2020). In the context of store atmosphere, existing studies mainly follow empirical approaches to demonstrate preliminary findings (Mummalaneni, 2005; Yoon, 2013; Garaus, 2017), and we fill the gap by considering a systematic literature review as the ideal method for our research purpose. Despite extant types of review approaches with corresponding merits, we believe that a structured SLR is more appropriate to draw rich thematic knowledge than performing meta-analysis or bibliometrics reviews for quantified findings. Meanwhile, our SLR is not restricted to observe theme-, theory-, or framework-based research. Rather, we aim to provide a comprehensive overview of store atmosphere research. This inclusive and high-quality synthesis of store atmosphere research in multiple environments is showcased throughout this article, alongside suggestions for future research avenues.

## *2.1 Research questions*

The starting point in a systematic literature review is to decide on the research focus and scopes and to identify specific research questions (Domenico et al., 2021; Vrontis & Christophi, 2021). To that end, our structured systematic review aims to identify and respond to the following research questions: (1) What are the components of store atmosphere in the existing marketing and retailing literature?; (2) How do the identified store atmospheric components influence the marketing mix in alternative commerce channels (brick-and-mortar, online, mobile, 3D, virtual reality, etc.)?; and (3) How would store atmosphere literature contribute to both academic and practical marketing implications? To tackle these, we need to describe and understand how store atmosphere has changed over the years and in alternative commerce channels. From 1974, where Kotler (1974) was the first to coin the term ‘store atmosphere’ in the *Journal of Retailing* as the conscious design of buying environments, to today, where Wu et al. (2021) investigate the components of store atmosphere in 3D virtual reality stores, store atmosphere has taken many forms in different retail channels.

## *2.2 Search protocol*

We followed Paul and Feliciano-Cestero’s (2021) process to determine an appropriate search protocol through a brief content analysis on research topics related to multi-channel store atmosphere. This procedure allowed us to investigate the emerging research output and evaluate the significance of store atmosphere through reviewing most-cited publications in the domain. Instead of completing a dedicated content analysis (Vespestad & Clancy, 2021), a brief investigation on store atmosphere articles helped us to generate a holistic picture of keywords in the research area. Moreover, we started identifying and distinguishing the most relevant constructs of store atmosphere from its first publication (Kotler, 1974) to the most recent article (Schnack et al., 2021), thereby retrieving significant store atmosphere components from existing literature. The researchers then enquired the professional opinions from marketing professors in the domain (through online interview approaches) and confirmed some publications of top tier journals (i.e., Journal of Marketing, Journal of Retailing) for performing the content analysis. We reviewed 20 peer-reviewed articles published in the Chartered Association of Business Schools’ Academic Journal Guide (AJG) 2018, as verified by the same marketing professors of our contacts as abovementioned (Atewologun et al., 2017; Vrontis & Christophi, 2021). These included, for example, the *Journal of Retailing*, the *Journal of the Academy of Marketing Science*, the *Journal of Consumer Research*, the *Journal of Marketing,* and the *Journal of Business Research*.

We extracted keywords from this initial search including ‘store atmosphere’, ‘store layout’, ‘store design’, ‘online/virtual store layout’, and 16 more. Two researchers agreed on a combination of derived keywords and proceeded with searching in Web of Science (WoS) and Google Scholar databases. We focused on these two electronic databases considering existing review approaches (Domenico et al., 2021; Tueanrat et al., 2021). In sum, WoS offers rich and reliable data in terms of article citations, and Google Scholar assists in identifying additional publications that are not yet indexed on WoS. We revised and agreed on search strings ((“store atmosphere\*” OR “store design\*” OR “store layout\*” OR “store aesthetic\*” …) AND (“store atmosphere\*” OR “store design\*” OR “store layout\*” OR “store atmospheric\*” OR “store aesthetic\*”)) in the title, abstract, or keywords(Pereira et al., 2019). The initial search on WoS showed 574 results including various research domains (i.e., business, management, computer science information, etc.) and different document types (i.e., conference proceedings, book chapters, articles, reviews, etc.). Another 56 peer-reviewed articles were found on Google Scholar by searching the same 20 keywords separately. In total, 630 results regarding store atmosphere studies were available for further screening.

### *2.2.1 Inclusion criteria*

In the previous step, we did not restrict the research timeframe as we intended to gather all studies regardless of the time of publication, as suggested by Leonidou et al. (2020). Thus, search results spanned from the year of the first store atmosphere publication by Kotler (1974) to Wu et al. (2021). Furthermore, we included studies from multiple disciplines such as business, marketing, management, consumer psychology, and information science and technology. This was not only because store atmosphere has been studied in line with consumer demands, technological advances and business diversities, but also because multiple sources can derive more comprehensive interpretations in general (Domenico et al., 2021). Third, the titles, abstracts and keywords of search results on WoS and Google Scholar were screened by two researchers independently with a common inclusion criterion. We only focused on store atmosphere research in the above fields and excluded those relevant to the environmental design, architecture and infrastructure, because this literature is not relevant to our main research context (Khusainova et al., 2018). This reduced the number of studies to 385 results from WoS and 56 articles from Google Scholar. To derive the eventual dataset for the synthesis, we also looked at the exclusion criteria outlined in the following section.

### *2.2.2 Exclusion criteria*

We proceeded with further exclusion assessments of selected publications. First, in line with similar systematic literature reviews (Dada, 2018; Lyngdoh et al., 2021), we extracted only peer-reviewed journal articles, leaving aside conference proceedings, book chapters, newsletters, extended abstracts, and editorials. This process provided 293 results for further examination. Second, we only referred to English publications, meaning eight non-English papers were excluded (Follmer & Jones, 2018). This is because we aim to present knowledge acknowledged by the majority of academic outlets in which English-language publications are most predominant. Third, two researchers individually conducted the third-round screening of titles, abstracts, and keywords, while retaining only those published in the ABS 2018 journal list (Vrontis & Christofi, 2021) regardless of journal rankings. This process tightened the exclusion criteria for the remaining papers, leaving us with 170 outcomes from WoS and 30 from Google Scholar. Fourth, duplicates were excluded from the two databases, allowing a total number of 190 peer-reviewed journal articles in the ABS 2018 journal list.

Our final dataset consisted of 160 publications indexed in WoS and 30 articles from Google Scholar. It should be noted that we did not focus only on top-ranked journals such as 3 or 4\* (Mabey, 2013) because we aimed to collect rich and in-depth details of each publication related to store atmosphere. Our study is the first to systematically review this topic to draw a state-of-the-art synthesis for future contributions.

Figure 1 showcases an overview of the searching protocol and the process of extracting publications for the review.

Insert Figure 1

## *2.3 Data coding and synthesis using NVivo*

Having identified and determined the inclusion/exclusion criteria, 190 articles were found to be appropriate for further analysis. First, we extracted data and information on the chosen publications (Rose et al., 2011; Nguyen et al., 2018) from WoS and Google Scholar databases in order to obtain descriptive information (i.e., publication year, citation frequency of WoS, authors, type of paper, and data collection and analysis methods). Such information enabled us to understand the nature of existing studies, the methodological propositions, and theoretical vehicles that are adopted with relevant frequencies, so as to conduct a reliable analysis (Vrontis & Christofi, 2021). By using NVivo 12, each author led an individual coding process and agreed on a finalised pool of codes following an inductive approach. NVivo has been widely used by researchers due to the efficiency it provides in storing large qualitative datafiles, classifying different themes, displaying first- and second-order themes, and performing ‘word frequency’ analysis (Banijamali et al., 2020). Existing qualitative scholars have employed this tool for SLR purposes (Zhang & Babar, 2013; Wohlin & Aurum, 2015), praising its advantages over manual coding techniques which supported our thematic analysis.

We performed a two-step thematic coding process. The first coding stage detected broad themes, namely the study context, the article type, the ABS 2018 journal ranking, the theoretical foundation, and methodological propositions. These classifications were further assessed and clustered in the second coding process wherein more specific attributes of each dimension were identified, based on researchers’ inductive discussion and agreement. This stage was precise in labelling the codes to present accurate destinations (Domenico et al., 2021).

We finalized codes and themes as: (1) ABS 2018 journal rankings; (2) store atmosphere constructs including antecedents, mediators, moderators, and dependent variables; (3) theoretical vehicles applied in the study; (4) store atmosphere definitions; (5) data collection method; (6) data analysis method; (7) article type, including empirical and conceptual review papers; (8) research context such as online, offline, multiple retailing channel, etc.; (9) geographic distribution of the study; and (10) future research directions proposed by 3-, 4-, and 4\*-star publications (CABS) in the last 3 years. To ensure the validity of these themes, we invited two external scholars with experience in conducting systematic literature reviews in the marketing discipline to evaluate the suitability of our search protocol and finalised themes (Lincoln & Guba, 1985; Shamsollahi et al., 2020). They agreed with the NVivo analysis and the derived themes were considered representative for further interpretations. This was followed by the extraction of a comprehensive datafile to enable the analysis necessary to complete a descriptive review and synthesize findings.

# **3. Descriptive review of the literature**

The above facts notwithstanding, we first present a series of descriptive reviews of store atmosphere research, highlighting its holistic picture such as the year of publication, journal distribution in the ABS 2018 list, extant methodological propositions, geographic distribution of store atmosphere publications, and diversified research contexts of empirical works. We believe that the described reviews would enable us to observe potential research gaps from multiple dimensions.

## *3.1 The year of publications*

The very first illustration of store atmosphere was introduced by Kotler (1974), and it has been cited over 873 times in WoS indices. Since his theorization, marketing scholars started extending this research into retailing and psychology domains (Donovan & Rossiter, 1982; Bellizzi et al., 1983). Until recently, there has been a consistent number of publications related to store atmosphere under different contexts over the years. For example, 30 articles were published between 1993 and 2004. In the first few years, they mainly focused on mall and brick-and-mortar shopping environments (North & Hargreaves, 1998; Wakefield & Baker, 1998). With the introduction of e-commerce, however, more articles focused on the significance of studying store atmosphere in the e-tail environment (Eroglu et al., 2001; Menon & Kahn, 2002). From 2004 onwards, scholars have investigated different models with single or multiple atmospheric cues, drawn comparisons between online and offline commerce channels, and have provided different or enhanced definitions of store atmosphere/layout/image/equity variables. The number of publications increased rapidly with 40 studies between 2004 and 2010, and an additional 117 studies from 2010 to 2021 when this review was conducted (Figure 2). The figures show a growing interest in studying store atmospheric attributes across different domains and highlight its importance in e-commerce. This further supports the need to uncover and synthesize the relevant literature using a systematic approach.

Insert Figure 2

## *3.2 Journal distributions ranked in the ABS 2018 list*

Figure 3 presents the classification of journal articles from marketing, retailing, business, and management subjects, based on the ABS 2018 list. Observing journal classification is recommended by Vrontis and Christofi (2021), and it is suggested that different streams of journals may showcase the extent of interest in exploring store atmosphere across multiple disciplines. There were 28 studies (15%) in the 1-star category, of which 7 were published in the *International Review of Retail, Distribution and Consumer Research*. There were 75 studies (39%) from 2-star journals, of which 26 come from the *International Journal of Retail & Distribution Management* and 22 from the *Journal of Retailing and Consumer Services*. There were 59 articles (31%) in the 3-star category, with the majority published in *Computers in Human Behavior* (n=10), *Psychology & Marketing* (n=11), and the *Journal of Business Research* (n=22). The remaining 28 studies (15%) included in this review belong to the top-quality journal category of 4 and 4\*. Furthermore, we extracted 16 articles from the *Journal of Retailing*, 3 papers from the *Journal of the Academy of Marketing Science*, and 2 studies from the *International Journal of Research in Marketing*. The remaining top-quality journals were the *Journal of Marketing* (n=1), *Information Systems Research* (n=1), *Tourism Management* (n=1), *Management Science* (n=1), and others (n=3). These figures indicate that most store atmosphere research is conducted in the retailing and marketing outlets, extant scholars value the performance and development of retailing practices based on store atmosphere dynamics. Meanwhile, it is noteworthy that store atmosphere research entails interdisciplinary domains across psychology, marketing, management and information systems.

Insert Figure 3

## *3.3 Methodological propositions*

Among our review sample, 21 articles were conceptual/theoretical papers, and the rest were empirical studies (n=169). According to Vrontis and Christofi (2021), it is reasonable to identify a lower number of conceptual/theoretical articles as most publications fall in the empirical category. Further examination of the 169 empirical studies focused on the specific data collection method used (Table 1): 4.2% followed the case study approach; 11.2% chose qualitative interviews; 37.9% employed experiment designs; 40.8% adopted the survey method of data collection; and the remaining 5.9% applied other methods such as structured observation (Hulten, 2012), third-party data generation (Lee & Park, 2010), and mixed-methods (Krasonikolakis et al., 2018). Here, a surprising observation is that there are very few mixed-method research design in our review sample. This suggests that existing research scarcely adopts this method in examining store atmosphere implications. As mentioned above, extant store atmosphere research primarily adopts quantitative approaches, including experiments and surveys, while a small number of studies select qualitative interviews and case studies. Taken together, this descriptive synthesis implies an necessarily need to examine store atmosphere performance through mixed-method research designs.

In addition, the structured equation modelling (SEM) was popular (n=59) regardless of whether the authors applied PLS-SEM (Ong et al., 2018) or covariance-based SEM (Hsieh et al., 2021). Adoptions of ANOVA (n=35) and regression analysis (n=24) were also popular in the review sample, as many studies tested the correlational relationships between different constructs and compared the group differences. Surveys and SEM were the most popular methodological approaches in store atmosphere research, and there were only a small number of qualitative analysis techniques (content/thematic analysis, n=8), whereas no longitudinal analysis was included in our review sample. We further identified that most store atmosphere research published in the good rankings of the ABS 2018 journal list (i.e., 3, 4, and 4\*) employed quantitative strategies (Menon & Kahn, 2002; Davis et al., 2008; Wang et al., 2011), while most of the qualitative studies in our review sample were from 1- and 2-star journals (Ballantine et al., 2015; Lindberg et al., 2018; Bhatt et al., 2020). Such an imbalanced distribution of research strategy may be a useful insight for journal editors who are considering whether there is a need to encourage qualitative research in the future.

Insert Table 1

## *3.4 Geographic distribution*

The results of our review address the continental distribution of the empirical articles we identified (Figure 4), in line with other similar systematic literature review studies (Leonidou et al., 2020). We did not present the number of studies corresponding to individual countries as the dataset involved many. Rather, we labelled the continental allocations in the coding procedure and found that the majority of studies were carried out in Asia and the Pacific (41%), followed by Europe (31%). In the same vein, 26% of extracted research came from scholars based in the Americans (including South American states), and only 2% of studies were developed in African countries. Thus, Asia-based scholars show a considerable research interest in studying store atmosphere, while those based in Africa make up only a small percentage of the review sample.

We additionally screened each output from American scholars, identifying that most studies of this classification opted for convenient sampling methods by recruiting local university and graduate students to participate in the studies. This does not indicate any significant theoretical reasoning or cultural preferences for the under-explored SA research from American contexts compared with those of Asia and the Pacific. Hence, this is an open issue that scholars need to explore further.

A further opportunity for future research would be to look into less developed countries and areas – both theoretically and empirically – where consumers, retailers, and industries may perceive store atmosphere differently. For instance, as shown in Figure 4, the researchers encourage the exploration of retailing contexts in African marketplaces to see how the same SA cues influence retailing performance and consumer behaviors across multiple commerce channels.

Insert Figure 4

## *3.5 Research contexts of review sample*

We also considered the research contexts of sample studies in the coding stage, which enhanced the richness of the data interpretation. Figure 5 shows the number of SA-focused studies focusing on different commerce channels. Both older and more recent studies place emphasis on signifying store atmosphere in traditional offline environments (n=67) including grocery stores (Carpenter & Moore, 2006), brick-and-mortar retail stores (Naletelich & Paswan, 2018), supermarkets (Altuntas, 2017), and shopping centers (Lucia-Palacios et al., 2018). It is noteworthy that studies published in the early 2000s focused on investigating the electronic retailing (‘e-tailing’) contexts (n=57), primarily due to technology advances and shopping channel extensions.

Furthermore, we coded 3D and virtual (n=14) as separate study contexts because recent scholars develop and manipulate the virtual store experience to identify consumer demands (Wu et al., 2015; Krasonikolakis, et al., 2018; Wu et al., 2021). There were also 9 articles which studied multiple shopping channels. Similarly, the mobile commerce channel has been studied in relation to store atmosphere (n=4). Due to the small number of studies on this compared to those on the adoption and development of mobile commerce, future research may investigate how mobile applications support store atmosphere in more depth.

Last but not least, the data extraction also revealed 2 studies on restaurant atmosphere (n=1) (Kaminakis et al., 2019) and site atmosphere on online tourism (n=1) (Gao & Bai, 2014). Given that the current synthesis addresses store atmospheric factors in alternative retail commerce channels, the hospitality industries are not necessarily clarified in depth.

Insert Figure 5

# **4. Thematic analysis of sample reviews**

We use thematic analysis to offer a holistic overview of store atmosphere, in order to identify important theoretical dimensions and discuss promising directions for future research. Moreover, we derive distinct themes through synthesizing full texts of 190 peer-reviewed articles, namely: (1) defining store atmosphere; (2) emerging constructs related to store atmosphere studies; and (3) theoretical foundations adopted in extant store atmosphere research. The rationale of denoting these themes is that because store atmosphere definitions are developed in line with extended commerce channels, it is fundamental to illustrate and distinguish store atmospheric cues. Moreover, most empirical store atmosphere research concentrates on investigating various store atmospheric elements and performance. Therefore, we highlight existing store atmosphere constructs and their frequency in our review sample. Finally, theoretical vehicles of store atmosphere research should be presented to shape certain essential theories across different disciplines while suggesting any under-explored ones as directions for future research (Domenico et al., 2021).

## *4.1 Defining store atmosphere*

The original definition of store atmosphere was coined by Kotler (1974), whose work has been referred to extensively in the literature. Since then, however, there has been an array of extended definitions, comprising the different dimensions of store atmosphere (Table 2). For instance, Kotler (1974) summarized sensory, visual, aural, olfactory, and tactile dimensions of store atmosphere, taking into consideration the multiple elements of an experience in a physical store. Building on this, Donovan and Rossiter (1982) integrated environmental psychology (Russell & Mehrabian, 1977) into store atmosphere, exploring store-induced pleasure, arousal, and dominance behaviors (Donovan et al., 1994). Baker et al. (1994, 2002) classified store atmosphere into three dimensions – namely, design factors (environmental elements that are more visual, functional, and/or aesthetic in nature), social factors (the number, type, and behavior of other customers and employees), and ambient factors (temperature, lighting, music, and scent) which influence consumer buying behavior under different conditions. Meanwhile, Turley and Milliman (2000) studied store atmosphere from facility-based environment cues, indicating five forms of atmosphere: the exterior of the store; the general interior; the layout and design; the point of purchase and decoration variables; and especially human variables encompassing customers, employees, in-store crowding, and privacy issues.

It was not until the 2000s that online retailing made its appearance, and marketing scholars started examining web-based store atmosphere. Eroglu et al. (2001) adopted the Stimulus-Organism-Response (SOR) framework by Mehrabian and Russell (1974), grouping virtual stores into high task-relevant environments (where all the site descriptors appear on the screen, thus enabling shopping achievement) and low task-relevant environments (where site information is inconsequential to the completion of the shopping task). Dailey (2004, p. 796) further demonstrated web atmosphere as ‘the conscious designing of web environments to create positive effects (e.g., positive affect, positive cognitions etc.) in users in order to increase favourable consumer responses (e.g., site revisiting, browsing etc.)’.

A great number of scholars have offered diverse definitions of web-based and virtual store atmosphere in the past two decades. Nevertheless, existing publications have concluded that e-store layout, design, and atmosphere (Vrechopoulos et al., 2004; Manganari et al., 2009), website navigation (Floh & Madlberger, 2013), and presence of information (Oh et al., 2008) are essential components of web store atmospheres. Wu et al. (2021) recently defined the state-of-the-art store atmospheric categories in personalizing 3D virtual shopping contexts: pathfinding assistance, environment, and the manner of product presentation.

Insert Table 2

Table 3 presents the most-examined SA-related variables of our review sample that contribute to a comprehensive understanding of the components of store atmosphere. Store layout has received considerable attention (n=21) due to the direct influence on store performance and, in turn, consumers’ purchase behavior (Vrechopoulos et al., 2004; Griffith, 2005; Page et al., 2019). Store ambient cues (e.g., music, lighting, color, and scent) have been studied frequently (n=17) since these elements drive consumers’ moods, emotions, and responses (Baker et al., 1994; Spangenberg et al., 2006; Mari & Poggesi, 2013). 17 studies delineated e-commerce website designs and mainly discussed displays of product information and how virtual store design facilitated consumers’ decision-making processes (Fiore et al., 2005; Lo et al., 2016). In addition, store aesthetics (n=14) were central in shaping web-based store atmosphere as consumers were more drawn to well-presented stores (Chang et al., 2014; Groß, 2016). It was also found that consumers respond more actively to artistic web stores which stimulate their purchase desires.

Store image was denoted (n=12) in differentiating stores’ uniqueness (Schiffman & Kanuk, 2007) across multiple channels (Verhagen & van Dolen, 2009). Moreover, store design (n=10) – including architecture and decoration – was perceived as a tangible component (Backstrom & Johansson, 2006) with the capacity to trigger customers’ emotional and cognitive experiences (Meyer, 2006). In addition, a number of articles in the review sample evaluated ‘servicescape’ (n=10) under the umbrella of store atmosphere by looking at how ambient conditions, spatial layout, and functionality, as well as signs, symbols, and artefacts, influenced both consumers’ and employees’ behaviors (Bitner, 1990). In a similar vein, store attributes have attracted scholars’ interest (n=8) as they are seen as the primary drivers of consumers’ retail choices, satisfaction, and loyalty (Baker et al., 2002; Grewal et al., 2003; Nair & Shams, 2020). ‘Color’ (n=5) and ‘flow’ (n=4) also appear as essential components of store atmosphere.

Indeed, existing publications have largely researched store atmosphere, and investigated store layout, design, attribute, and image. Table 3 highlights some important constructs. Aesthetic and ambient cues also shape store atmospheric elements across multiple commerce channels, including brick-and-mortar, online, virtual, and mobile contexts. An overview of SA-relevant constructs further enabled us to categorize different types of independent, mediator, moderator, and dependent variables in the following section.

Insert Table 3

## *4.2 Emerging constructs in store atmosphere research*

Following in the footsteps of Lyngdoh et al. (2020), we provide a comprehensive overview of specific constructs applied in empirical studies (Figure 6), shedding light on multiple variables categorized into distinctive dimensions such as store-driven, customer-driven, service-driven, emotional, behavioral, psychological, and other factors. Furthermore, we address the number of times each construct has been investigated as an antecedent, mediator, moderator, and consequence variable in our review sample (n=190). We revisited each study in the review sample twice and coded their distinct constructs by identifying each individual research model, framework, and variable. The first-round review enabled us to note a series of store atmospheric elements and constructs, and the second-round screening further grouped the underlying store atmosphere variables into different dimensions such as store-driven, service-driven, customer-driven and product-driven factors. To summarize this, Figure 6 exhibits both the most and least studied store atmospheric constructs.

Insert Figure 6

### *4.2.1 Antecedents in the review sample*

We begin with a discussion on antecedents in store atmosphere research. Store atmospheric cues (53), store layout (30), store ambient cues (29), and website design (29) are the most popular constructs for scholars to examine SA’s impact on retailing performance in diverse contexts. Looking at store atmosphere, it entails the examination of particular emotional and behavioral dynamics that influence consumers upon entering the store (Koo et al., 2014; Yoon, 2013; Lucia-Palacios et al., 2018). Store ambient cues (29) are important elements for consumers to experience a satisfying shopping journey as color, brightness, music, scent, and lighting can contribute to a positive shopping mood (Chebat & Michon, 2003; Naletelich & Paswan, 2018; Sarkar et al., 2019). The thematic coding that we follow reveals common store-driven antecedents, namely store aesthetic cues (12), store image (8), store attributes (6), and store visual cues (6).

We further grouped antecedents into service-, customer-, staff-, or product-driven constructs, as well as some other categories. Although these constructs are not explicit in describing store atmosphere, analyzing them provides a comprehensive picture of store atmosphere research. For instance, according to Turley and Milliman (2000), human factors can foster distinct store atmosphere, thus confirming our decision to group together customer- and staff-driven constructs. The servicescape is another pivotal dimension that cannot be ignored in studying SA (Newman, 2007; Kaminakis et al., 2019), as consumers value it when assessing their overall store experience. It is established knowledge that product assortments and quality direct purchases (Tafesse & Korneliussen, 2019) and drive loyalty (Molina et al., 2009). When revisiting the literature, we confirmed that store atmosphere was not examined as a single entity. Rather, research often combined multiple factors relevant to SA to shed light on a series of more comprehensive implications (Krasonikolakis et al., 2014; Helmefalk & Hulten, 2017; Hsieh et al., 2021). Other antecedents were under-explored, suggesting future scholars should extend store atmosphere studies to examine additional constructs across different contexts.

### *4.2.2 Existing mediators and moderators in store atmosphere research*

Consumer emotional dynamics such as pleasure (12), arousal (11), and perceived enjoyment (5) are the most adopted mediators in our review sample. This approach is based on environmental psychology theory (Mehrabian & Russell, 1974), wherein individual affective states are driven by environmental influences (Russell & Pratt, 1980). Moreover, existing studies on store atmosphere apply the pleasure-arousal-dominance (PAD) model to investigate consumers’ emotional response to store atmospheric cues (Babin & Darden, 1995; Chebat & Michon, 2003; Raja et al., 2019). These studies also consider pleasure and arousal as mediators in predicting the associations between store atmosphere and behavioral responses. Similarly, psychological characteristics such as affective state (3), impulsiveness (1), perceived risk (1), and self-confidence (1) serve as mediators in examining the relationship between web-based store design and purchase outcomes (Eroglu et al., 2001; Eroglu et al., 2003; Lorenzo et al., 2007; Floh & Madlberger, 2013). Apart from emotional and psychological constructs, store-driven factors also impact consumers’ response variables. Indeed, store atmosphere (6), aesthetic cues (2), and store image (2) are frequently discussed in predicting the association between environmental stimulus, store patronage (Grewal et al., 2003), and entertainment gratification (Lee & Kim, 2019). In the same vein, ‘flow’ has emerged as a mediator when studying consumer satisfaction (Sina & Wu, 2019) and online purchase intention (Gao & Bai, 2014; Aboubaker Ettis, 2017). Consumers’ flow experience is heavily observed in the domain of online shopping (Koufaris, 2002), wherein a convenient, compelling and interactive online store atmosphere provides a positive flow experience (Aboubaker Ettis, 2017). The remaining mediators, although they provide new insights, have been less researched and lack scholarly engagement.

Our review also detects a list of moderating effects, as shown in Figure 6. First, demographic features are used to define specific consumer segments (Boutsouki, 2019) in terms of gender (7), age (4), education (2), and income (1). Second, store-driven factors such as atmospheric cues (4), store design (1), and store type (1) delineate distinct interaction effects between store atmosphere and website shopping outcomes (Eroglu et al., 2003; Manganari et al., 2009). Third, consumer psychological cues – including motivational constructs (3), curiosity (1), enjoyment (1), and induced relaxation (1) – moderate the interactions between store aesthetic perception and emotional states (Deng & Poole, 2010; Kim et al., 2020; Roux et al., 2020). Fourth, product category (2) and price consciousness (1) moderate store atmospheric cues and online impulse buying (Sarah et al., 2021) as well as emotional responses (Cheng et al., 2009). Fifth, the cultural characteristics lead to distinct interaction effects between antecedents and consequences. For instance, cultural characteristics (2), shopping contexts (2), country (1), and service context (1) serve as moderating variables in the cross-cultural literature (Barros et al., 2019; Cheng et al., 2019). This hints at a future research call to examine different moderation effects, taking into account less-researched variables.

### *4.2.3 Outcome constructs in store atmosphere research*

The last construct category in Figure 6 displays an inclusive list of outcome-based variables in our review. Here, we present the most important outcome variables: purchase intention (26), approach/avoidance behavior (20), retail/store patronage (18), arousal (17), pleasure (17), satisfaction (17), attitude (13), time spent in store (11), behavioral intention (10), and loyalty (10). Based on the SOR framework and the PAD model, store atmosphere attributes influence consumer emotional states, causing the consumer to respond with distinctive behavior and purchase decisions.

First and foremost, we reveal that antecedent store atmospheric cues and meditating variables predict a variety of store-driven outcomes such as store patronage (18), store revisits (6), store image (4), and store format (2). For instance, store atmosphere plays a significant role in predicting the reuse of mobile shopping apps (Lee & Kim, 2019) and the intention to revisit websites (Kim et al., 2015). Second, we consider consumers’ psychological states as the first-stage outcome variable driven by store atmosphere elements, including attitudinal (13) and emotional (49) perspectives. Second-stage outcomes are a result of distinct store atmosphere antecedents, known as behavioral, purchase-driven, and consumer-driven outcome variables. Furthermore, positive emotions generated in the previous stage will lead to purchase intentions (Fiore et al., 2000; Ou & Sia, 2010; Wang et al., 2011; Koo et al., 2014). Meanwhile, consumers will determine whether to approach or avoid visiting stores (Eroglu et al., 2001), or using websites (Liang & Lai, 2002), given their evaluations of store atmospheric cues. Consequently, consumers who are end-users of store atmospheres will develop satisfaction (Davis et al., 2008; Roschk et al., 2017) and establish loyalty towards retail stores (Yun & Good, 2007; Murray et al., 2017).

Finally, a large set of outcome variables of previous store atmosphere research was only briefly examined, meaning future researchers should consider employing multiple consequence constructs to expand knowledge across retailing, business, management, psychology, and information system domains.

## *4.3 Theoretical vehicles in store atmosphere research*

With regards to the theoretical foundations of store atmosphere research, we summarized a wide variety of theories employed in multiple disciplines. The SOR (n=50), Technology Acceptance Model (n=30), and PAD (n=16) frameworks are heavily discussed in the review sample. Both SOR and PAD models (Mehrabian & Russell, 1974) are drawn from the environmental psychology theory which studies store environment and atmospheric implications in retailing (Eroglu et al., 2001; Jang & Namkung, 2009; Patel et al., 2020).

According to these theories, store environment influences an individual’s emotional state. Diverse store environments (e.g., in terms of atmosphere, image, layout, design, aesthetics, and ambient cues) trigger a wide array of emotional responses in visitors. To that end, Machleit and Eroglu (2000) found that a person’s emotions can change between different shopping environments because of their varied expectations. Mehrabian and Russell (1974) specified three types of emotional states in the organism dimension of the SOR model, abbreviated as PAD: ‘pleasure (the degree to which a person feels happy or satisfied in a place), arousal (the degree of stimulation caused by an atmosphere), and dominance (the degree to which a person feels that she has influence over surroundings and is in control of a situation)’ (Porat & Tractinsky, 2012, p. 240). In terms of response formats, consumer reactions can be physically, verbally, or nonverbally expressed when approaching or avoiding certain store environments (Richard, 2005; Porat & Tractinsky, 2012; Wu et al., 2014). In line with the previous section, which outlined the critical constructs of store atmosphere research, we posit those emotional states (primarily pleasure, arousal, and dominance) act as essential mediators when evaluating store atmosphere and shopping behaviors.

Furthermore, we observe that 30 empirical studies in our review sample applied TAM as their theoretical vehicle. In TAM (Davis, 1989), perceived usefulness and ease of use are drivers of users’ attitudinal and behavioral intention in adopting new technology. Previous scholars have extended and applied this model across multiple disciplines such as information systems, business, and retailing (Li & Yeh, 2010; Visinescu et al., 2015). Perceived usefulness and ease of use are crucial elements that affect the value assigned to new technologies by consumers. In our synthesis, these elements are considered as outcomes of store layout and web aesthetics (Vrechopoulos & Atherinos, 2009). Therefore, TAM can be used to capture consumers’ evaluation of store atmosphere and design cues in e-tail.

Figure 7 shows a list of other theoretical grounds employed only once in our review sample. We found that the majority of the theories fall into the psychology (e.g., attachment theory (Bowlby, 1979; Badrinarayanan & Becerra, 2019), the emotional contagion theory (Hatfield et al., 1994; Otterbring, 2017), the grounded cognition theory (Barsalou, 2008; Baek et al., 2018), the motivational theory (Berlyne, 1960; Garaus, 2017), TPB (Ajzen, 1985; Campbell & Fairhust, 2016), TRA (Ajzen & Fishbein, 1980; Badrinarayanan et al., 2014)) and information systems (e.g., EKB model (Lo et al., 2016)) domains. Store atmosphere research in the e-tailing sphere has gained significant attention, as academics study consumers’ psychological and behavioral responses in alternative commerce channels. With continuing advances in technology, more research opportunities on store atmosphere are expected to emerge over time. This suggests that scholars may wish to apply some of these theories for interdisciplinary projects to store atmosphere studies in the future.

Insert Figure 7

# **5. Implications and future research directions derived from the Systematic Literature Review**

## *5.1 An integrative framework*

This section provides an integrative framework derived from our critical synthesis, wherein we incorporate distinctive store atmosphere factors under the umbrella of the consumer decision-making process (Figure 8). The framework was inspired by the traditional decision-making model (Kolter & Keller, 2012) and we explored three particular purchase stages given the development of commerce channels. Channel-specific segmentation helps to address the commerce channel extensions, as posited earlier, and extant store atmosphere research also sheds light on consumer behavioral variances when exposed to different commerce scenarios (Mummalaneni, 2005; Blanco et al., 2010; Vrechopoulos et al., 2009). Thus, we first categorised three main spheres of commerce channels including brick-and-mortar, electronic, and 3D and virtual retail stores. This is because technological advances and consumer demands have enriched the diversity of channels alongside the introduction of the ‘Internet of Things’ and smart devices (Lee & Kim, 2019). We assert that store atmosphere research similarly embraces this diversity, as highlighted by our review sample (Loureiro & Roschk, 2014; Lombart et al., 2020).

Second, we referred to three purchase stages since each stage might derive different elements of store atmosphere factors. For instance, consumers are likely to evaluate mall image, store ambient cues, servicescapes, and e-store backgrounds before making purchases in physical and website store visits. When visiting a 3D or virtual store, consumers consider store trust, virtual store design, and VR convenience as essential HCI elements. During the purchasing stages, diversified store atmosphere factors also influence consumers’ attitudinal/behavioral dynamics. In-store consumers particularly evaluate the waiting time, service quality, store intimacy, and flow, while e-tailing consumers pay attention to the website’s perceived usefulness and ease of use. Meanwhile, 3D shop visitors will likely consider gamification, technology, and virtual store appearance. Multiple store atmosphere factors similarly facilitate post-purchase enquiries. Here, in-store consumers may observe store impression, customer–staff rapport, and store attachment as critical judgements in shaping their purchase experience. E-tailing users, on the other hand, might revisit or search for alternative websites based on the site’s navigational performance, while virtual store consumers may assess customization and perceived risk after purchases.

We further identified common store atmosphere factors across three commerce channels in each purchase stage, which were derived from our systematic reviews and our categorization of emerging store atmosphere constructs. These are shown in diamond boxes in Figure 8, and highlight that store atmospheric cues, store layout, store aesthetics, and a positive store experience are the main drivers before choosing in a brick-and-mortar or online store.

Store uniqueness and website interface are critical antecedents before visiting e-tail or virtual stores. During the purchasing stage in both online and offline stores, consumers often consider the store design, convenience, and product display. In addition, both e-tail and virtual store consumers consider telepresence, site involvement, and online security/privacy as the main evaluation criteria during purchases. Moreover, store patronage and revisits are dominant store atmosphere factors after a purchase has been made, both in store and online. However, for some e-tail and virtual store consumers, continuous usage intention and online shopping enjoyment seem to be important observations after their purchases.

Third, we drew consumer psychological factors at each purchase stage, as shown at the bottom of the integrative framework. We hold that individual psychological drivers in line with store atmosphere factors would influence consumers’ attitudinal/behavioral responses given that commerce channels vary. For instance, a utilitarian or hedonic shopping purpose, high or low task cues, and other social factors may stimulate various concerns before purchases. Consumers’ emotional appeal is further dominated by PAD (Mehrabian & Russell, 1974), which highlights that delight and induced relaxation also impact behaviors during the purchasing stage. Apart from critical store atmosphere factors, we strongly believe that these individual psychological dynamics cannot be neglected during this experience – regardless of commerce channels. It is common for consumers to evaluate their purchase experience across different channels after a purchase has been made, and PAD, satisfaction, loyalty, and trust/distrust form significant parts of this assessment.

Insert Figure 8

## *5.2 Critical synthesis indicating future store atmosphere research*

First, there has been a promising trend in the study of store atmosphere since the early 2000s wherein technological advances have encouraged the adoption of e-tailing websites and multi-channel shopping experiences by the field (Richard, 2005; Gounaris et al., 2010). Not only did scholars look at these uses of new technology, but they also concentrated on exploring consumers’ emotional and psychological responses and the ways in which these affect purchase behavior (Spies et al., 1997; Ha & Lennon, 2010; Krasonikolakis et al., 2018). Based on SOR and PAD models, scholars have extended store atmosphere research beyond the conventional offline channel to include internet/electronic retailing and web-based and virtual stores, highlighting the significance that store atmosphere bears for practitioners (Tractinsky & Lowengrat, 2007). The environmental psychology theories notably contribute to our understanding of various constructs relevant to store atmosphere. For instance, Deng and Poole (2010) showed how the visual complexity of a web page is an antecedent that results in arousal and pleasure in people’s online shopping behaviors. Hsieh et al. (2021) recently examined personalization, aesthetic design, and entertainment and found that they affected consumers’ usage intentions of branded apps. These studies highlight a growing interest in researching store atmosphere, and future consumer-centric research should continuously investigate atmospheric, ambient, aesthetic, design, and social cues of store attributes in enhancing consumers’ purchasing experiences. In the same vein, we argue that B2B scholars may investigate SA from organizational perspectives since previous store atmosphere research has predominantly offered B2C insights.

Second, our review observed a considerable amount of empirical store atmosphere articles embracing different methods of data collection and analysis (Table 1). Prior quantitative researchers mainly employed SEM and regression analysis in our empirical review sample, and fewer recent studies adopted a content/thematic analysis method (Loupiac & Goudey, 2020; Wu et al., 2021). A promising call for future research on store atmosphere lies in employing other research methods such as mixed-method, longitudinal, web analytics, and potential secondary data collection to increase the dimensions of findings. It is anticipated that multiple research methods in one study will deliver more fruitful results. Furthermore, scholars may undertake cross-cultural store atmosphere research through a mixed-method design to provide insightful, well-rounded contributions.

The substantial volume of store atmosphere research remained constricted around SOR, PAD, and TAM models as theoretical vehicles. Given that we recognized the dominant theories falling into psychology and IS schools (Figure 7), an overarching theory of store atmosphere in retailing or marketing is needed. Despite existing psychological theories which enable scholars to examine store atmosphere in various contexts, most research could reflect consumer insights and behaviors and contribute to marketing theory development. Thus, there should be more theory development, and future conceptual articles should develop and validate more marketing theories in understanding store atmosphere. At the same time, future scholars should consider incorporating multiple emerging store atmosphere constructs (Figure 6) by using various theories in one comprehensive study. We believe this will not only improve theories but also provide valuable managerial advice.

## *5.3 Future research directions proposed by recent store atmosphere literature*

In our synthesis process, we observed existing gaps in the store atmosphere literature and identified the need for more research related to store atmospheric cues and consumer experience in multiple contexts. Figure 9 showcases an overview of the future research directions recommended by high-quality publications (noted as 3, 4, and 4\* in the ABS 2018 list) in the past three years.

Insert Figure 9

# **6. Conclusions, implications, and future research directions**

## *6.1 Theoretical and practical contributions*

Building on the integrative framework, this systematic literature review provides a comprehensive overview of store atmosphere in consumer behavior. Through identifying previous outcomes and calls for future research, we offer insightful contributions on theoretical and practical aspects. First, this is the first structured systematic review on store atmosphere across multiple disciplines with regards to relevant theories, methodologies, and constructs since SA’s pioneer definition. A systematic literature review enables future empirical researchers to position more insightful constructs through distinct theory application and methodological proposition (Domenico et al., 2021). Second, our synthesis reveals certain knowledge gaps that scholars could pursue further. For instance, extant store atmosphere research adopted psychological theories in empirical studies, and marketing and retailing researchers should shed more light on marketing or consumer-driven theories for richer insights. Third, we believe that more studies should be carried out to refine store atmospherein newly established commerce channels, such as mobile, 3D, virtual, and augmented reality retailing. Fourth, our SLR has identified emerging constructs in store atmosphere research, and we believe that future empirical researchers could test different combinations of antecedent, mediating, moderating, and outcome variables related to store atmosphere. More importantly, we delineate a comprehensive framework of store atmosphere research, reshaping the consumer decision-making process across three distinctive commerce channels.

This review also provides substantial insights for practitioners in business, management, and marketing fields. First and foremost, our study highlights the significance of store attributes (e.g., atmospherics, aesthetics, ambient cues, design, layout, social factors, etc.) in affecting store visitors’ emotional responses, satisfaction, and behavioral dynamics. Marketing practitioners should consistently take into account the optimization of store atmosphere and user experience to boost retail store patronage and purchase intentions. Second, we offer understandings for policymakers in determining the appropriate atmospherics under different retail contexts. Retailers may refer to the outstanding atmospheric cues across different commercial channels for enhancing consumer engagement, for instance, by optimizing virtual aesthetic elements for the purpose of engaging online store visitors. To this end, technological advances continuously stimulate diversified store experiences. Furthermore, based on our integrative framework, we strongly argue that commercial organizations should accommodate consumers’ psychological appeals imposed by store atmosphere factors at corresponding purchase stages. This review particularly outlines consumers’ emotional conditions in responding to diverse store formats and store atmosphere, hence, consumers’ approaching or avoidance reactions should be noted and accommodated by marketers. Our review enables practitioners to consider appropriate store atmosphere antecedents, refine store design, and adjust marketing strategies to attract more sales-driven performance.

## *6.2 Conclusion and limitations*

The current systematic literature review on store atmosphere constructively reviews 190 peer-reviewed publications. In particular, we present emerging contributions in multiple disciplines and indicate calls for future research. Given the more-than-30-year scope of our review sample, we acknowledge the increasing necessity of investigating store atmosphere and corresponding outcomes. Much has already been achieved in highlighting different forms of store types, store attributes and subsequential consumer behaviors in responding to environmental differences. Nevertheless, there are serious research gaps. Not only is there a need to delineate theoretical contributions, but we also expect practitioners to adopt our integrative framework in repositioning their marketing strategy.

This review, as with any other systematic literature reivew, exhibits some limitations that should be recognized. First, our SLR only extracted articles through WoS and Google Scholar databases, which may have omitted relevant store atmosphere research. Second, unlike Mandler et al.’s (2021) exclusion of meta-analysis articles in their SLR, we included 4 meta-analysis studies, which may have caused some duplication of findings. However, in spite of these limitations, we believe that our rigorous review can capture the state-of-the-art literature on emerging theoretical propositions of store atmosphere in multiple disciplines through structured and critical searching protocol. To conclude, this study has demonstrated the fruitful nature of store atmosphere research through its analysis and compilation of relevant methodological, theoretical, and contextual knowledge.

*Note 1: search strings on Web of Science*

*TS= ((“store atmosphere\*” OR “store design\*” OR “interface design\*” OR “store layout\*” OR “shop environment\*” OR “store environment\*” OR “online store atmosphere\*” OR “brick and mortar store atmosphere\*” OR “virtual store atmosphere\*” OR “virtual store layout\*” OR “physical store atmosphere\*” OR “virtual store design\*” OR “internet store atmosphere\*” OR “electronic store design\*” OR “3D store atmosphere\*” OR “3D store design\*” OR “3D store layout\*” OR “retail store design\*” OR “website design feature\*” OR “offline store atmosphere\*” OR “virtual shopping environment\*” OR “web shopping environment\*” OR “store aesthetic\*” OR “aesthetic appeal\*” OR “web aesthetic\*” OR “aesthetic formality\*” OR “site aesthetics\*” OR “servicescape\*” OR “atmospheric cues\*” OR “retail website design\*” OR “store image\*” OR “online store layout\*” OR “web environment\*” OR “shopping atmosphere\*” OR “in-store shopping atmosphere\*” OR “store atmospheric stimuli\*”) AND (“store atmosphere\*” OR “store design\*” OR “store layout\*” OR “store atmospheric\*” OR “store aesthetic\*”))*

**References**

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

Ajzen, I. (1985). From intentions to actions: a theory of planned behaviour. In Kuhl, J. and Beckmann, J. (Eds.), *Action-Control: From Cognition to Behaviour* (pp. 11–39). Heidelberg: Springer.

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Behavior*. Prentice Hall, New Jersey.

Altuntas, S. (2017). A novel approach based on utility mining for store layout: A case study in a supermarket. *Industrial Management & Data Systems*, *117*(2), 304–319.

Atewologun, D., Kutzer, R., Doldor, E., Anderson, D., & Sealy, R. (2017). Individual-level foci of identification at work: A systematic review of the literature. *International Journal of Management Reviews*, *19*(3), 273–295.

Babin, B. J., & Darden, W. R. (1995). Consumer self-regulation in a retail environment. *Journal of Retailing*, *71*(1), 47–70.

Backstrom, K., & Johansson, U. (2006). Creating and consuming experiences in retail store environments: Comparing retailer and consumer perspectives. *Journal of Retailing and Consumer Services*, *13*(6), 417– 430.

Badrinarayanan, V., & Becerra, E. P. (2019). Shoppers’ attachment with retail stores: Antecedents and impact on patronage intentions. *Journal of Retailing and Consumer Services*, 371–378.

Baek, E., Choo, H. J., Oh, H., & Yoon, S-Y. (2018). How consumers ‘see’ a visually warm store: Differences between affective and cognitive processors. *Journal of Consumer Behavior*, *17*, 149–160.

Baker, J., Parasuraman, A. P., & Grewal, D. (1994). The influence of store environment on quality inferences and store image. *Journal of the Academy of Marketing Science*, *22*(4), 328–339.

Baker, J., Parasuraman, A. P., Grewal, D., & Voss, G. B. (2002). The influence of multiple store environment cues on perceived merchandise value and patronage intentions. *Journal of Marketing*, *66*, 120-141.

Ballantine, P. W., Parsons, A., & Comeskey, K. (2015). A conceptual model of the holistic effects of atmospheric cues in fashion retailing. *International Journal of Retail & Distribution Management*, *43*(6), 503–517.

Banijamali, A., Pakanen, O-P., Kuvaja, P., & Oivo, M. (2020). Software architectures of the convergence of cloud computing and the Internet of Things: A systematic literature review. *Information and Software Technology*, *122*, 106271.

Barros, L. B. L., Petroll, M. M., Damacena, C., & Knoppe, M. (2019). Store atmosphere and impulse: A cross-cultural study. *International Journal of Retail and Distribution Management*, *47*(8), 817–835.

Barsalou, L. W. (2008). Grounded cognition. *Annual Review of Psychology*, *59*, 617–645.

Bellizzi, J. A., Crowley, A. E., & Hasty, R. W. (1983). The effects of color in store design. *Journal of Retailing*, *59*(1), 21–45.

Berlyne, D. E. (1960). *Conﬂict, Arousal, and Curiosity*. New York, NY: McGraw-Hill.

Berman, B., & Evans, J. R. (1995*). Retail Management: A Strategic Approach* (6th ed.). Englewood Cliffs, NJ: Prentice-Hall, Inc.

Bhatt, G., Sarkar, A., & Sarkar, J. G. (2020). Attractive and facilitating store atmospheric stimuli – Validating the scales. *International Journal of Retail & Distribution Management, 48*(4), 363–379.

Bitner, M. J. (1990). Evaluating service encounters: The effects of physical surroundings and employee responses*. Journal of Marketing*, *54*, 69–82.

Blanco, C. F., Sarasa, R. G., & Sanclemente, C. O. (2010). Effects of visual and textual information in online product presentations: Looking for the best combination in website design. *European Journal of Information Systems*, *19*(6), 668–686.

Boutsouki, C. (2019). Impulse behavior in economic crisis: A data driven marketing segmentation. *International Journal of Retail and Distribution Management*, *47*(9), 974–996.

Bowlby, J. (1979). On knowing what you are not supposed to know and feeling what you are not supposed to feel. *The Canadian Journal of Psychiatry*, *24*(5), 403–408.

Brocato, E.D., Baker, J. and Voorhees, C.M. (2015). Creating consumer attachment to retail service firms through sense of place. *Journal of the Academy of Marketing Science*, *43*(2), 200–220.

Campbell, J. M., & Fairhurst, A. E. (2016). Reducing the intention-to-behaviour gap for locally produced foods purchasing – The role of store, trust, and price. *International Journal of Retail and Distribution Management*, *44*(5), 508–523.

Carpenter, J. M., & Moore, M. (2006). Consumer demographics, store attributes, and retail format choice in the US grocery market. *International Journal of Retail & Distribution Management*, *34*(6), 434–452.

Chang, S-H., Chih, W-H., Liou, D-K., & Hwang, L-R., (2014). The influence of web aesthetics on customers’ PAD. *Computers in Human Behavior*, *36*, 168–178.

Chebat, J-C., & Michon, R. (2003). Impact of ambient odors on mall shoppers’ emotions, cognitions, and spending – A test of competitive casual theories. *Journal of Business Research*, *56*, 529–539.

Chebat, J-C., Sirgy, M. J., & Grzeskowiak, S. (2010). How can shopping mall management best capture mall image? *Journal of Business Research*, *63*, 735–740.

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

Cheng, F-F., Wu, C-S., & Yen, D. C. (2009). The effect of online store atmosphere on consumer's emotional responses – An experimental study of music and colour. *Behaviour & Information Technology*, *28*(4), 323–334.

Christofi, M., Leonidou, E., & Vrontis, D. (2017). Marketing research on mergers and acquisitions: A systematic review and future directions. *International Marketing Review*, *34*(5), 629–651.

Christofi, M., Vrontis, D., & Cadogan, J. W. (2021). Micro-foundational ambidexterity and multinational enterprises: A systematic review and a conceptual framework. *International Business Review*, *30*(1), <https://doi.org/10.1016/j.ibusrev.2019.101625>.

Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of Management Studies*, *47*(6), 1154–1191.

Dabić, M., Maley, J., Dana, L. P., Novak, I., Pellegrini, M. M., & Caputo, A. (2019). Pathways of SME internationalization: A bibliometric and systematic review. *Small Business Economics*, 1–21.

Dabić, M., Vlačić, B., Paul, J., Dana, L., Sahasranamam, S., & Glinka, B. (2020). Immigrant entrepreneurship: A review and research agenda. *Journal of Business Research*, *113*, 25–38.

Dada, O. L. (2018). A model of entrepreneurial autonomy in franchised outlets: A systematic review of the empirical evidence: entrepreneurial autonomy in franchised outlets. *International Journal of Management Reviews*, *20*(2), 206–226.

Dailey, L. (2004). Navigational web atmospherics: Explaining the influence of restrictive navigation cues. *Journal of Business Research*, *57*, 795–803.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly*, *13*(9), 319–40.

Davis, L., Wang, S., & Lindridge, A. (2008). Culture influences on emotional responses to on-line store atmospheric cues. *Journal of Business Research*, *61*, 806–812.

Deng, L., & Poole, M. S. (2010). Affect in web interfaces: A study of the impacts of web page visual complexity and order. *MIS Quarterly*, *34*(4), 711–730.

Domenico, G. D., Sit, J., Ishizaka, A., & Nunan, D. (2021). Fake news, social media and marketing: A systematic review. *Journal of Business Research*, *124*, 329–341.

Donovan, R. J., & Rossiter, J. R. (1982). Store atmosphere: An environmental psychology approach. *Journal of Retailing*, *58*(1), 34–57.

Donovan, R. J., Rossiter, J. r., Marcoolyn, G., & Nesdale, A. (1994). Store atmosphere and purchasing behavior. *Journal of Retailing*, *70*(3), 283–294.

Donthu, N., Rienhartz, W., Kumar, S., & Pattnaik, D, (2021). A retrospective review of the first 35 years of the International Journal of Research in Marketing*. International Journal of Research in Marketing*, *38*(1), 232–269.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing – A conceptual model and implications. *Journal of Business Research*, *54*, 177–184.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Atmospherics and shopper responses. *Psychology & Marketing*, *20*(2), 139–150.

Fakhar Manesh, M., Pellegrini, M. M., Marzi, G., & Dabic, M. (2020). Knowledge management in the fourth industrial revolution: Mapping the literature and scoping future avenues. *IEEE Transactions on Engineering Management*. <https://doi.org/10.1109/TEM.2019.2963489>.

Fiore, A. M., Jin, H-J., & Kim, J. (2005). For fun and profit: Hedonic value from image interactivity and responses toward an online store. *Psychology & Marketing*, *22*(8), 669–694.

Fiore, A. M., Yah, X., & Yoh, E. (2000). Effects of a product display and environmental fragrancing on approach responses and pleasurable experiences. *Psychology & Marketing*, *17*(1), 27–54.

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

Follmer, K. B., & Jones, K. S. (2018). Mental illness in the workplace: An interdisciplinary review and organizational research agenda. *Journal of Management*, *44*(1), 325–351.

Gao, L., & Bai, X. (2014). Online consumer behaviour and its relationship to website atmospheric induced flow: Insights into online travel agencies in China. *Journal of Retailing and Consumer Services*, *21*, 653–665.

Garaus, M. (2017). Atmospheric harmony in the retail environment: its influence on store satisfaction and re-patronage intention. *Journal of Consumer Behavior*, *16*, 265–278.

Gilal, F. G., Zhang, J., Paul, J., & Gilal, N. G. (2019). The role of self-determination theory in marketing science: An integrative review and agenda for research. *European Management Journal*, *37*(1), 29–44.

Gomes, R. M., & Paula, F. (2017). Shopping mall image: Systematic review of 40 years of research. *The International Review of Retail, Distribution, and Consumer Research*, *27*(1), 1–27.

Gounaris, S., Korito, C., & Vassilikopoulou, K. (2010). Person-place congruency in the internet banking context. *Journal of Business Research*, *63*, 943–949.

Grewal, D., Baker, J., Levy, M., & Voss, G.B. (2003). The effects of wait expectations and store atmosphere evaluations on patronage intentions in service-intensive retail stores. *Journal of Retailing*, *79*(4), 259–268.

Griffith, D. A. (2005). An examination of the influences of store layout in online retailing. *Journal of Business Research*, *58*, 1391–1396.

Groß, M. (2016). Impediments to mobile shopping continued usage intention: A trust-risk-relationship. *Journal of Retailing and Consumer Services*, *33*, 109–119.

Ha, Y., & Lennon, S. J. (2010). Online visual merchandising (VMD) cues and consumer pleasure and arousal: Purchasing versus browsing situation. *Psychology & Marketing*, *27*(2), 141–165.

Hassan, L. M., Shiu, E., & Parry, S. (2016). Addressing the cross‐country applicability of the theory of planned behaviour (TPB): A structured review of multi‐country TPB studies. *Journal of Consumer Behaviour*, *15*(1), 72–86.

Hatfield, E., Cacioppo, J.T. and Rapson, R.L. (1994). *Emotional Contagion*. New York, NY: Cambridge University Press.

Helmefalk, M., & Hulten, B. (2017). Multi-sensory congruent cues in designing retail store atmosphere: Effects on shoppers’ emotions and purchase behavior. *Journal of Retailing and Consumer Services*, *38*, 1–11.

Hoﬀman, D.L., & Novak, T.P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, *60*(3), 50–69.

Hsieh, S. H., Lee, C. T., & Tseng, T. H. (2021). Branded app atmospherics: Examining the effect of pleasure-arousal-dominance in brand relationship building. *Journal of Retailing and Consumer Services*, *60*, 102482.

Hulten, B. (2012). Sensory cues and shoppers’ touching behaviour: The case of IKEA. *International Journal of Retail & Distribution Management*, *40*(4), 273–289.

Jang, S. S., & Namkung, Y. (2009). Perceived quality, emotions, and behavioral intentions: Application of an extended Mehrabian–Russell model to restaurants. *Journal of Business Research*, *62*(4), 451–460.

Kahiya, E. T. (2018). Five decades of research on export barriers: Review and future directions. *International Business Review*, *27*(6), 1172–1188.

Kaminakis, K., Karantinou, K., Koritos, C., & Gounaris, S. (2019). Hospitality servicescape effects on customer-employee interactions: A multilevel study. *Tourism Management*, *72*, 130–144.

Kim, D., Hyen, H., & Park, J. (2020). The effect of interior color on customers’ aesthetic perception, emotion, and behavior in the luxury service. *Journal of Retailing and Consumer Services*, *57*, 102252.

Kim, H., Choi, Y. J., & Lee, Y. (2015). Web atmospheric qualities in luxury fashion brand web sites. *Journal of Fashion Marketing and Management*, *19*(4), 384–401.

Koo, W., Cho, E., & Kim, Y-K. (2014). Actual and ideal self-congruity affecting consumers’ emotional and behavioral responses toward an online store. *Computers in Human Behavior*, *36*, 147–153.

Kotler, P. (1974). Atmospherics as a marketing tool. *Journal of Retailing*, *49*(4), 48–64.

Koufaris, M. (2002). Applying the technology acceptance model and ﬂow theory to online consumer behavior. *Information System Research*, *13*(2), 205–223.

Krasonikolakis, I., Vrechopoulos, A., & Pouloudi, A. (2014). Store selection criteria and sales prediction in virtual words. *Information & Management*, *51*, 641–652.

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

Kumar, A., Paul, J., & Unnithan, A. B. (2020). ‘Masstige’ marketing: A review, synthesis and research agenda. *Journal of Business Research*, *113*, 384–398.

Lee, E-J., & Park, J. (2010). Service failures in online double deviation scenarios: Justice theory approach. *Managing Service Quality*, *20*(1), 46–69.

Lee, Y., & Kim, H-Y. (2019). Consumer need for mobile app atmospherics and its relationships to shopper responses. *Journal of Retailing and Consumer Services*, *51*, 437–442.

Leonidou, E., Christofi, M., Vrontis, D., and Thrassou, A. (2020). An integrative framework of stakeholder engagement for innovation management and entrepreneurship development. *Journal of Business Research*, *119*, 245–258.

Li, Y-M., & Yeh, Y-S. (2010). Increasing trust in mobile commerce through design aesthetics. *Computers in Human Behavior*, *26*, 673–684.

Liang, T-P., & Lai, H-J. (2002). Effect of store design on consumer purchases: An empirical study of online bookstores. *Information & Management*, *39*, 431–444.

Lincoln, Y, S., & Guba, E, G. (1985). *Naturalistic Inquiry*. Beverly Hills, CA: Sage.

Lindberg, U., Salomonson, N., Sundstrom, M., & Wendin, K. (2018). Consumer perception and behavior in the retail foodscape – A study of chilled groceries. *Journal of Retailing and Consumer Services*, *40*, 1–7.

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

Lombart, C., Millan, E., Normand, J-M., Verhulst, A., Labbe-Pinlon, B., & Moreau, G. (2020). Effects of physical, non-immersive virtual, and immersive virtual store environments on consumers’ perceptions and purchase behavior. *Computers in Human Behavior*, *110*, 106374.

Lorenzo, C., Gomez, M. A., & Molla, A. (2007). Website design and e-consumers: Effects and responses. *International Journal of Internet Marketing and Advertising*, *4*(1), 117–144.

Loupiac, P., & Goudey, A. (2020). How website browsing impacts expectations of store features. *International Journal of Retail and Distribution Management*, *48*(1), 92–108.

Loureiro, S. M. C., & Roschk, H. (2014). Differential effects of atmospheric cues on emotions and loyalty intention with respect to age under online/offline environment. *Journal of Retailing and Consumer Services*, *21*, 211–219.

Lucia-Palacios, L., Pérez-López, R., & Polo-Redondo, Y. (2018). Atmospheric excitement, customers’ moods and gender: A study of young shoppers. *Journal of Strategic Marketing*, *26*(8), 649–664.

Lyngdoh, T., Chefor, E., Hochstein, B., Britton, B. P., & Amyx, D. (2021). A systematic literature review of negative psychological states and behaviors in sales. *Journal of Business Research*, *122*, 518–533.

Mabey, C. (2013). Leadership development in organizations: Multiple discourses and diverse practice. *International Journal of Management Reviews*, *15*(4), 359–380.

Machleit, K. A., & Eroglu, S. A. (2000). Describing and measuring emotional response to shopping experience. *Journal of Business Research*, *49*, 101–111.

Mandler, T., Sezen, B., Chen, J., & [Özsomer](https://www.sciencedirect.com/science/article/abs/pii/S014829632030847X?via%3Dihub" \l "!), A. (2021). Performance consequences of marketing standardization/adaptation: A systematic literature review and future research agenda. *Journal of Busines Research*, *125*, 416–435.

Manganari, E. E., Siomkos, G. J., & Vrechopoulos, A. P. (2009). Store atmosphere in web retailing. *European Journal of Marketing*, *43*(9-10), 1140–1153.

Mari, M., & Poggesi, S. (2013). Servicescape cues and customer behavior: A systematic literature review and research agenda. *The Service Industries Journal*, *33*(2), 171–199.

Mehrabian, A. & Russell, J. A. (1974). *An Approach to Environmental Psychology*. Cambridge, MA: The MIT Press.

Menon, S., & Kahn, B. (2002). Cross-category effects of induced arousal and pleasure on the Internet shopping experience. *Journal of Retailing*, *78*, 31–40.

Meyer, A. (2006). Are you experiential? *Multichannel Merchant*, *2*(8), 1.

Molina, A., Martin, V. J., Santos, J., & Aranda, E. (2009). Consumer service and loyalty in Spanish grocery store retailing: An empirical study. *International Journal of Consumer Studies*, *33*(4), 477–485.

Mummalaneni, V. (2005). An empirical investigation of web site characteristics, consumer emotional states and online shopping behaviors. *Journal of Business Research*, *58*, 526–532.

Murray, J., Elms, J., & Teller, C. (2017). Examining the role of store design on consumers’ cross-sectional perceptions of retail brand loyalty. *Journal of Retailing & Consumer Services*, *38*, 147–156.

[Nair, S.R.](https://www.emerald.com/insight/search?q=Suja%20R.%20Nair), & [Shams, S.M.R.](https://www.emerald.com/insight/search?q=S.M.%20Riad%20Shams) (2020). Impact of store-attributes on food and grocery shopping behavior: Insights from an emerging market context. [*EuroMed Journal of Business*](https://www.emerald.com/insight/publication/issn/1450-2194), article in press. <https://doi.org/10.1108/EMJB-10-2019-0128>

Naletelich, K., & Pawan, A. K. (2018). Art infusion in retailing: The effect of art genres. *Journal of Business Research*, *85*, 514–522.

Newman, A. J. (2007). Uncovering Dimensionality in the Servicescape: Towards Legibility. *The Service Industries Journal*, *27*(1), 15–28.

Nguyen, D. H., de Leeuw, S., & Dullaert, W. E. (2018). Consumer behaviour and order fulfilment in online retailing: A systematic review. *International Journal of Management Reviews*, *20*(2), 255–276.

North, A. C., & Hargreaves, D. J. (1998). The effect of music on atmosphere and purchase intentions in a cafeteria. *Journal of Applied Social Psychology*, *28*, 2254–2273.

Oh, J., Fiorito, S. S., Cho, H., & Hofacker, C. F. (2008). Effects of design factors on store image and expectation of merchandise quality in web-based stores. *Journal of Retailing and Consumer Services*, *15*, 237–249.

Ong, F. S., Khong, K. W., Yeoh, K. K., Syuhaily, O., & Nor, O. M. (2018). A comparison between structural equation modelling (SEM) and Bayesian SEM approaches on in-store behaviour. *Industrial Management & Data Systems*, *118*(1), 41–64.

Otterbring, T. (2017). Smile for a while: The effect of employee-displayed smiling on customer affect and satisfaction. *Journal of Service Management*, *28*(2), 284–304.

Ou, C. X., & Sia, C. L. (2010). Consumer trust and distrust: An issue of website design. *International Journal of Human-Computer Studies*, *68*, 913–934.

Page, B., Trinh, G., & Bogomolova, S. (2019). Comparing two supermarket layouts: The effect of a middle aisle on basket, size, spend, trip duration and endcap use. *Journal of Retailing & Consumer Services*, *47*, 49–56.

Palmatier, R. W., Houston, M. B., & Hulland, J. (2018). Review articles: Purpose, process, and structure. *Journal of the Academy Marketing Science*, *46*(1), 1–5.

Patel, V., Das, K., Chatteriee, R., & Shuka, Y. (2020). Does the interface quality of mobile shopping apps affect purchase intention? An empirical study. *Australasian Marketing Journal*, *28*, 300–309.

Paul, J., & Benito, G. R. (2018). A review of research on outward foreign direct investment from emerging countries, including China: What do we know, how do we know and where should we be heading? Asia Pacific Business Review, *24*(1), 90–115.

Paul, J., & Feliciano-Cestero, M. M. (2021). Five decades of research on foreign direct investment by MNEs: An overview and research agenda. *Journal of Business Research*, *124*, 800–812.

Paul, J., & Singh, G. (2017). The 45 years of foreign direct investment research: Approaches, advances and analytical areas. *The World Economy*, *40*(11), 2512–2527.

Paul, J., Parthasarathy, S., & Gupta, P. (2017). Exporting challenges of SMEs: A review and future research agenda. *Journal of World Business*, *52*(3), 327–342.

Pereira, V., Vrontis, D., Christofi, M., & Temouri, Y. (2019). Analysing three decades of emerging market research: Future research directions. *British Journal of Management*, 1–12.

Porat, T., & Tractinsky, N. (2012). It's a pleasure buying here: The effects of web-store design on consumers' emotions and attitudes. *Human–Computer Interaction*, *27*(3), 235–276.

Raja, M. W., Anand, S., & Allan, D. (2019). Advertising music: An alternative atmospheric stimulus to retail music. *International Journal of Retail & Distribution Management*, *47*(8), 872–892.

Rana, J., & Paul, J. (2019). Health motive and the purchase of organic food: A meta‐analytic review. *International Journal of Consumer Studies*, *44*(2), 161–172.

Reynolds-McIlnay, R., Morrin, M., & Nordfalt, J. (2017). How product-environment brightness contract and product disarray impact consumer choice in retail environments. *Journal of Retailing*, *3*, 266–282.

Richard, M-O. (2005). Modeling the impact of internet atmospherics on surfer behavior. *Journal of Business Research*, *58*, 1632–1642.

Roschk, H., Loureior, S. M. C., & Breitsohl, J. (2017). Calibrating 30 years of experimental research: A meta-analysis of the atmospheric effects of music, scent and color. *Journal of Retailing*, *93*(2), 228–240.

Rose, S., Hair, N., & Clark, M. (2011). Online customer experience: A review of the business-to-consumer online purchase context. *International Journal of Management Reviews*, *13*(1), 24–39.

Rousseau, D. M., Manning, J., & Denyer, D. (2008). Evidence in management and organizational science: Assembling the field’s full weight of scientific knowledge through syntheses. *Academy of Management Annals*, *2*(1), 475–515.

Roux, T., Mahlangu, S., & Manetje, T. (2020). Digital signage as an opportunity to enhance the mall environment: A moderated mediation model. *International Journal of Retail and Distribution Management*, *48*(10), 1099–1119.

Russell, J. A., & Mehrabian, A. (1977). Evidence for a three-factor theory of emotions. *Journal of Research in Personality*, *11*, 273–294.

Russell, J. A., & Pratt, G. (1980). A description of the affective quality attributed to environments. *Journal of Personality and Social Psychology*, *38*, 311–322.

Sarah F. H., Goi, C. L., Chieng, F., & Taufique, K. M. R. (2021). Examining the influence of atmospheric cues on online impulse buying behavior across product categories: Insights from an emerging e-market. *Journal of Internet Commerce*, *20*(1), 25–45.

Sarkar, A., Sarkar, J. G., & Bhatt, G. (2019). Store love in single brand retailing: The roles of relevant moderators. *Marketing Intelligence & Planning*, *37*(2), 168–181.

Schiffman, L.G., & Kanuk, L.L. (2007). *Consumer Behavior* (9th ed.). Upper Saddle River, NJ: Prentice–Hall.

Schnack, A., Wright, M. J., & Holdershaw, J. L. (2021). Does the locomotion technique matter in an immersive virtual store environment? – Comparing motion-tracked walking and instant teleportation. *Journal of Retailing and Consumer Services*, *58*, 102266.

Shamsollahi, A., Chmielewski-Raimondo, D. A., Bell, S. J., & Kachouie, R. (2020). Buyer-supplier relationship dynamics: A systematic review. *Journal of the Academy of Marketing Science*, *49*, 418–436.

Sina, A. S., & Wu, J. (2019). Effects of 3D vs 2D interfaces and product-coordination methods. *International Journal of Retail & Distribution Management*, *47*(8), 855–871.

Spangenberg, E. R., Sprott, D. E., Grohmann, B., & Tracy, D. L. (2006). Gender-congruent ambient scent inﬂuences on approach and avoidance behaviors in a retail store. *Journal of Business Research*, *59*(12), 1281–1287.

Spies, H., Hesse, F., & Loesch, K. (1997). Store atmosphere, mood and purchasing behavior. *International Journal of Research in Marketing*, *14*, 1–17.

Srichookiat, S., & Findabot, T. (2018). Salient environmental attributes and their value for small independent grocers. *Journal of Consumer Marketing*, *35*(5), 465–479.

Tafesse, W., & Korneliussen, T. (2012). Identifying factors affecting consumers purchase incidence at retail trade shows. *Journal of Retailing and Consumer Services*, *19*, 438–444.

Tractinsky, N., & Lowengart, O. (2007). Web-store aesthetics in e-retailing: A conceptual framework and some theoretical implications. *Academy of Marketing Science*, *11*(1), 1–18.

Tueanrat, Y., Papagiannidis, S., & Alamanos, E. (2021). Going on a journey: A review of the customer journey literature. *Journal of Business Research*, *125*, 336–353.

Turley, L. W., & Milliman, R. E. (2000). Atmospheric effects on shopping behavior: A review of the experimental evidence. *Journal of Business Research*, *49*, 193–211.

Valdez, P., & Mehrabian, A. (1994). Effects of color on emotions. *Journal of Experimental Psychology*, *123*(4), 394–409.

Verhagen, T., & van Dolen, W. (2009). Online purchase intentions: A multi-channel store image perspective. *Information & Management*, *46*, 77–82.

Vespestad, M.K., & Clancy, A. (2021). Exploring the use of content analysis methodology in consumer research. *Journal of Retailing and Consumer Services*, 59, 102427.

Visinescu, L. L., Sidorova, A., Jones, M. C., & Prybutok, V. R. (2015). The influence of website dimensionality on customer experiences, perceptions and behaviroal intentions: An exploration of 2D vs. 3D web design. *Information & Management,* *52*, 1–17.

Vrechopoulos, A. P., O’Keefe, R. M., Doukidis, G. I. & Siomkos, G. J. (2004). Virtual store layout: An experimental comparison in the context of grocery retail. *Journal of Retailing*, *80*, 13–22.

Vrechopoulos, A., & Atherinos, E. (2009). Web banking layout effects on consumer behavioural intentions. *International Journal of Bank Marketing*, *27*(7), 524–526.

Vrechopoulos, A., Apostolou, K., & Koutsiouris, V. (2009). Virtual reality retailing on the web: Emerging consumer behavioural patterns. *The International Review of Retail, Distribution and Consumer Research*, *19*(5), 469–482.

Vrontis, D., & Christofi, M. (2021). R&D internationalization and innovation: A systematic review, integrative framework and future research directions. *Journal of Business Research*, *128*, 812–823.

Vrontis, D., Christofi, M., & Katsikeas, C. S. (2020). An assessment of the literature on cause-related marketing: Implications for international competitiveness and marketing research. *International Marketing Review*, *37*(5), 977–1012.

Wakefield, K. L., & Baker, J. (1998). Excitement at the mall: Determinants and effects on shopping response. *Journal of Retailing*, *74*(4), 515–539.

Wang, Y. J., Minor, M. S., & Wei, J. (2011). Aesthetics and online shopping environment: Understanding consumer responses. *Journal of Retailing*, *87*(1), 46–58.

Wohlin, C., & Aurum, A. (2015). Towards a decision-making structure for selecting a research design in empirical software engineering. *Empirical Software Engineering*, *20*, 1427–1455.

Wu, J., Kim, A., & Koo, J. (2015). Co-design visual merchandising in 3D virtual stores: A facet theory approach. *International Journal of Retail & Distribution Management*, *43*(6), 538–560.

Wu, J., Song, S., & Whang, C. H. (2021). Personalizing 3D virtual fashion stores: Exploring modularity with a typology of atmospherics based on user input. *Information & Management*, *58*, 103461.

Wu, W-Y., Lee, C-L., Fu, C-S., & Wang, H-C. (2014). How can online store layout design and atmosphere influence consumer shopping intention on a website? *International Journal of Retail and Distribution Management*, *42*(1), 4–24.

Xie, E., Reddy, K. S., & Liang, J. (2017). Country-specific determinants of cross-border mergers and acquisitions: A comprehensive review and future research directions. Journal of World Business, 52(2), 127–183.

Yoon, S. (2013). Antecedents and consequences of in-store experiences based on an experiential typology. *European Journal of Marketing*, *47*(5/6), 693–714.

Yun, Z-S., & Good, L. K. (2007). Developing customer loyalty from e-tail store image attributes. *Managing Service Quality*, *17*(1), 4–22.

Zhang, H., & Babar, M. A. (2013). Systematic reviews in software engineering: An empirical investigation. *Information and Software Technology*, *55*(7), 1341–1354.

**Tables and Figures**

Table 1 Data collection and analysis methods in review sample

|  |  |
| --- | --- |
| **Data collection methods (number and weight)** | **Data analysis (number of studies)** |
| Case study 7 (4.2%)Experiment design 64 (37.9%)Qualitative interviews 19 (11.2%)Survey 69 (40.8%)Other 10 (5.9%)Total empirical studies 169 (100%)  | ANCOVA 5ANOVA 35Cluster analysis 4Content analysis 6 Exploratory factor analysis 14MANCOVA 5MANOVA 12Meta-analysis 4Modelling 8Regression 24Structure equation modelling 59Thematic analysis 2Other 2  |

Table 2 Development of store atmosphere definition

|  |  |  |
| --- | --- | --- |
| Authors & *Sources* | Store Atmosphere Definition | Store Atmosphere Dimensions |
| Kotler (1974) *Journal of Retailing* | “T*he conscious designing of space to create certain buyer effects, specifically, the designing of buying environments to product specific emotional effects in the buyer that enhance purchase probability*”. | Sensory dimension: sight, sound, scent and touch.Visual dimension: color, brightness, size, shapes.Aural dimension: volume, pitch.Olfactory dimension: scent, freshness.Tactile dimension: softness, smoothness, temperature. |
| Donovan & Rossiter (1982, *Journal of Retailing*)Donovan et al. (1994, *Journal of Retailing*)  | “S*tore atmosphere has been included as a component of store image, along with other physical in-store variables which are antecedents of store atmosphere; is conceptualized a single attribute narrowly*”. | Store-induced pleasure and arousal stimulated spending behavior and time spent in-store. Dominance did not relate well to in-store behaviors.  |
| Baker et al., (1994*, Journal of the Academy of Marketing Science*)Baker et al., (2002, *Journal of Marketing*) | “S*tore environment is conceptualized as three dimensions: atmosphere, social, and lighting. The atmosphere reflects the physical environment whereas the social dimension captures the interplay and dynamics of social interactions within immediate environment; lighting is important factor of in-store art*”. | Store design factors (environmental elements that are more visual, maybe functional and/or aesthetic in nature); store social factors (the number, type, and behavior of other customers and sales personnel are the elements); store ambient factors (including temperature, lighting, music, and scent). |
| Berman & Evans (1995, Book)Turley & Milliman (2000, *Journal of Business Research*) | “*Focus on facility-based environment cues, or atmospherics, the environment psychology indicates that shoppers respond to an atmosphere with one of two responses, approach or avoidance… atmospheric stimuli or elements affect overall behavioral responses*”. | Exterior of the store; the general interior; the layout and design variables; and the point-of-purchase and decoration variables. The 5th extended category is human variables consisting of employees (characteristics, uniforms), crowding, customer characteristics and privacy.  |
| Eroglu et al. (2001, *Journal of Business Research*) | N/A | Virtual store can be grouped into: high task-relevant environment (all the site descriptors appear on the screen which facilitate and enable the consumer’s shopping goal attainment) and low task-relevant environment (site information is inconsequential to completion of the shopping task).  |
| Dailey (2004, *Journal of Business Research*) | *“Web atmospherics can be defined as the conscious designing of web environments to create positive effects (e.g., positive affect, positive cognitions etc.) in users in order to increase favorable consumer responses (e.g. site revisiting, browsing etc.)”.*  | N/A |
| Oh et al. (2008, *Journal of Retailing and Consumer Services*) | N/A  | Two design factors categorize web-based store atmosphere: storefront design (thematic and nonthematic type) and methods of information display (presents merchandise and pays the role of displaying information). |
| Vrechopoulos et al., (2004, *Journal of Retailing*)Manganari et al. (2009, *European Journal of Marketing*) | N/A  | Virtual store component framework embraces: virtual layout and design, virtual atmospherics, virtual theatrics, and virtual social presence (extended from conventional retailing formats). |
| Chebat et al. (2010, *Journal of Business Research*) | “*Atmosphere in the context of mall refers to aesthetics and ambience of the mall…the mall’s environment such as color, music, and crowding play an important in shoppers’ perception and evaluation of the mall at large*”.  | Five dimensions of mall image consist of: access, atmosphere, price/promotion, cross-category assortment, and within-category assortment that predict mall attitude, mall patronage, and mall WOM.  |
| Floh & Madlbergre (2013, *Electronic Commerce Research & Applications*) | “I*n the online buying context, atmospheric cues have been investigated with impulse buying behavior that psychological attributes affect consumer responses towards web-based stores*.” | Atmospheric cues are classified into three spheres: e-store content, e-store design, and e-store navigation. |
| Wu et al. (2021, *Information & Management*) | N/A | Three atmospheric categories in the virtual contexts: pathfinding assistance, environment, and the manner of product presentation.  |

Table 3 Store Atmosphere-relevant constructs and definitions derived from review sample

|  |  |  |
| --- | --- | --- |
| **SA-relevant constructs** | **Demonstrations**  | **No. of studies in the review sample** |
| Store ambient cues | Better store ambience positively impacts customers’ perceptions of merchandise quality (Baker et al., 1994) in retailing contexts. Moreover, ambient cues including music (Srichookiat & Findabot, 2018), scent (Spangenberg et al. 2006), color (Baek et al., 2018), lighting (Mari & Poggesi, 2013) and others.  | 17 |
| Store aesthetic  | “*An artistically designed website is visually appealing to visitors, and website designs with aesthetic value are typically superior to less attractive designs*” (Chang et al., 2014). Besides, “*a shopping website interface that is aesthetically pleasing, customised, and well-organized enhances customer trust*” (Groß, 2016).  | 14 |
| Color  | In-store color derives a positive store atmosphere and affects shopping mood. “*It is categorised into three dimensions: hue, saturation and brightness (known as HSB color model*) (Valdez & Mehrabian, 1994; Reynolds-McIlnay et al., 2017). | 5 |
| E-commerce/website design | “*A website design feature with intended purpose of enhancing instrumental value through facilitating assessment of product information may also offer hedonic value to the consumers who desires it*” (Fiore et al., 2005). Designs also affect each stage of consumer decision-making process and increases impulse purchases (Lo et al., 2016).  | 17 |
| Flow | “*Flow denotes a state during navigational network”* (Hoffman & Novak, 1996). “*A convenient, interactive and compelling online store atmosphere provides rewarding ‘flow opportunities’ enhancing the hedonic and utilitarian consumer value*” (Aboubaker Ettis, 2017).  | 4 |
| Servicescape  | Bitner (1990) first defined servicescape as the *“‘built environment’ influencing consumers and employees from three dimensions: the ambient conditions (e.g., temperature, air quality, noise, music, odour), spatial layout and functionality (e.g., layout, equipment, furnishings) and signs, symbols, and artefacts (e.g., signature, style of décor to communicate image)”.*  | 10 |
| Store attribute  | Store attributes positively affects consumers’ pleasure in-store. Defined as “*retail environments which stimulate a consumer’s desire to purchase, including product, service, and store qualities*” (Kotler, 1974). The attributes have been extended and classified distinctively across different product or service industries.  | 8 |
| Store design | Store design is a tangible and visible component of stores including architectures and decorations (Backstrom & Johansson, 2006). The ultimate purpose of store design is to employ various emotional and cognitive triggers to initiate a unique shopping experience for each customer from a holistic approach (Meyer, 2006).  | 10 |
| Store image | A store image is accounted for the physical context, design differences and merchandising elements (Schiffman & Kanuk, 2007). Store image shapes consumer’s perception and differs in multichannel (Verhagen & van Dolen, 2009).  | 12 |
| Store layout | Store layout could impact store performance, for instance, how long and how easy it takes to shop in store (Page et al., 2019). Vrechopoulos et al. (2004) categorised three types of store layout: grid, freeform, and racetrack. Online store layout has been extended encompassing tree and tunnel website structures (Griffith, 2005).  | 21 |



Figure 1 Literature search process

Figure 2 Number of Publications in Years

Figure 3 Number of studies ranked in ABS 2018 journal list



Figure 4 Number of empirical studies distributed geographically

Figure 5 Research context of reviews sample



Figure 6 Emerging constructs on store atmosphere publications from 1974 to 2021



Figure 7 Other theoretical basis of store atmosphere research in the review sample



Figure 8 Integrative framework



Figure 9 Future research directions proposed by extant store atmosphere literature