Review

Consumer Behavior in Online-to-Offline (O2O) Commerce: A Thematic Review

Pinyi Yao *[ID], **Syuhaily Osman** [ID], **Mohamad Fazli Sabri** [ID] **and Norzalina Zainudin**

Faculty of Human Ecology, Universiti Putra Malaysia, Serdang 43400, Selangor, Malaysia; syuly@upm.edu.my (S.O.); fazli@upm.edu.my (M.F.S.); norzalina@upm.edu.my (N.Z.)
* Correspondence: pinyi_y@foxmail.com

Abstract: Online-to-offline (O2O) commerce is a popular business model which links offline business activities with online channels. Consumer behavior in O2O commerce is more complex than in other traditional business models as both online and offline channels are involved. Despite the growing number of publications focused on this issue, no review paper has discussed the current research trends and factors influencing consumer behavior in O2O commerce. Therefore, this review aimed to synthesize literature on O2O commerce from 2015 to April 2022, focusing on consumer behavior. A set of inclusion and exclusion criteria was developed for searching and screening articles from two dominant databases (i.e., WOS and Scopus), and 53 eligible articles were included in this review. A thematic review approach using ATLAS.ti 9 software was conducted. Quantitative results presented the research trends of O2O commerce. Qualitative analyses generated eight main clusters of factors which influence consumers' O2O behavior: (1) service and product quality, (2) technical and utilitarian factors, (3) emotional and hedonic factors, (4) trust and risk, (5) price and cost (6), social factors, (7) online content, and (8) habit. This paper also highlighted promising future research directions. The findings are expected to benefit the sustainable management and the future research of O2O commerce.

Keywords: O2O commerce; online-to-offline; consumer behavior; thematic review; ATLAS.ti

1. Introduction

In the past few decades, the spread of the Internet and the emergence of electronic commerce (e-commerce) or online shopping have changed the way consumers think and live in an unprecedented trend [1]. With the exponential growth of mobile devices (mainly smartphones) in the last decade, mobile commerce (m-commerce) has emerged, once again changing consumer behavior patterns and dramatically changing the landscape of traditional e-commerce [2]. It means that consumers can make purchases using their smartphones anytime, anywhere. Technology advancements have given rise to new business models and consumer-friendly services, such as mobile payments and online bookings [3]. Online-to-offline commerce (O2O commerce), which has recently been very popular, is one of those new business models. In O2O commerce, consumers typically make the purchase online and then consume the products or services offline [4,5]. To illustrate, consumers search, book, or pay online using a mobile app. They subsequently use location services to find and walk into the target brick-and-mortar store to consume. Alternatively, they receive products or services at home or at the workplace using instant delivery or door-to-door services.

O2O commerce combines online and offline channels, which means bringing online consumers into "real-world" stores [6] or using the online channel to drive offline sales [7]. For those brick-and-mortar businesses that have been impacted by e-commerce and feel left out, O2O commerce brings them new opportunities [8]. The enormous potential profit drives many local businesses or merchants into the O2O market [9]. Meanwhile, O2O

commerce also brings great convenience to consumers. One of the most visible examples is the O2O food delivery services [10], which have been widely discussed, especially during the COVID-19 pandemic [11,12]. In addition, the "stay-at-home order" policy in the pandemic has prompted some traditional brick-and-mortar retailers to offer home delivery services through O2O platforms [13].

O2O commerce is growing and expanding rapidly along with the development of mobile Internet and information technology [14]. In addition, since the outbreak of the COVID-19 pandemic, more and more offline businesses are using O2O platforms to find their customers [13,15]. Although O2O commerce has been very popular and has shown to be a successful business model [8], its sustainability is unknown. The rapid expansion of O2O commerce has raised concerns that this business model may not be sustainable [16]. It is necessary to identify current trends in O2O commerce to inform the development of sustainable strategies and the implementation of sustainable management. However, no review paper has attempted to discuss the research and industry trends in O2O commerce. Therefore, one of the objectives of this paper is to identify these trends by reviewing the current literature.

Due to the intense competition in the market, most O2O players tend to focus on increasing sales rather than on developing a sustainable relationship with consumers to maintain their business [17]. In the past few years, many O2O-related start-ups have failed, and one possible reason is that they did not closely observe consumer behavior [18]. In order to increase their survival chances, O2O businesses must retain existing customers and attract new ones by understanding consumer behavior to ensure the sustainability of their business. Digitization has extended to all stages of consumers' purchases [3], making consumer behavior more complex than ever, especially in O2O commerce, as it simultaneously involves online and offline channels. It is worth acknowledging that because O2O commerce is a new and emerging business model, limited studies have attempted to understand these complex consumer behaviors. Thus, another objective of this paper is to synthesize previous studies to understand the factors influencing consumers' O2O behavior.

To summarize, O2O commerce is growing rapidly with technological advances. However, academic research seems to be lagging behind industry practices [8]. Despite increasing studies focusing on O2O commerce, no review paper has discussed the trends of O2O commerce or the consumer behaviors associated with it. Therefore, this paper aims to identify the trends of O2O commerce and the factors influencing consumers' O2O behavior by reviewing the literature on O2O commerce, focusing on consumer behavior from 2015 to April 2022. The results are expected to provide insights into the sustainability of O2O commerce. Moreover, this paper will lay the groundwork for future research into understanding and conceptualizing consumers' O2O behavior. The following are the research questions to be answered in this paper.

- RQ1: What are the current trends of O2O commerce discussed in the consumer-related O2O literature from 2015 to April 2022?
- RQ2: What factors influence consumer behavior in O2O commerce?

This paper is divided into five sections. Section 1 is an introduction to the study and proposes the research questions. It is followed by Section 2, which provides an overview of the related concepts and works to better understand the subject matter. Section 3 describes the research methodology and the data collection and analysis procedures, whereas Section 4 focuses on the results and discussion of the study. Finally, conclusions and suggestions for further research directions conclude the paper in Section 5.

2. O2O Commerce and Consumer Behavior

2.1. What Is O2O Commerce?

Similar to other terms of e-commerce such as consumer-to-consumer (C2C) and business-to-consumer (B2C), online-to-offline (O2O) is a type of e-commerce business model. Rampell [6] first proposed the concept of O2O in 2010 and illustrated that the key

to O2O is to find consumers online and bring them into offline channels. Tsai et al. [2] argued that O2O commerce provides a seamless purchasing experience between online and offline commerce by any connected device, while Xiao et al. [19] stated that O2O commerce brings offline business activities to online channels which are used to promote offline businesses. Some researchers have distinguished between online-to-offline and offline-to-online commerce [20–22]. Although the specific wordings differ, according to Ryu et al. [23], O2O commerce is an integration rather than a competition between online and offline channels, creating new values. In the past, O2O commerce attracted consumers with banner advertisements and digital coupons [7]. Nowadays, O2O commerce plays an essential role in different scenarios of consumers' lives [12] and covers many types of local businesses, such as catering, ticketing, car-hailing, etc. [23].

Alternatively, O2O commerce can be viewed as an extension or upgrade of traditional e-commerce [19,24,25]. There are several differences between O2O commerce and traditional e-commerce. First, O2O commerce is location-based [2] and focuses on local retail and life service industries [19,26], such as restaurants, hotels, and entertainment. Second, the transactions in O2O commerce typically involve both online and offline channels [27,28]. Third, the features of O2O commerce make it difficult for consumers to return goods as easily as in traditional e-commerce [9,19]. Last, O2O commerce involves more participants, including consumers, offline stores, online platforms, and third-party service providers [29]. O2O commerce extends the scope of traditional e-commerce activities [30].

Business models always seem to change with the evolution of technology [2]. Many new types of O2O commerce are springing up, such as O2O clothing customization [31] and O2O community e-commerce [32]. There are many different scenarios in O2O commerce, but the two most apparent market segments in O2O industry practice, namely, "to-shop" and "to-home" [33,34], are rarely mentioned. The former refers to in-store consumption after paying or booking online. In contrast, the latter refers to receiving products or services at home or at the workplace through instant delivery or door-to-door services.

2.2. Consumer Behavior in O2O Commerce

Consumer behavior involves many things. It reflects the totality of consumers' decisions in terms of "the acquisition, consumption, and disposition of goods, services, activities, experiences, people, and ideas by (human) decision-making units" [35]. Consumer behavior includes the consumers' emotional, mental, and behavioral responses that precede, determine, or follow activities such as purchasing, using, and distributing goods and services [36] (p. 8). Although research has shown that consumer behavior is difficult to predict, it has always been an area of interest for scholars and marketers. Back in the 1960s and 1970s, Howard and Sheth [37] and Fishbein and Ajzen [38] proposed traditional models to explain consumer behavior. As e-commerce became popular, some researchers argued that online consumer behavior is different from offline behavior, and that new theories or models are required [39].

A review paper by Hwang and Jeong [40] discussed the factors affecting consumer behavior in e-commerce from the individual, website, and environmental dimensions and reported that many constructs had been used to study online consumer behavior. Technology acceptance and use behavior has been the subject of many classic studies in e-commerce. Haryanti and Subriadi's [41] literature review showed popular theories and models in e-commerce research, namely TRA [38], TPB [42], TAM [43,44], UTAUT [45], and UTAUT2 [46] (see Table 1). They also found variables outside these theories and models, with trust and perceived risk being the most widely used. In addition, the information systems success model (ISSM) developed by DeLone and McLean [47] and the expectation–confirmation model (ECM) proposed by Bhattacherjee [48] have been used to explain consumers' e-commerce adoption and use continuance behavior in many studies [49,50]. Table 1 shows exogenous variables from these theories and models that affect consumer behavior in e-commerce.

Table 1. Exogenous variables of popular theories and models in e-commerce literature.

Theories/Models	Exogenous Variables (Factors)
Theory of reasoned action (TRA)	Attitude Subjective norm
Theory of planned behavior (TPB)	Perceived behavioral control Subjective norm
Technology acceptance model (TAM)	Perceived usefulness Perceived Ease of Use
Unified theory of acceptance and use of technology (UTAUT)	Performance expectancy Effort expectancy Social influence Facilitating conditions
The extension of the unified theory of acceptance and use of technology (UTAUT2)	Performance expectancy Effort expectancy Social influence Facilitating conditions Hedonic motivation Price value Habit
Information systems success model (ISSM)	Information quality System quality Service quality
Expectation–confirmation model (ECM)	Perceived usefulness Confirmation

However, when it comes to O2O commerce, the situation seems to get more complex as it includes both online and offline channels. Wang et al. [30] pointed out that free-riding and showrooming are typical consumer behaviors in the omnichannel market (i.e., the O2O market). Free-riding refers to consumers searching for information in one channel and purchasing in another [51,52]. Consumers usually compare different channels and choose the one with higher added value to buy products or services [53]. Showrooming refers to consumers selecting goods online and buying offline [54], which reflects consumers' pursuit of transaction cost minimization on the premise of ensuring product efficacy [55]. Additionally, compared with traditional e-commerce, O2O commerce involves more participants and technological innovation, making consumer behavior more complex. For instance, O2O transactions include activities such as online matchmaking, online payment, and offline consumption [29], as well as technologies such as location systems, near-field communication (NFC), and quick response (QR) codes [22].

Similar to traditional e-commerce, O2O commerce can be viewed by consumers as an innovative information technology service, hence the technology use literature is relevant for understanding consumer behavior related to O2O services [56]. Previous models or constructs have been used to explain consumer behavior in O2O commerce, being the most widely concerned with the TAM and service quality (e.g., [20,57]). However, discussions have been sporadic and limited as the factors influencing consumers' O2O behavior have been loosely theorized. For instance, the food choice motives discussed in O2O food delivery [58] may not apply in other O2O scenarios. Furthermore, more evidence is needed to demonstrate that the theories and models applied in the prior e-commerce literature can explain consumer behavior in the context of O2O.

3. Materials and Methods

This paper adopted a non-systematic review method. Unlike systematic literature reviews, non-systematic reviews are not used to assess the effectiveness of previous research findings, but to see what the literature says about a particular problem, which can save researchers the time needed to read or synthesize material [59] (pp. 3–4). A non-systematic review was conducted because this paper aimed to present an overview of the O2O commerce literature related to consumer behavior. In addition, conducting a systematic review would not be particularly useful or practical in an area in which only a limited number of studies might be published [59] (p. 5). Because O2O commerce is a new and emerging business model, studies on a particular consumer-related theme (e.g., consumer loyalty) in this context are limited. Suppose the quality of studies is evaluated according to the Mixed Methods Appraisal Tool (MMAT) proposed by Hong et al. [60]. In that case, it can be expected that few studies would be eligible to be used for systematic review. Therefore, the non-systematic review method was more appropriate for this paper. Specifically, the thematic analysis procedure, a typical study design of non-systematic review, was adopted in this paper.

It is worth acknowledging that any non-systematic review must be systematic to some degree for credibility [59] (p. 5). Therefore, this paper adopted the thematic review approach that was introduced by Zairul [61–63] and conducted a thematic review in four steps.

3.1. Formulating the Research Question

We have presented two research questions in Section 1: (1) What are the current trends of O2O commerce discussed in the consumer-related O2O literature from 2015 to April 2022? (2) What factors influence consumer behavior in O2O commerce? The research questions gave clarity, cohesion, and direction to our work, by which we could judge what was relevant to our topic [59] (p. 7). Subsequently, we gathered, structured, and analyzed our sources in the next steps following the research questions.

3.2. Literature Screening

We framed explicit inclusion and exclusion criteria to determine which studies would be reviewed. First, studies must possess the keyword(s) "O2O", "Online-to-Offline", or "online to offline" in the title. Second, to ensure the quality of the studies, we only considered peer-reviewed journal articles and excluded document types such as conference proceedings, book chapters, etc. We also excluded review articles as a contradiction with the objective of this paper. Third, the original language of the articles must be English. Fourth, we considered articles published from 2015 to the present (30 April 2022) because a preliminary search showed that the first relevant English article was published in 2015. Last, studies must focus on consumer behavior in O2O commerce and its influencing factors.

3.3. Searching the Literature

We searched literature from two dominant databases: the Web of Science (WOS) core collection and Scopus. Based on the inclusion and exclusion criteria mentioned above, we searched and selected data following the procedure shown in Figure 1. To attain maximum reliability of the data, all authors searched and evaluated literature from both databases separately using the same procedure. The results were highly similar, indicating that our data collection procedure was reliable. We discussed subtle differences and ultimately selected 53 articles (including 2 in press) for inclusion in this review, as shown in Figure 1 and Table A1 (see Appendix A).
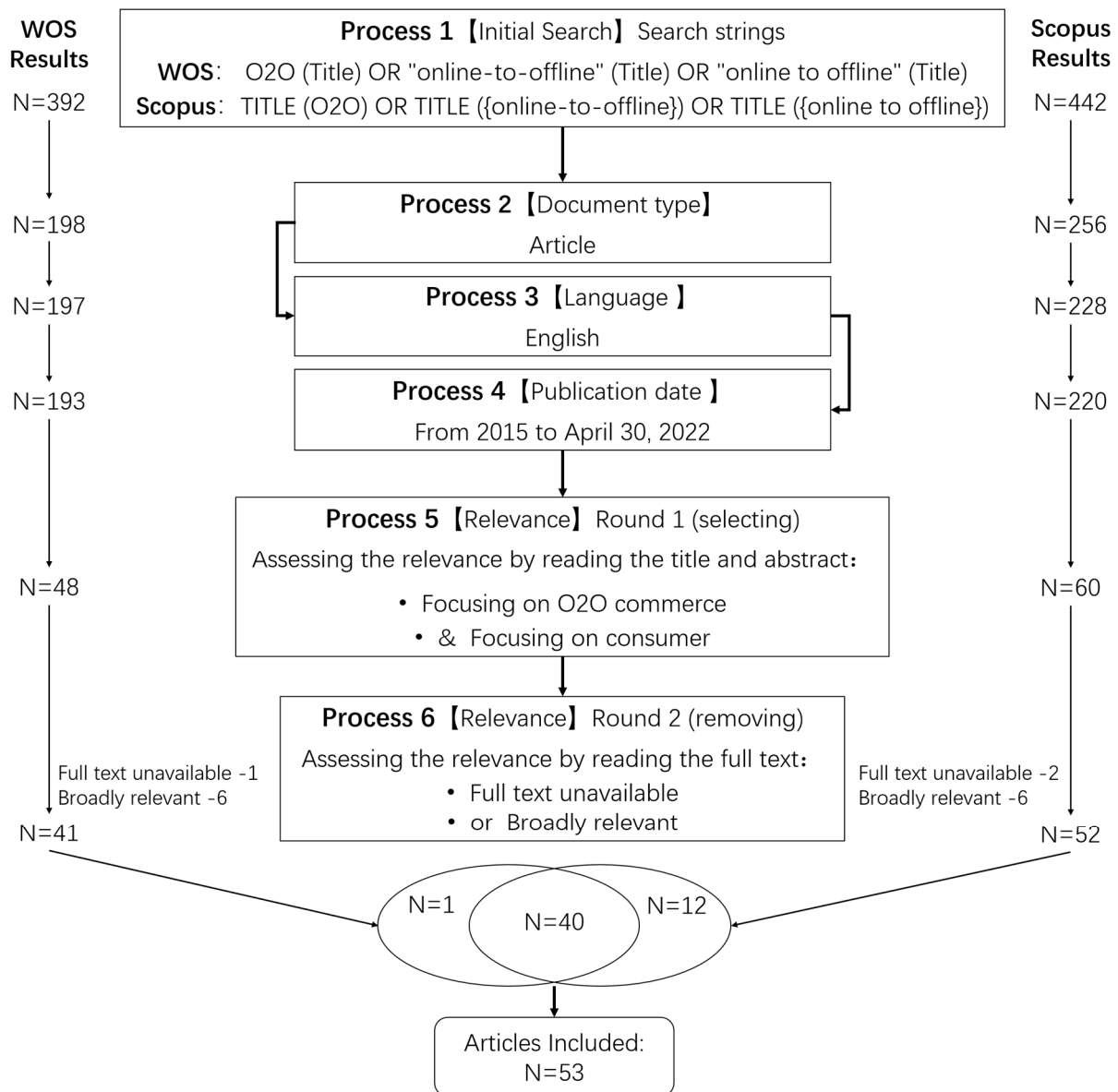
WOS Results

N=392

Process 1 【Initial Search】 Search strings

WOS: O2O (Title) OR "online-to-offline" (Title) OR "online to offline" (Title)

Scopus: TITLE (O2O) OR TITLE ({online-to-offline}) OR TITLE ({online to offline})

Scopus Results

N=442

N=198

Process 2 【Document type】

Article

N=256

N=197

Process 3 【Language】

English

N=228

N=193

Process 4 【Publication date】

From 2015 to April 30, 2022

N=220

Process 5 【Relevance】 Round 1 (selecting)

Assessing the relevance by reading the title and abstract：

- Focusing on O2O commerce
- & Focusing on consumer

N=48

N=60

Process 6 【Relevance】 Round 2 (removing)

Assessing the relevance by reading the full text：

- Full text unavailable
- or Broadly relevant

Full text unavailable -1
Broadly relevant -6

N=41

Full text unavailable -2
Broadly relevant -6

N=52

N=1　　N=40　　N=12

Articles Included:
N=53

Figure 1. Literature searching process.

3.4. Data Extraction and Synthesis

We adopted Zairul's [61–63] approach of using ATLAS.ti 9 software to extract and synthesize data. A thematic analysis procedure was conducted to construct themes over thorough reading on the subject [64]. The themes were identified through an iterative process of comparing similarities and differences between the reviewed articles to achieve consistency [65]. Specifically, we imported the documents of all articles into ATLAS.ti 9 software to extract data for thematic review. The quantitative data used for analysis were derived from the general bibliometric information and directly identifiable industry background and from the focus topic of the research. In the further thematic analysis, we adopted a similar coding approach in the qualitative research, which was regarded as fragmenting and reducing the data, obscuring the dialectic relationship between reading text and writing to some extent [63]. We coded the factors that influence consumer behavior in O2O commerce and grouped them into several themes following several rounds of recoding and code merging.

4. Results and Discussion

The results are divided into quantitative and qualitative parts. The former was used to answer research question 1, and the latter to answer research question 2.

4.1. Quantitative Findings

The research trends, which reflect the trends of the O2O industry to some extent, were examined by the year of publication, industry background, location of research, and theme of consumer behavior. Because the definition of O2O commerce has not yet been unified, we used a relatively broad definition to collect articles. The number of relevant articles published has significantly increased from 2015 to 2021, as shown in Figure 2, but decreased in 2022, partly because the review was conducted in early 2022.
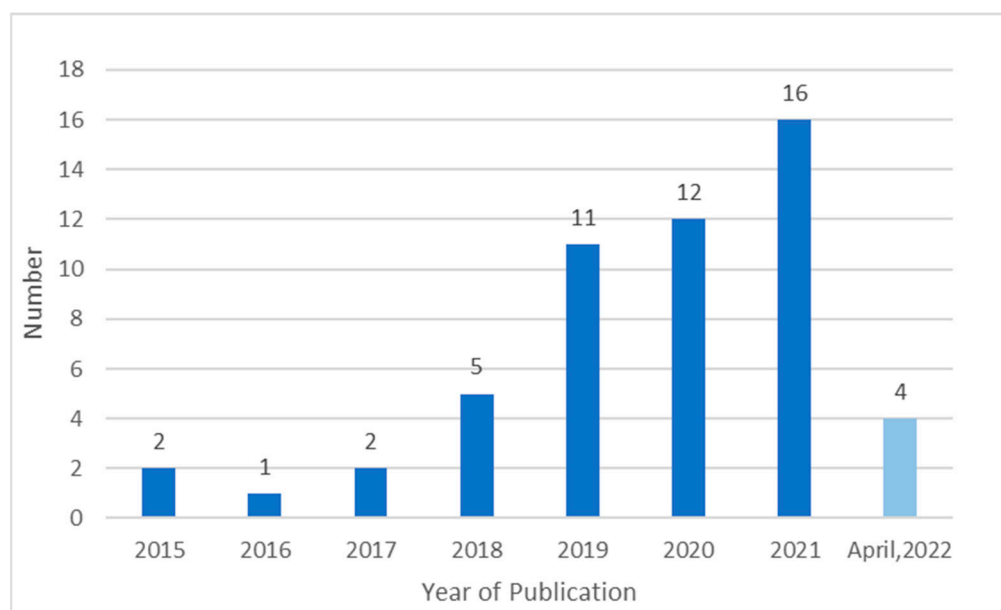

Figure 2. Articles reviewed by the year of publication.

The industries involved in these studies included food, tourism, beauty, car-hailing, furniture, community retail, etc. As shown in Table 2, the food industry is in the spotlight, accounting for almost half of the articles reviewed—especially the food delivery industry in 2021. One possible reason is the surge in consumer demand, which caught researchers' attention during the COVID-19 pandemic. However, O2O commerce is not limited to the food industry, nor is it limited to delivery services; it also includes other various retail and life service industries. Some researchers did not mention specific industries when studying consumer behavior in O2O commerce.

Table 2. Industry background of research by the year.

Industries	2015	2016	2017	2018	2019	2020	2021	2022	Total (n/%)	
Food delivery	1			1	2	2	12	2	20	38%
Food (general)				1	1	3			5	9%
General or not mentioned		1	2	2	6	4	3	1	19	37%
Tourism				1		2	1		4	8%
Beauty					1	1			2	4%
Car-hailing	1								1	2%
Furniture					1				1	2%
Community O2O								1	1	2%

Regarding the research location, we were more interested in where the researchers focused rather than in the authors' affiliation. Only when the focus location was not mentioned was it replaced by that of the first author's affiliation. Table 3 shows the distribution of the country or region studied. It can be seen that the concept of O2O is quite popular in Asia, especially in China, in terms of the number of articles.

Table 3. Countries or regions of research by the year.

Countries/Regions	2015	2016	2017	2018	2019	2020	2021	2022	Total (n/% *)	
China's mainland	2	1		3	7	6	13	3	35	66%
South Korea				1	2	3			6	11%
Taiwan			2	1	1	2			6	11%
Indonesia						1	1		2	4%
United Kingdom						1	1		2	4%
Australia						1			1	2%
Hong Kong					1				1	2%
India							1		1	2%
Macau								1	1	2%
New Zealand							1		1	2%

* Some studies were cross-country; the percentage was based on the total number of articles.

We used a broad definition of consumer behavior to identify themes of concern for researchers. Seven themes, namely customer experience (CE), recommendation and sharing (R&S), attitude (AT), general behavior (GB), loyalty (LT), customer satisfaction (CS), and behavioral intention (BI), were directly identified from the articles reviewed according to the focus topic or endogenous variables of the study (see Table A1 in Appendix A). It should be explained that behavioral intention refers to (re)use intention, (re)purchase intention, or other similar concepts, and that general behavior includes channel choice, actual use/purchase, and other items that are difficult to classify. Figure 3 indicates that behavioral intention was the theme that concerned most researchers, with 27 published articles discussing it, 15 of which highlighted the continuance intention (e.g., reuse or repurchase intention), followed by consumer satisfaction with 23 articles. Some of the articles reviewed involved and highlighted several themes and vice versa (similarly hereafter).
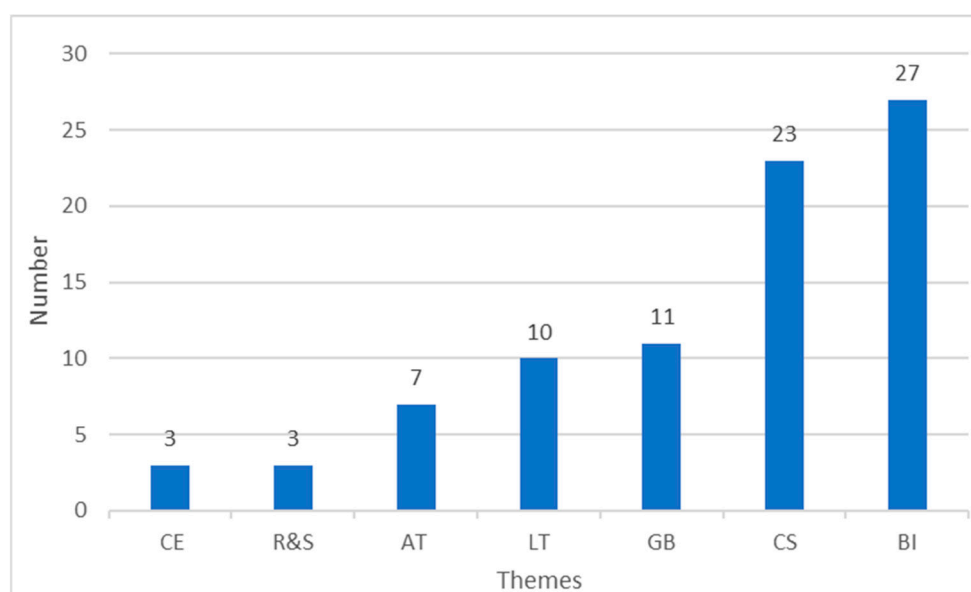

Figure 3. Themes of consumer behavior identified from the reviewed articles.

In summary, this section answers RQ1. The research trends of the consumer-related O2O literature reflected the industry trends to some extent. The reviewed articles discussed various O2O scenarios, the most popular of which is the food industry, as it is the earliest and most typical type of O2O commerce. While both to-shop O2O and to-home O2O have been discussed, few studies have explicitly stated the service type (i.e., to-shop and to-home), and few have attempted to compare the two models. In addition, in the to-home O2O model, only food delivery was discussed. Other delivery services and door-to-door services were ignored, probably because they were not yet popular. O2O commerce is popular in Asia, especially in China, probably due to low labor costs and the popularity of mobile commerce. Most studies focused on consumers' behavioral intention and satisfaction. It is worth noting that Pan et al. [66] discussed green purchasing intention in the context of O2O, indicating that the study of environmental sustainability of O2O commerce has been extended from a supply chain design [67,68] to consumer behavior.

4.2. Qualitative Findings

We reviewed articles and coded the factors that directly or indirectly influence consumers' O2O behavior, which did not include customer experience, attitudes, or satisfaction because they were already considered part of the category of consumer behavior in this paper. The initial codes were recoded, merged, and categorized in several rounds. Those codes which were used infrequently and could not be grouped into any theme were excluded because we were concerned with the factors that were widely considered and examined by researchers. Results that were not significant in quantitative studies were also excluded. In addition, general sociodemographic variables were not considered as they may not be universally applicable to all contexts. Ultimately, eight main themes were generated: (1) service and product quality, (2) technical and utilitarian factors, (3) emotional and hedonic factors, (4) trust and risk, (5) price and cost, (6) social factors, (7) online content, and (8) habit. Each theme is discussed below, and results outside the themes or outside the reviewed articles will be cited for illustrative purposes when needed.

4.2.1. Service and Product Quality

Consistent with traditional offline commerce, service quality in O2O commerce is a topic of broad concern for researchers as it is considered an essential factor that influences consumer behavior. Previous studies usually modeled the perceived service quality as an antecedent to satisfaction, determining consumers' purchase intention [69,70]. Prassida et al. [57] have verified the effect of service quality on consumers' continuance intention through satisfaction in O2O tourism. Other literature evidence is shown in Figure 4. In addition, unlike pure online commerce, in most cases, services have product attributes in O2O commerce. Despite food attributes (e.g., taste [58] and hygiene [12]) being separately mentioned in the O2O food delivery scenario as an aspect of product quality, the boundary between product quality and service quality is obscured, especially in other O2O scenarios. Another difference between O2O commerce and traditional e-commerce is that O2O includes two channels. Therefore, some studies distinguish between online and offline service quality. However, their scope is unclear, possibly because researchers define online and offline according to different definitions of O2O.

Service quality measurements can have different dimensions in different industries or sectors. The five dimensions of SERVQUAL (i.e., reliability, assurance, tangibles, empathy, and responsiveness) initially developed by Parasuraman et al. [71] have been widely used in the O2O literature. SERVQUAL has explained the service quality in the majority of O2O scenarios. Nevertheless, many similar constructs have been proposed to better understand consumer behavior, such as accuracy [16], efficiency [26], and interaction quality [72]. Delivery service quality is a unique service quality dimension in the O2O food delivery scenario. In addition, product quality in O2O was brought into a theme together with service quality in this paper. Figure 4 shows the network diagram for the theme

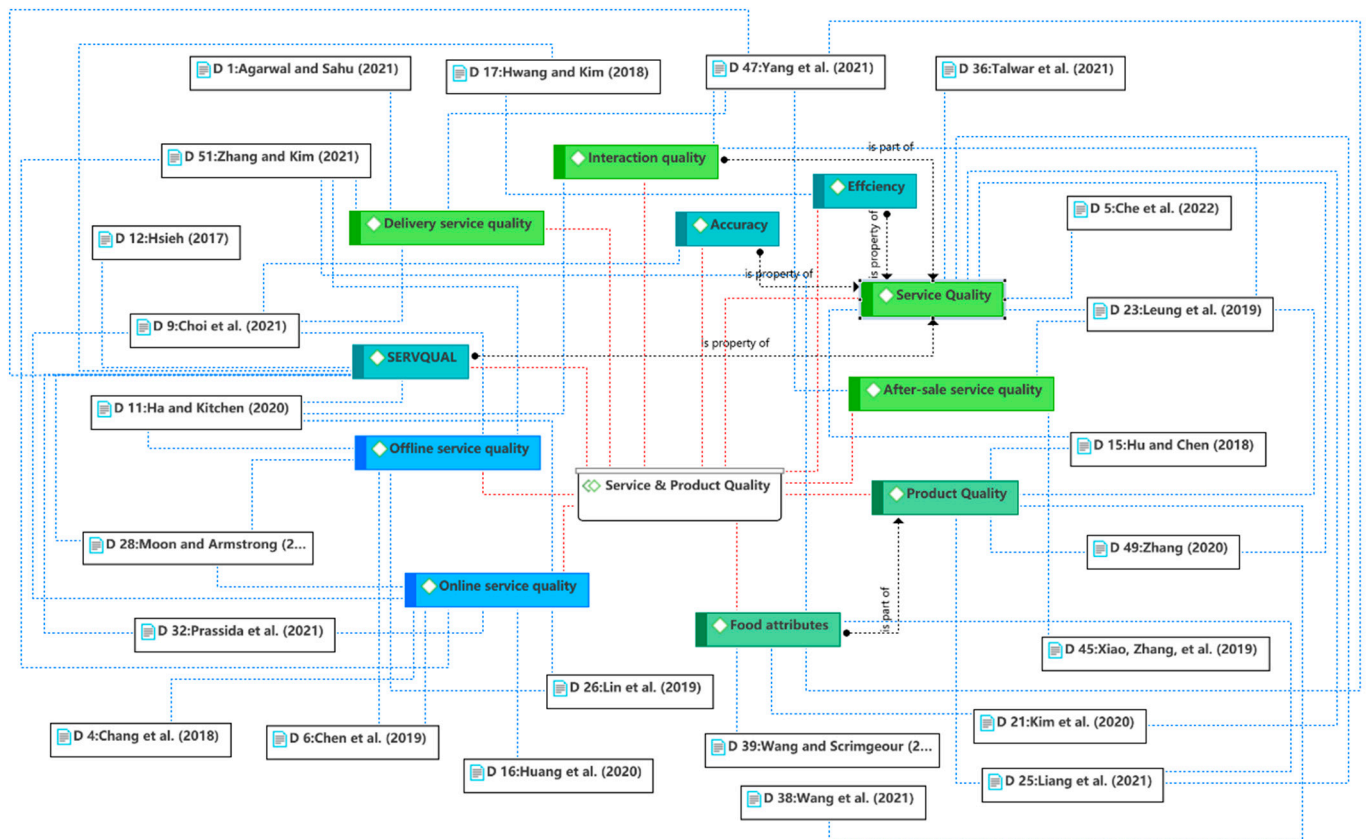construction, showing only partially the inter-code relationships and literature evidence (the same below).

Figure 4. Theme 1: service and product quality [1,10,12,16,19,20,22,26–28,30,57,58,72–81].

4.2.2. Technical and Utilitarian Factors

O2O commerce is the innovation of technology and business; therefore, technology acceptance and use theories have been widely used to explain consumers' O2O behavior, which is in line with the e-commerce literature [41]. Perceived usefulness and ease of use derived from the TAM proposed by Davis [43] and Davis et al. [44] were two of the most popular constructs used to predict consumer behavior in the O2O literature. Technical attributes, especially usefulness, emphasize the extrinsic (utilitarian) motivation of consumers' information technology use, which refers to the performance of a particular activity to achieve some objective distinct from the activity itself [82]. For example, consumers use O2O food delivery services instead of cooking by themselves to seek convenience [83], another widely discussed determinant of consumers' O2O behavior. The compatibility adapted from the diffusion of innovations theory developed by Rogers [84] is another factor that determines consumers' technology use behavior, whose similar constructs are facilitating conditions and perceived behavior control [45,46]. Some researchers also discussed the technical attributes of O2O commerce from the perspective of system quality, such as system safety [16,32] and privacy protection [14]. These technical or utilitarian factors were mentioned in the reviewed articles and constructed into a theme, as shown in Figure 5.
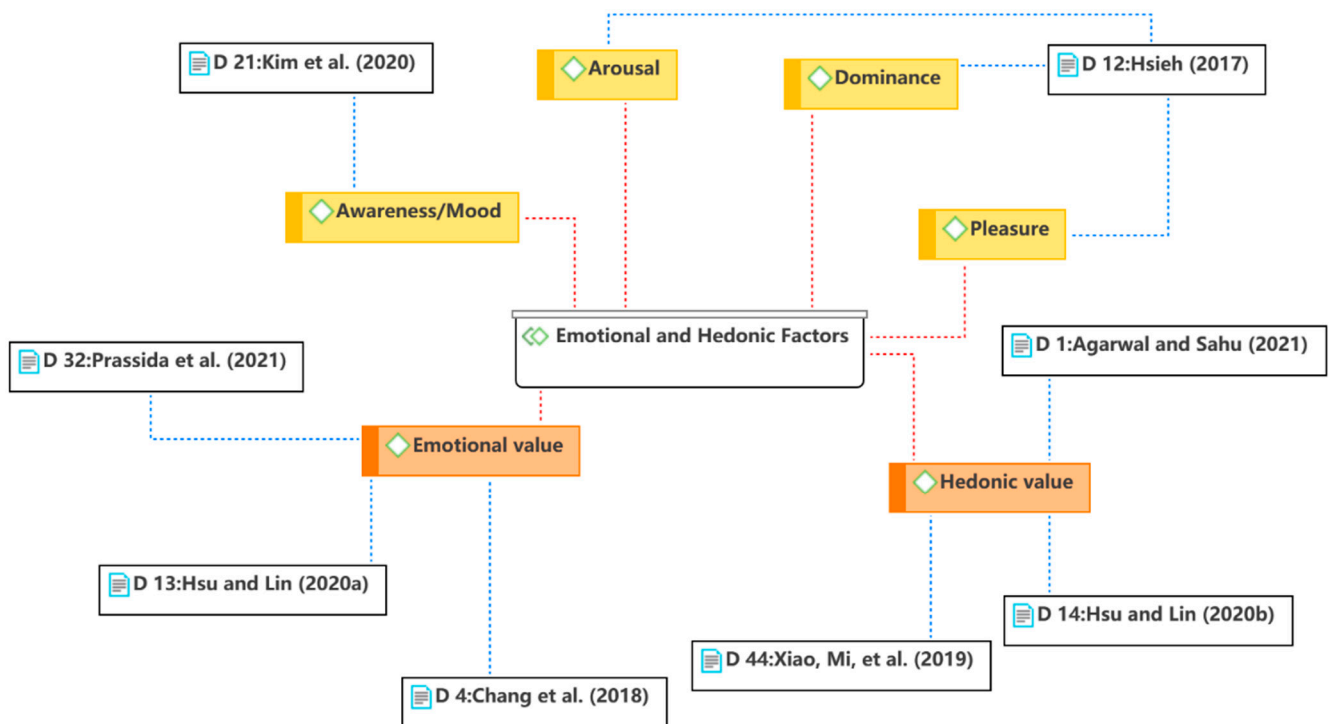
Figure 5. Theme 2: technical and utilitarian factors [5,10,11,16,17,20,28,32,57,58,73,76,78–80,83,85–90].

4.2.3. Emotional and Hedonic Factors

The cognition-based technical factor (e.g., perceived usefulness) may not accurately reflect the motivation of O2O consumers [86]. Studies have confirmed that emotion-based intrinsic (hedonic) motivation is another critical factor influencing consumer behavior in O2O commerce (see Figure 6). Consumers performing a particular activity for the activity itself, to experience pleasure and satisfaction inherent to the activity, is called intrinsic motivation [82]. In addition, the emotion itself (e.g., pleasure and arousal) directly or indirectly influence consumer decision-making [75,77]. More details are shown in Figure 6. Nevertheless, researchers should be circumspect about using hedonic factors to predict consumers' behavior in O2O services focused on utilitarian value [91].

Figure 6. Theme 3: emotional and hedonic factors [17,57,73,75–77,86,87].

4.2.4. Trust and Risk

Because of the implicit uncertainty of the e-commerce environment, trust and perceived risk have been widely discussed. Trust and perceived risk are usually negatively correlated and directly or indirectly influence consumers' behavioral intention in e-commerce [92,93]. Most studies in the O2O context have obtained similar results, and the literature evidence is shown in Figure 7. However, O2O commerce involves multiple players, to whom consumers are more closely connected. Therefore, some studies have discussed different types of trust, such as trust in the online platform, trust in the user community, and trust in the focal offline merchant [17,19]. O2O commerce is riskier than other business models for consumers because they cannot easily return or change their mind if they are not satisfied with the product or service, which results in more caution in making purchases [9,94]. In addition, reputation or other related factors play a similar role to trust and perceived risk, and can sometimes indirectly influence consumer behavior as antecedents of trust or perceived risk [8]. Figure 7 represents the construction of this theme.
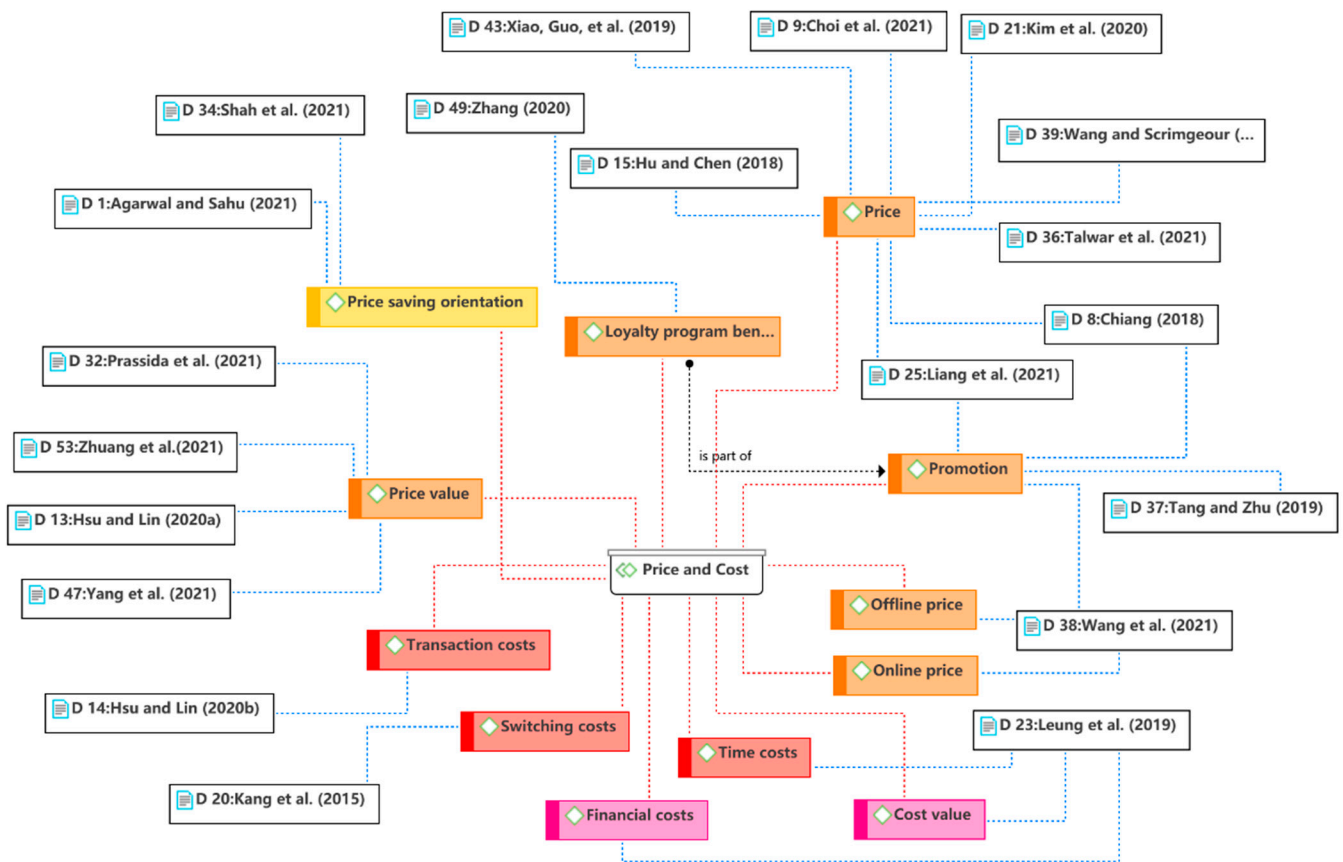
Figure 7. Theme 4: trust and risk [5,8–10,17,19,20,22,27,28,30,66,78,80,90,94–97].

4.2.5. Price and Cost

Price is an unavoidable topic in marketing because it is considered one of the pivotal determinants of consumer behavior [98]. Consumers always like to compare prices and look for profitable deals [73], especially in the e-commerce environment, which makes it easier to compare prices [99]. The price factor has been widely mentioned in O2O literature. The constructs related to it, such as value for money and price saving orientation, have been confirmed to directly or indirectly affect consumer behavior [11,73,87]. Wang et al. [30] mentioned online and offline prices, indicating that consumers consider both online and offline factors in O2O commerce. Cost is a factor associated with the price, wherein financial costs and cost value are similar to the price factors discussed above. Previous studies have shown that non-monetary costs (e.g., time costs, switching costs, searching costs, etc.) are related to consumers' switching between channels (i.e., showrooming) [100] and switching between platforms [101]. In O2O commerce, Hsu and Lin [86] have found that transaction costs have a negative and significant effect on the continuance intention of consumers to use the O2O app. More literature evidence related to price and cost is shown in Figure 8.

Figure 8. Theme 5: price and cost [1,8,10–12,16,30,57,58,73,77–80,86,87,89,96,97,102].

4.2.6. Social Factors

Social factors are another theme that emerged from the thematic review, as shown in Figure 9. The subjective norm derived from the theory of reasoned action (TRA) introduced by Fishbein and Ajzen [38] is the most commonly used construct related to social factors in the literature. A similar construct is the reference group [28]. The social value refers to the utility derived from the O2O service in enhancing consumers' social self-concept [57,76,87]. Social enhancement and social interaction emphasize that interaction with others can enhance social approval and acceptance [20,75]. Social factors have been among the crucial factors considered concerning information technology consumers [45,46], which is also true in O2O commerce. In addition, Yang et al. [12] reported that interaction between restaurant staff and customers still plays a significant role in O2O commerce. The social interaction in O2O commerce is more than in traditional e-commerce, and includes online and offline interactions.
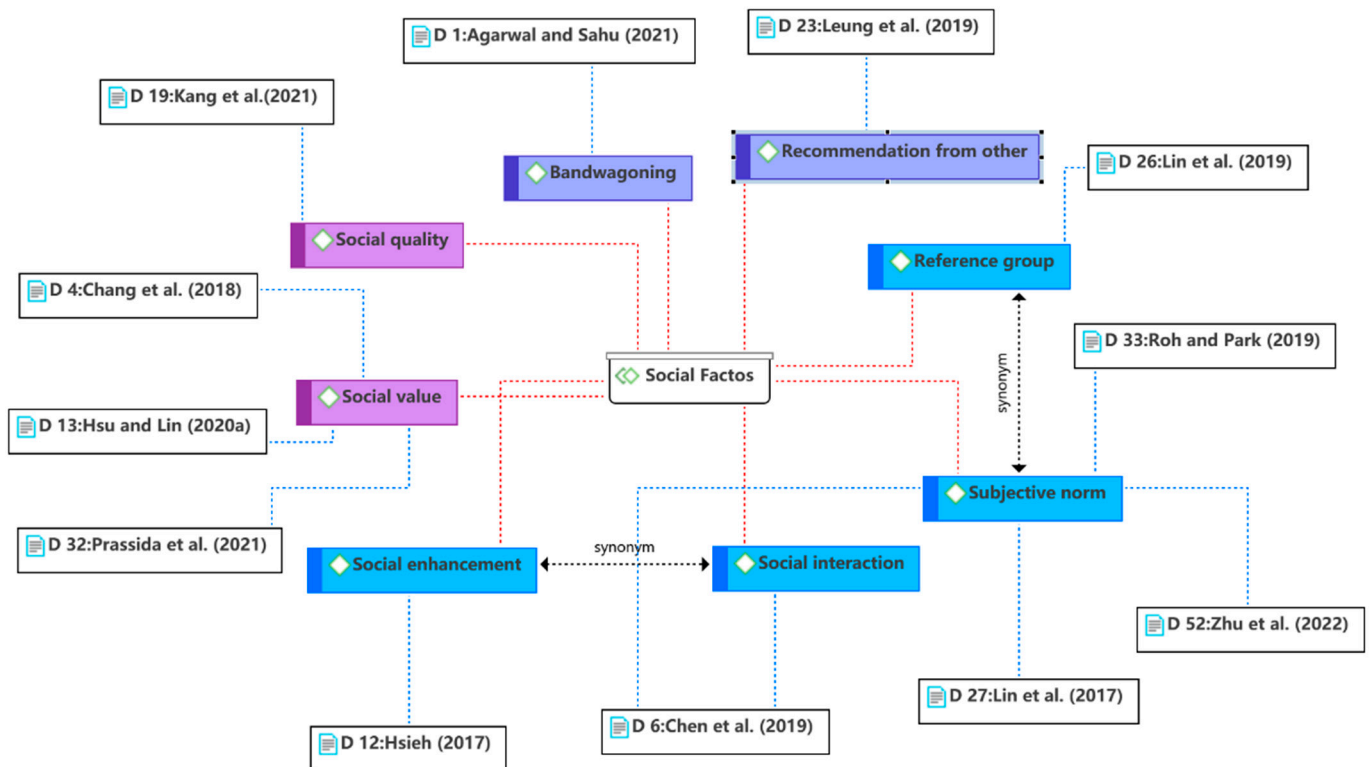
Figure 9. Theme 6: social factors [20,28,32,57,73,75,76,80,83,87,90,103].

4.2.7. Online Content

Similar to traditional e-commerce, the offline stores participating in O2O commerce upload information to O2O platforms, where consumers can also write online reviews (including fake reviews). Specifically, store locations, product or service details, operating time, discounts, store ratings, customer reviews, etc., constitute the online content of O2O commerce [8]. Marketers and researchers widely regard online content as essential in consumers' decision-making. For instance, online information quality is one of the most commonly discussed factors, and has been shown to influence O2O consumer loyalty through satisfaction [14]. In addition, the perceived effectiveness of online reviews and store ratings on the O2O platform positively affect consumers' trust in offline stores, thus affecting consumers' purchase intention [9]. Many similar codes from the reviewed articles constructed this theme, as shown in Figure 10.
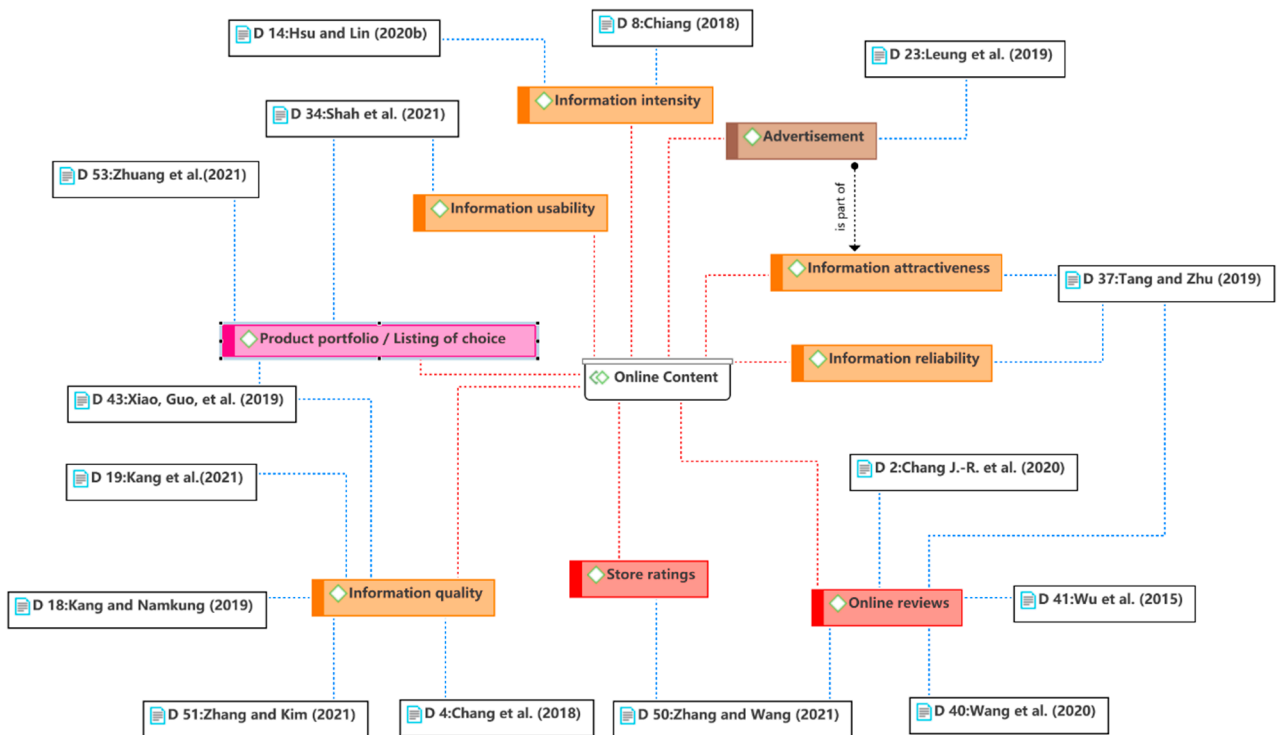
Figure 10. Theme 7: online content [5,8,9,11,25,74,76,80,85,86,89,96,97,103,104].

4.2.8. Habit

In the extension of the unified theory of acceptance and use of technology (UTAUT2), Venkatesh et al. [46] introduced habit to predict consumers' technology use behavior. Agarwal and Sahu [73] have verified the effect of habit on the reuse intention of consumers in the context of O2O food delivery. Similarly, inertia influences consumer loyalty to the platform through switching costs [102]. Network involvement, which refers to the length of time customers spend accessing the Internet and their familiarity with it, directly influences consumers' channel choice behavior in O2O commerce [95]. In addition, previous experiences or frequency of use affect consumer behavior in different forms (e.g., moderator). Figure 11 shows the composition of the theme.
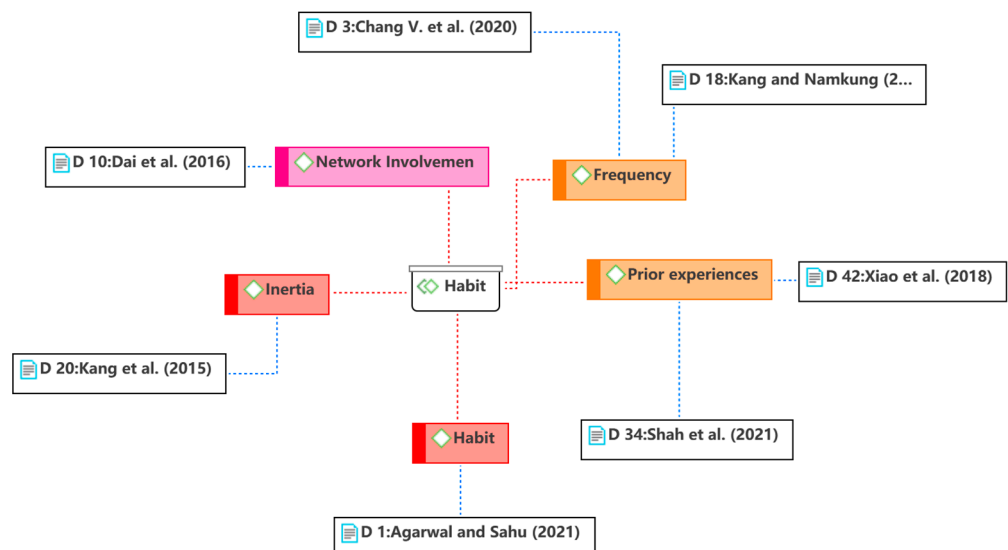
Figure 11. Theme 8: habit [5,11,73,94,95,102,105].

This section identified eight themes (factors), answering RQ2. The thematic results were similar to previous studies [40,41], indicating that these eight categories of factors have been broadly followed and validated. Table 4 displays the matching of the thematic results with the previous theories and models. UTAUT2 matched five themes and ISSM matched three. However, price value in UTAUT2 involves the cost of using an information system (e.g., an O2O app) rather than the cost of the target product or service. Service quality in ISSM refers to system (online) service quality rather than including offline service quality. The results also showed some differences between O2O commerce and pure online shopping. For example, O2O consumers consider both online and offline factors and are even more concerned with offline factors [9] (e.g., offline service quality). Another example is that trust involves a broader range of objects in O2O commerce, including offline merchants, online platforms, user communities, etc. [17,19].

Table 4. Previous theories/models vs. Thematic results.

Theories/Models	Exogenous Variables (Factors)	Corresponding Themes
TRA	Attitude Subjective norm	/ Social factors
TPB	Perceived behavioral control Subjective norm	Technical and utilitarian factors Social factors
TAM	Perceived usefulness Perceived Ease of Use	Technical and utilitarian factors
UTAUT	Performance expectancy Effort expectancy Facilitating conditions	Technical and utilitarian factors
	Social influence	Social factors
UTAUT2	Performance expectancy Effort expectancy Facilitating conditions	Technical and utilitarian factors
	Social influence Hedonic motivation Price value Habit	Social factors Emotional and hedonic factors Price and cost Habit
ISSM	Information quality System quality Service quality	Online content Technical and utilitarian factors Service and product quality
ECM	Perceived usefulness Confirmation	Technical and utilitarian factors /

In addition, although some codes did not form any themes, such as social structure guarantee [32] and green packing [12,21,66], they are worth discussing. Social structure guarantee is a legal aspect that may influence consumers' O2O behavior. It refers to the measures taken to protect the rights and interests of consumers, including laws, regulations, policies, industry norms, etc. [106]. The social structure guarantee is in line with Peráček's [107] discussion of consumer protection in e-commerce legislation. According to Mcknight et al. [108], a good social structure guarantee increases one's confidence in others and reduces consumers' risk perceptions. Zhu et al. [32] have found that the social structure guarantee significantly affects consumers' continuance intention to use the community O2O platform. Meanwhile, the environmental sustainability of O2O commerce has raised concerns. For example, the rapid expansion of the O2O food delivery industry has brought about environmental problems [66]. Takeaway product packaging materials are difficult to degrade and cannot be recycled, resulting in serious environmental pollution [109]. Studies have shown that green packaging is one factor that affects consumer experience and perceived value [12,21,66], indicating that consumers are becoming more environmentally

conscious. Nonetheless, some customers still criticized green packaging for its protection and durability [12].

5. Conclusions

This paper set out to review the literature on O2O commerce focusing on consumer behavior from 2015 to April 2022, to provide an overview of O2O research and its patterns. A thematic review approach using ATLAS.ti 9 software was conducted in this paper. The quantitative findings have presented the current trends in O2O commerce research, which partly reflect the trends in the O2O industry. O2O commerce plays an increasingly important role in consumers' lives and covers a wide range of businesses, among which the food industry is the most concerned. In the future, the role of offline brick-and-mortar businesses may change from providers of products to those of services or living solutions [3]. Possible examples are community O2O [32] and clothing customization O2O [31]. The second aim of this study was to identify the factors influencing consumers' O2O behavior that are of most concern for researchers. Eight main clusters of influencing factors have been shown according to the qualitative results: (1) service and product quality, (2) technical and utilitarian factors, (3) emotional and hedonic factors, (4) trust and risk, (5) price and cost (6) social factors, (7) online content, and (8) habit. The qualitative results are similar to those of previous e-commerce studies; however, the way that these identified factors work may differ.

5.1. Contributions

This paper is probably the first thematic review that focuses on O2O commerce and its associated consumer behavior, which brings contributions in two ways. Firstly, this paper adds beneficial insights into determining sustainable management strategies in O2O commerce. Stakeholders, including merchants both already in the O2O market and those intending to enter this market, can use the findings to develop market strategies to ensure the sustainability of their businesses. Secondly, this paper lays the groundwork for future research into understanding and conceptualizing consumers' O2O behavior. It is comprehensive enough to help understand how factors are combined and provides enough details to allow researchers to investigate sub-domains of consumers' O2O behavior.

5.2. Future Research Directions

This paper identifies the following future research directions.

5.2.1. Theories and Models

Firstly, while the factors identified are similar to previous studies, more evidence is still needed to demonstrate the applicability of previously adopted theories and models in O2O commerce. Future research is encouraged to address this issue and compare O2O commerce with other business models. Secondly, although the O2O commerce scenario is increasingly diversified with the innovation of technology and business models, its essence remains unchanged: the integration of online and offline. Therefore, a unified or universal framework to explain consumer behavior in O2O commerce is of theoretical and practical significance, and could be considered one of the future directions. On the other hand, there is an obvious, but rarely mentioned, market segmentation of O2O commerce, namely, to-home (e.g., food delivery service) versus to-shop (e.g., food in-store service), which was similarly mentioned by Wang et al. [85]. Future research is encouraged to distinguish or compare the consumer behavior in these two modes, as they may differ essentially.

5.2.2. Dependent Variables or Research Focuses

Although O2O commerce is becoming more popular, its business sustainability and intensity are still unknown. Hence, future research could continue exploring consumers' continuance intention to use O2O services. Consumers' sustainable consumption behavior (i.e., green purchase behavior) in O2O commerce also deserves concern. The sustainability

of O2O commerce has always been the focus of supply chain and system designers [67,68], wherein environmental friendliness is considered one of the key indicators of supply chain sustainability. However, most companies face the challenge of balancing environmental protection and profitability [66], as green products or services may increase the cost of purchase for consumers, leading to consumer complaints. Although it has attracted much attention from researchers, policymakers, and marketers [110], the consumers' sustainable consumption behavior has rarely been discussed in the existing O2O literature. Therefore, it is necessary to study the attitudes and intentions of consumers toward sustainable consumption to explore the balance between business sustainability and environmental sustainability in O2O commerce.

5.2.3. Independent Variables or Factors

Firstly, future research should conceptualize the consumer behavior of O2O commerce at the feature level. Most of the previous literature ignored the influence of O2O features on consumer behavior [88]. Unlike traditional e-commerce, offline factors are one of the features of O2O commerce because the engagement of the O2O consumers depends heavily on whether they can get the expected services or products from offline channels [9]. However, the offline factors have only been sporadically highlighted as features in the literature. Secondly, the legal aspect is another factor that should be considered for future research. Legislative issues in e-commerce, such as consumer protection, have received much attention [107]. Zhu et al.'s [32] work has shown that social structure guarantee (i.e., consumer protection) affects consumers' O2O behavior. Similarly, other studies have shown the essential role of legislation in the smart city, financial innovation, and the changing society at large [111–113]. However, few studies have focused on the legal aspect of O2O commerce. Therefore, the legal aspect, which may be an essential factor for the sustainability of e-commerce, is worth studying, especially in an emerging e-commerce such as O2O.

5.3. Limitations

Several limitations need to be noted regarding the current review paper. First, we collected only peer-reviewed journal articles written in English and were available in full text. This means that some industries and influencing factors of O2O commerce, such as clothing customization O2O, may not have been included in this review [31]. Furthermore, we assumed that articles without "O2O" or "online to offline" in the title were not focused on O2O commerce, which may have resulted in some valuable literature being missed. Second, because researchers have not reached a consensus on the definition of O2O, we adopted a relatively broad definition to select articles. Similarly, we used a broad definition of consumer behavior because studies on particular aspects (e.g., consumer loyalty) are limited in the context of O2O. Last, the non-systematic review method did not apply to examining previous studies' robustness. Notwithstanding these limitations, this paper offers valuable insights into the literature and industry of O2O commerce in a way that presents future research directions.

Appendix A

Table A1. A list of articles included in the review.

No.	Articles	CE	R&S	AT	LT	GB	CS	BI
1	Agarwal and Sahu (2021) [73] **						1	1 *
2	Chang J.-R. et al. (2020) [104]					1		
3	Chang V. et al. (2020) [105]					1		
4	Chang et al. (2018) [76]						1	1
5	Che et al. (2022) [81]						1	1 *
6	Chen et al. (2019) [20]						1	1
7	Cheong and Law (2022) [21]					1		
8	Chiang (2018) [97]					1		
9	Choi et al. (2021) [16]						1	1 *
10	Dai et al. (2016) [95]					1		
11	Ha and Kitchen (2020) [72]				1		1	
12	Hsieh (2017) [75]		1		1			1 *
13	Hsu and Lin (2020a) [87]				1		1	
14	Hsu and Lin (2020b) [86]						1	1 *
15	Hu and Chen (2018) [79]						1	
16	Huang et al. (2020) [27]						1	1
17	Hwang and Kim (2018) [26]				1		1	
18	Kang and Namkung (2019) [5]			1				1
19	Kang et al. (2021) [103]						1	
20	Kang et al. (2015) [102]				1			
21	Kim et al. (2020) [77]				1			
22	Kim et al. (2021) [14]				1		1	
23	Leung et al. (2019) [80]				1			
24	Li and Wang (2022) [114]					1		
25	Liang et al. (2021) [1]						1	
26	Lin et al. (2019) [28]			1				
27	Lin et al. (2017) [90]			1				1
28	Moon and Armstrong (2020) [22]						1	1 *
29	Pan et al. (2021) [66]					1	1	1
30	Pei et al. (2020) [115]	1						
31	Pei et al. (2019) [116]	1			1		1	
32	Prassida et al. (2021) [57]						1	1 *
33	Roh and Park (2019) [83]							1
34	Shah et al. (2021) [11] **						1	1 *
35	Shi et al. (2021) [117]	1						
36	Talwar et al. (2021) [10]			1				
37	Tang and Zhu (2019) [96]							1
38	Wang et al. (2021) [30]					1		
39	Wang and Scrimgeour (2021) [58]			1				1
40	Wang et al. (2020) 85]			1		1		
41	Wu et al. (2015) [25]			1				1
42	Xiao et al. (2018) [94]							1 *
43	Xiao and Guo et al. (2019) [8]				1		1	
44	Xiao and Mi et al. (2019) [17]		1					1 *
45	Xiao and Zhang et al. (2019) [19]							1 *
46	Xu and Huang (2019) [118]					1		
47	Yang et al. (2021) [12]					1		
48	Yang et al. (2020) [88]			1				1
49	Zhang (2020) [78]							1 *
50	Zhang and Wang (2021) [9]							1
51	Zhang and Kim (2021) [74]						1	1 *
52	Zhu et al. (2022) [32]						1	1 *
53	Zhuang et al. (2021) [89]						1	1 *
	Total	3	3	7	10	11	23	27 (15 *)

CE: customer experience; R&S: recommendation and sharing; AT: attitude; GB: general behavior; LT: loyalty; CS: customer satisfaction; BI: behavioral intention. * Continuance intention was highlighted. ** Article in press (early access).

References

1. Liang, D.; Dai, Z.; Wang, M. Assessing Customer Satisfaction of O2O Takeaway Based on Online Reviews by Integrating Fuzzy Comprehensive Evaluation with AHP and Probabilistic Linguistic Term Sets. *Appl. Soft Comput.* **2021**, *98*, 106847. [CrossRef]
2. Tsai, T.-M.; Wang, W.-N.; Lin, Y.-T.; Choub, S.-C. An O2O Commerce Service Framework and Its Effectiveness Analysis with Application to Proximity Commerce. *Procedia Manuf.* **2015**, *3*, 3498–3505. [CrossRef]
3. Liao, S.-H.; Yang, L.-L. Mobile Payment and Online to Offline Retail Business Models. *J. Retail. Consum. Serv.* **2020**, *57*, 102230. [CrossRef]
4. Xiao, S.; Dong, M. Hidden Semi-Markov Model-Based Reputation Management System for Online to Offline (O2O) e-Commerce Markets. *Decis. Support Syst.* **2015**, *77*, 87–99. [CrossRef]
5. Kang, J.-W.; Namkung, Y. The Information Quality and Source Credibility Matter in Customers' Evaluation toward Food O2O Commerce. *Int. J. Hosp. Manag.* **2019**, *78*, 189–198. [CrossRef]
6. Rampell, A. Why Online2Offline Commerce Is a Trillion Dollar Opportunity. Available online: https://social.techcrunch.com/2010/08/07/why-online2offline-commerce-is-a-trillion-dollar-opportunity/ (accessed on 1 June 2022).
7. Phang, C.W.; Tan, C.-H.; Sutanto, J.; Magagna, F.; Lu, X. Leveraging O2O Commerce for Product Promotion: An Empirical Investigation in Mainland China. *IEEE Trans. Eng. Manag.* **2014**, *61*, 623–632. [CrossRef]
8. Xiao, L.; Guo, Z.; D'Ambra, J. Benefit-Based O2O Commerce Segmentation: A Means-End Chain Approach. *Electron. Commer. Res.* **2019**, *19*, 409–449. [CrossRef]
9. Zhang, X.; Wang, T. Understanding Purchase Intention in O2O E-Commerce: The Effects of Trust Transfer and Online Contents. *J. Theor. Appl. Electron. Commer. Res.* **2021**, *16*, 125–139. [CrossRef]
10. Talwar, S.; Dhir, A.; Scuotto, V.; Kaur, P. Barriers and Paradoxical Recommendation Behaviour in Online to Offline (O2O) Services. A Convergent Mixed-Method Study. *J. Bus. Res.* **2021**, *131*, 25–39. [CrossRef]
11. Shah, A.M.; Yan, X.; Qayyum, A. Adoption of Mobile Food Ordering Apps for O2O Food Delivery Services during the COVID-19 Outbreak. *Br. Food J.* **2021**. [CrossRef]
12. Yang, F.X.; Li, X.; Lau, V.M.-C.; Zhu, V.Z. To Survive or to Thrive? China's Luxury Hotel Restaurants Entering O2O Food Delivery Platforms amid the COVID-19 Crisis. *Int. J. Hosp. Manag.* **2021**, *94*, 102855. [CrossRef] [PubMed]
13. He, B.; Mirchandani, P.; Shen, Q.; Yang, G. How Should Local Brick-and-Mortar Retailers Offer Delivery Service in a Pandemic World? Self-Building Vs. O2O Platform. *Transp. Res. Part E Logist. Transp. Rev.* **2021**, *154*, 102457. [CrossRef] [PubMed]
14. Kim, Y.; Wang, Q.; Roh, T. Do Information and Service Quality Affect Perceived Privacy Protection, Satisfaction, and Loyalty? Evidence from a Chinese O2O-Based Mobile Shopping Application. *Telemat. Inform.* **2021**, *56*, 101483. [CrossRef]
15. He, B.; Gupta, V.; Mirchandani, P. Online Selling through O2O Platform or on Your Own? Strategic Implications for Local Brick-and-Mortar Stores. *Omega* **2021**, *103*, 102424. [CrossRef]
16. Choi, Y.; Zhang, L.; Debbarma, J.; Lee, H. Sustainable Management of Online to Offline Delivery Apps for Consumers' Reuse Intention: Focused on the Meituan Apps. *Sustainability* **2021**, *13*, 3593. [CrossRef]
17. Xiao, L.; Mi, C.; Zhang, Y.; Ma, J. Examining Consumers' Behavioral Intention in O2O Commerce from a Relational Perspective: An Exploratory Study. *Inf. Syst. Front.* **2019**, *21*, 1045–1068. [CrossRef]
18. Huang, J.; Zhou, J.; Liao, G.; Mo, F.; Wang, H. Investigation of Chinese Students' O2O Shopping through Multiple Devices. *Comput. Hum. Behav.* **2017**, *75*, 58–69. [CrossRef]
19. Xiao, L.; Zhang, Y.; Fu, B. Exploring the Moderators and Causal Process of Trust Transfer in Online-to-Offline Commerce. *J. Bus. Res.* **2019**, *98*, 214–226. [CrossRef]
20. Chen, C.-C.; Hsiao, K.-L.; Hsieh, C.-H. Understanding Usage Transfer Behavior of Two Way O2O Services. *Comput. Hum. Behav.* **2019**, *100*, 184–191. [CrossRef]
21. Cheong, F.; Law, R. Will Macau's Restaurants Survive or Thrive after Entering the O2O Food Delivery Platform in the COVID-19 Pandemic? *Int. J. Environ. Res. Public. Health* **2022**, *19*, 5100. [CrossRef]
22. Moon, Y.; Armstrong, D.J. Service Quality Factors Affecting Customer Attitudes in Online-to-Offline Commerce. *Inf. Syst. E-Bus. Manag.* **2020**, *18*, 1–34. [CrossRef]
23. Ryu, M.H.; Kim, E.; Lee, S.Y. How Offline Retailers Adopt O2O: Neighboring Star Shops and Their Proximity Effect. *Telecommun. Policy* **2022**, *46*, 102278. [CrossRef]
24. Ji, J.; Zhang, Z.; Yang, L. Comparisons of Initial Carbon Allowance Allocation Rules in an O2O Retail Supply Chain with the Cap-and-Trade Regulation. *Int. J. Prod. Econ.* **2017**, *187*, 68–84. [CrossRef]
25. Wu, T.-J.; Zhao, R.-H.; Tzeng, S.-Y. An Empirical Research of Consumer Adoption Behavior on Catering Transformation to Mobile O2O. *J. Interdiscip. Math.* **2015**, *18*, 769–788. [CrossRef]
26. Hwang, S.; Kim, S. Does MIM Experience Affect Satisfaction with and Loyalty toward O2O Services? *Comput. Hum. Behav.* **2018**, *82*, 70–80. [CrossRef]
27. Huang, C.-C.; Chang, Y.-W.; Hsu, P.Y.; Prassida, G.F. A Cross-Country Investigation of Customer Transactions from Online to Offline Channels. *Ind. Manag. Data Syst.* **2020**, *120*, 2397–2422. [CrossRef]
28. Lin, M.; Wang, Z.; Zhang, Z.; Cao, Y. Research on Consumers' Attitudes in China about Using Online-to-Offline Mode for Purchasing Wooden Furniture. *For. Prod. J.* **2019**, *69*, 159–172. [CrossRef]
29. Shen, C.-W.; Chen, M.; Wang, C.-C. Analyzing the Trend of O2O Commerce by Bilingual Text Mining on Social Media. *Comput. Hum. Behav.* **2019**, *101*, 474–483. [CrossRef]

30. Wang, C.; Wang, Y.; Wang, J.; Xiao, J.; Liu, J. Factors Influencing Consumers' Purchase Decision-Making in O2O Business Model: Evidence from Consumers' Overall Evaluation. *J. Retail. Consum. Serv.* **2021**, *61*, 102565. [CrossRef]

31. Li, H.; Gu, L.; Gu, W.; Liu, X. Research on Online-to-Offline Clothing Customization Mode Based on Consumer Perceived Value. *Fangzhi Xuebao/J. Text. Res.* **2020**, *41*, 128–135. [CrossRef]

32. Zhu, Y.; Wei, Y.; Zhou, Z.; Jiang, H. Consumers' Continuous Use Intention of O2O E-Commerce Platform on Community: A Value Co-Creation Perspective. *Sustainability* **2022**, *14*, 1666. [CrossRef]

33. Statista. Gross Merchandise Value of the To-Shop O2O Market in China from 1st Half of 2016 to 1st Half of 2019. Available online: https://www.statista.com/statistics/1147378/china-gmv-of-to-shop-o2o-market/ (accessed on 1 June 2022).

34. Statista. Gross Merchandise Value of To-Home O2O Market in China from 1st Half of 2016 to 1st Half of 2019. Available online: https://www.statista.com/statistics/1147402/china-gmv-of-to-home-o2o-market/ (accessed on 1 June 2022).

35. Jacoby, J. Consumer Psychology: An Octennium. *Annu. Rev. Psychol.* **1976**, *27*, 331–358. [CrossRef]

36. Kardes, F.R.; Cronley, M.L.; Cline, T.W. *Consumer Behavior*; South-Western Cengage Learning: Mason, OH, USA, 2010; ISBN 978-0-538-74540-6.

37. Howard, J.A.; Sheth, J.N. *The Theory of Buyer Behavior*; Wiley: New York, NY, USA, 1969; ISBN 978-0-471-41657-9.

38. Fishbein, M.; Ajzen, I. *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*; Addison-Wesley Series in Social Psychology; Addison-Wesley: Boston, MA, USA, 1975; ISBN 978-0-201-02089-2.

39. Cai, S.; Xu, Y. Effects of Outcome, Process and Shopping Enjoyment on Online Consumer Behaviour. *Electron. Commer. Res. Appl.* **2006**, *5*, 272–281. [CrossRef]

40. Hwang, Y.; Jeong, J. Electronic Commerce and Online Consumer Behavior Research: A Literature Review. *Inf. Dev.* **2016**, *32*, 377–388. [CrossRef]

41. Haryanti, T.; Subriadi, A.P. Factors and Theories for E-Commerce Adoption: A Literature Review. *Int. J. Electron. Commer. Stud.* **2020**, *11*, 87–105. [CrossRef]

42. Ajzen, I. The Theory of Planned Behavior. *Organ. Behav. Hum. Decis. Process.* **1991**, *50*, 179–211. [CrossRef]

43. Davis, F.D. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Q.* **1989**, *13*, 319. [CrossRef]

44. Davis, F.D.; Bagozzi, R.P.; Warshaw, P.R. User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Manag. Sci.* **1989**, *35*, 982–1003. [CrossRef]

45. Venkatesh, V.; Morris, M.G.; Davis, G.B.; Davis, F.D. User Acceptance of Information Technology: Toward a Unified View. *MIS Q.* **2003**, *27*, 425. [CrossRef]

46. Venkatesh, V.; Thong, J.Y.L.; Xu, X. Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Q.* **2012**, *36*, 157. [CrossRef]

47. DeLone, W.H.; McLean, E.R. The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *J. Manag. Inf. Syst.* **2003**, *19*, 9–30. [CrossRef]

48. Bhattacherjee, A. Understanding Information Systems Continuance: An Expectation-Confirmation Model. *MIS Q.* **2001**, *25*, 351. [CrossRef]

49. Harasis, A.A.; Qureshi, M.I.; Rasli, A. Development of Research Continuous Usage Intention of E-Commerce. A Systematic Review of Literature from 2009 to 2015. *Int. J. Eng. Technol.* **2018**, *7*, 73. [CrossRef]

50. Wang, Y.-S. Assessing E-Commerce Systems Success: A Respecification and Validation of the DeLone and McLean Model of IS Success. *Inf. Syst. J.* **2008**, *18*, 529–557. [CrossRef]

51. Lee, S.; Cude, B.J. Consumer Complaint Channel Choice in Online and Offline Purchases: Consumer Complaint Channels. *Int. J. Consum. Stud.* **2012**, *36*, 90–96. [CrossRef]

52. Pantano, E.; Viassone, M. Engaging Consumers on New Integrated Multichannel Retail Settings: Challenges for Retailers. *J. Retail. Consum. Serv.* **2015**, *25*, 106–114. [CrossRef]

53. Fassnacht, M.; Unterhuber, S. Consumer Response to Online/Offline Price Differentiation. *J. Retail. Consum. Serv.* **2016**, *28*, 137–148. [CrossRef]

54. Rapp, A.; Baker, T.L.; Bachrach, D.G.; Ogilvie, J.; Beitelspacher, L.S. Perceived Customer Showrooming Behavior and the Effect on Retail Salesperson Self-Efficacy and Performance. *J. Retail.* **2015**, *91*, 358–369. [CrossRef]

55. Basak, S.; Basu, P.; Avittathur, B.; Sikdar, S. A Game Theoretic Analysis of Multichannel Retail in the Context of "Showrooming". *Decis. Support Syst.* **2017**, *103*, 34–45. [CrossRef]

56. Bhattacherjee, A. An Empirical Analysis of the Antecedents of Electronic Commerce Service Continuance. *Decis. Support Syst.* **2001**, *32*, 201–214. [CrossRef]

57. Prassida, G.F.; Hsu, P.-Y.; Chang, Y.-W. Understanding How O2O Service Synergies Drive Customer Continuance Intention: A Study of OTAs and Hotels. *Asia Pac. J. Tour. Res.* **2021**, *26*, 1139–1155. [CrossRef]

58. Wang, O.; Scrimgeour, F. Consumer Adoption of Online-to-Offline Food Delivery Services in China and New Zealand. *Br. Food J.* **2021**, *124*, 1590–1608. [CrossRef]

59. Greetham, B. *How to Write Your Literature Review*; Red Global Press: London, UK, 2020; ISBN 978-1-352-01104-3.

60. Hong, Q.N.; Fàbregues, S.; Bartlett, G.; Boardman, F.; Cargo, M.; Dagenais, P.; Gagnon, M.-P.; Griffiths, F.; Nicolau, B.; O'Cathain, A.; et al. The Mixed Methods Appraisal Tool (MMAT) Version 2018 for Information Professionals and Researchers. *Educ. Inf.* **2018**, *34*, 285–291. [CrossRef]

61. Zairul, M. A Thematic Review on Student-Centred Learning in the Studio Education. *J. Crit. Rev.* **2020**, *7*, 504–511. [CrossRef]
62. Zairul, M. A Thematic Review on Industrialised Building System (IBS) Publications from 2015-2019: Analysis of Patterns and Trends for Future Studies of Ibs in Malaysia. *Pertanika J. Soc. Sci. Humanit.* **2021**, *29*, 635–652. [CrossRef]
63. Zairul, M. Opening the Pandora's Box of Issues in the Industrialised Building System (IBS) in Malaysia: A Thematic Review. *J. Appl. Sci. Eng.* **2022**, *25*, 297–310. [CrossRef]
64. Clarke, V.; Braun, V. Teaching Thematic Analysis: Overcoming Challenges and Developing Strategies for Effective Learning. *Psychologist* **2013**, *26*, 120–123.
65. Samsudin, N.S.; Mohammad, M.Z.; Khalil, N.; Nadzri, N.D.; Izam Che Ibrahim, C.K. A Thematic Review on Prevention through Design (PtD) Concept Application in the Construction Industry of Developing Countries. *Saf. Sci.* **2022**, *148*, 105640. [CrossRef]
66. Pan, C.; Lei, Y.; Wu, J.; Wang, Y. The Influence of Green Packaging on Consumers' Green Purchase Intention in the Context of Online-to-Offline Commerce. *J. Syst. Inf. Technol.* **2021**, *23*, 133–153. [CrossRef]
67. Niu, B.; Mu, Z.; Li, B. O2O Results in Traffic Congestion Reduction and Sustainability Improvement: Analysis of "Online-to-Store" Channel and Uniform Pricing Strategy. *Transp. Res. Part E Logist. Transp. Rev.* **2019**, *122*, 481–505. [CrossRef]
68. Sarkar, B.; Dey, B.K.; Sarkar, M.; AlArjani, A. A Sustainable Online-to-Offline (O2O) Retailing Strategy for a Supply Chain Management under Controllable Lead Time and Variable Demand. *Sustainability* **2021**, *13*, 1756. [CrossRef]
69. Brady, M.K.; Cronin, J.J.; Brand, R.R. Performance-Only Measurement of Service Quality: A Replication and Extension. *J. Bus. Res.* **2002**, *55*, 17–31. [CrossRef]
70. Cronin, J.J.; Taylor, S.A. Servperf Versus Servqual: Reconciling Performance-Based and Perceptions-Minus-Expectations Measurement of Service Quality. *J. Mark.* **1994**, *58*, 125–131. [CrossRef]
71. Parasuraman, A.; Zeithaml, V.A.; Berry, L.L. SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *J. Retail.* **1988**, *64*, 12–40.
72. Ha, H.-Y.; Kitchen, P.J. Positive Crossover Loyalty Shifts or Negative Temporal Changes? The Evolution of Shopping Mechanism in the O2O Era. *Eur. J. Mark.* **2020**, *54*, 1383–1405. [CrossRef]
73. Agarwal, V.; Sahu, R. Predicting Repeat Usage Intention towards O2O Food Delivery: Extending UTAUT2 with User Gratifications and Bandwagoning. *J. Foodserv. Bus. Res.* **2022**, *25*, 434–474. [CrossRef]
74. Zhang, Y.-B.; Kim, H.-K. A Study on the Factors Affecting Satisfaction and Reuse Intention among Customers Using O2O Delivery Platform in China. *J. Syst. Manag. Sci.* **2021**, *11*, 58–74. [CrossRef]
75. Hsieh, J.-K. The Role of Customers in Co-Creating m-Services in the O2O Model. *J. Serv. Manag.* **2017**, *28*, 866–883. [CrossRef]
76. Chang, Y.-W.; Hsu, P.-Y.; Yang, Q.-M. Integration of Online and Offline Channels: A View of O2O Commerce. *Internet Res.* **2018**, *28*, 926–945. [CrossRef]
77. Kim, H.S.; Lee, S.; Jung, I. A Study on the Trustworthiness of Store Rating in Restaurant Recommendation O2O Service. *Int. J. Comput. Vis. Robot.* **2020**, *10*, 345–359. [CrossRef]
78. Zhang, X. Ongoing Trust and Tourism O2O Platform Continuance: A Two-Trustee Involved Model with Moderating Variable. *SAGE Open* **2020**, *10*, 1–18. [CrossRef]
79. Hu, J.; Chen, X. Study on the Satisfaction of Consumers with Online Ordering Services and Its Influencing Factors in O2O Mode: A Microcosmic Perspective on the Provision of Takeout Services. *Rev. Cercet. Interv. Soc.* **2018**, *63*, 230–253.
80. Leung, P.P.L.; Wu, C.H.; Ip, W.H.; Ho, G.T.S. Enhancing Online-to-Offline Specific Customer Loyalty in Beauty Industry. *Enterp. Inf. Syst.* **2019**, *13*, 352–375. [CrossRef]
81. Che, T.; Ji, M.; Zheng, X.; Feng, B. Dissatisfaction toward O2O Websites: Expectation Disconfirmation and Justice Perspective. *Asia Pac. J. Mark. Logist.* **2022**, *34*, 190–208. [CrossRef]
82. Deci, E.L.; Ryan, R.M. The Empirical Exploration of Intrinsic Motivational Processes. In *Advances in Experimental Social Psychology*; Berkowitz, L., Ed.; Academic Press: Cambridge, MA, USA, 1980; Volume 13, pp. 39–80. ISBN 978-0-12-015213-1.
83. Roh, M.; Park, K. Adoption of O2O Food Delivery Services in South Korea: The Moderating Role of Moral Obligation in Meal Preparation. *Int. J. Inf. Manag.* **2019**, *47*, 262–273. [CrossRef]
84. Rogers, E.M. *Diffusion of Innovations*, 5th ed.; Free Press: New York, NY, USA, 2003; ISBN 978-0-7432-2209-9.
85. Wang, O.; Somogyi, S.; Charlebois, S. Food Choice in the E-Commerce Era: A Comparison between Business-to-Consumer (B2C), Online-to-Offline (O2O) and New Retail. *Br. Food J.* **2020**, *122*, 1215–1237. [CrossRef]
86. Hsu, C.-L.; Lin, J.C.-C. Understanding Continuance Intention to Use Online to Offline (O2O) Apps. *Electron. Mark.* **2020**, *30*, 883–897. [CrossRef]
87. Hsu, C.-L.; Lin, J.C.-C. Examining Social Networking O2O Apps User Loyalty. *J. Comput. Inf. Syst.* **2020**, *60*, 459–467. [CrossRef]
88. Yang, Y.; Gong, Y.; Land, L.P.W.; Chesney, T. Understanding the Effects of Physical Experience and Information Integration on Consumer Use of Online to Offline Commerce. *Int. J. Inf. Manag.* **2020**, *51*, 102046. [CrossRef]
89. Zhuang, X.; Lin, L.; Zhang, R.; Li, J.; He, B. E-Service Quality Perceptions of Millennials and Non-Millennials on O2O Delivery Applications. *Br. Food J.* **2021**, *123*, 4116–4134. [CrossRef]
90. Lin, S.; Chen, S.-C.; Chuang, S.-H. Perceived Innovation and Quick Response Codes in an Online-to-Offline E-Commerce Service Model. *Int. J. E-Adopt.* **2017**, *9*, 1–16. [CrossRef]
91. Tamilmani, K.; Rana, N.P.; Prakasam, N.; Dwivedi, Y.K. The Battle of Brain vs. Heart: A Literature Review and Meta-Analysis of "Hedonic Motivation" Use in UTAUT2. *Int. J. Inf. Manag.* **2019**, *46*, 222–235. [CrossRef]
92. Gefen; Karahanna; Straub Trust and TAM in Online Shopping: An Integrated Model. *MIS Q.* **2003**, *27*, 51. [CrossRef]

93. Pavlou, P.A. Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *Int. J. Electron. Commer.* **2003**, *7*, 101–134. [CrossRef]

94. Xiao, L.; Fu, B.; Liu, W. Understanding Consumer Repurchase Intention on O2O Platforms: An Integrated Model of Network Externalities and Trust Transfer Theory. *Serv. Bus.* **2018**, *12*, 731–756. [CrossRef]

95. Dai, T.; Wen, D.; Chen, X. An Empirical Study on the Customer Channel Choice Behavior in the Overall Process of Shopping under O2O Mode. *Int. J. Web Portals* **2016**, *8*, 13–31. [CrossRef]

96. Tang, M.; Zhu, J. Research of O2O Website Based Consumer Purchase Decision-Making Model. *J. Ind. Prod. Eng.* **2019**, *36*, 371–384. [CrossRef]

97. Chiang, I.-P. Measuring The Effects of Online-to-Offline Marketing. *Contemp. Manag. Res.* **2018**, *14*, 167–189. [CrossRef]

98. Zeithaml, V.A. Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *J. Mark.* **1988**, *52*, 2–22. [CrossRef]

99. Yeo, V.C.S.; Goh, S.-K.; Rezaei, S. Consumer Experiences, Attitude and Behavioral Intention toward Online Food Delivery (OFD) Services. *J. Retail. Consum. Serv.* **2017**, *35*, 150–162. [CrossRef]

100. Gensler, S.; Neslin, S.A.; Verhoef, P.C. The Showrooming Phenomenon: It's More than Just About Price. *J. Interact. Mark.* **2017**, *38*, 29–43. [CrossRef]

101. Li, D.; Browne, G.J.; Wetherbe, J.C. Why Do Internet Users Stick with a Specific Web Site? A Relationship Perspective. *Int. J. Electron. Commer.* **2006**, *10*, 105–141. [CrossRef]

102. Kang, M.; Gao, Y.; Wang, T.; Wang, M. The Role of Switching Costs in O2O Platforms: Antecedents and Consequences. *Int. J. Smart Home* **2015**, *9*, 135–150. [CrossRef]

103. Kang, M.J.; Wu, Z.; Hwang, H.J. A Study on the Mediating Effect of Customer Orientation between O2O Service Quality and Customers' Perceived Service Satisfaction. *J. Distrib. Sci.* **2021**, *19*, 37–44. [CrossRef]

104. Chang, J.-R.; Chen, M.-Y.; Chen, L.-S.; Chien, W.-T. Recognizing Important Factors of Influencing Trust in O2O Models: An Example of OpenTable. *Soft Comput.* **2020**, *24*, 7907–7923. [CrossRef]

105. Chang, V.; Zheng, N.; Shi, Y. Customers' Intention towards O2O Food Delivery Service under the Different Characteristic of Customer Group–A Case Study of Suzhou Industrial Park. *Int. J. Econ. Bus. Res.* **2020**, *19*, 391. [CrossRef]

106. Cai, J.; Zhao, Y.; Sun, J. Factors Influencing Fitness App Users' Behavior in China. *Int. J. Human–Computer Interact.* **2022**, *38*, 53–63. [CrossRef]

107. Peráček, T. E-Commerce and Its Limits in the Context of the Consumer Protection:The Case of the Slovak Republic. *Jurid. Trib.* **2022**, *12*, 35–50. [CrossRef]

108. McKnight, D.H.; Chervany, N.L. What Trust Means in E-Commerce Customer Relationships: An Interdisciplinary Conceptual Typology. *Int. J. Electron. Commer.* **2001**, *6*, 35–59. [CrossRef]

109. Turbutt, C.; Richardson, J.; Pettinger, C. The Impact of Hot Food Takeaways near Schools in the UK on Childhood Obesity: A Systematic Review of the Evidence. *J. Public Health* **2019**, *41*, 231–239. [CrossRef]

110. Wijekoon, R.; Sabri, M.F. Determinants That Influence Green Product Purchase Intention and Behavior: A Literature Review and Guiding Framework. *Sustainability* **2021**, *13*, 6219. [CrossRef]

111. Žofčinová, V.; Čajková, A.; Král, R. Local Leader and the Labour Law Position in the Context of the Smart City Concept through the Optics of the EU. *TalTech J. Eur. Stud.* **2022**, *12*, 3–26. [CrossRef]

112. Skóra, A.; Srebalová, M.; Papáčová, I. Administrative Judiciary Is Looking for a Balance in a Crisis. *Jurid. Trib.* **2022**, *12*, 5–20. [CrossRef]

113. Mucha, B. Evaluation of the State of Implementation of the European Structural and Investment Funds: Case Study of the Slovak Republic. *On-Line J. Model. New Eur.* **2021**, *35*, 4–24. [CrossRef]

114. Li, L.; Wang, D. Do Neighborhood Food Environments Matter for Eating through Online-to-Offline Food Delivery Services? *Appl. Geogr.* **2022**, *138*, 102620. [CrossRef]

115. Pei, Y.; Li, D.; Xue, W. The Evaluation of Customer Experience Using BP Neural Network-taking Catering O2O Takeout. *Concurr. Comput. Pract. Exp.* **2020**, *32*, e5515. [CrossRef]

116. Pei, Y.; Xue, W.; Yang, Y.; Li, D.; Li, Y. The Impacts of User Experience on User Loyalty Based on O2O Innovation Platform. *J. Electron. Commer. Organ.* **2019**, *17*, 79–87. [CrossRef]

117. Shi, C.; Pei, Y.; Li, D.; Wu, T. Influencing Factors of Catering O2O Customer Experience: An Approach Integrating Big Data Analytics with Grounded Theory. *Teh. Vjesn.* **2021**, *28*, 862–872. [CrossRef]

118. Xu, X.; Huang, Y. Restaurant Information Cues, Diners' Expectations, and Need for Cognition: Experimental Studies of Online-to-Offline Mobile Food Ordering. *J. Retail. Consum. Serv.* **2019**, *51*, 231–241. [CrossRef]