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SYSTEMATIC LITERATURE REVIEW OF INFLUENCING FACTORS IN ONLINE GROCERY SHOPPING (OGS) USER EXPERIENCE (UX): MULTI-DIMENSIONAL MODEL

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REVISÃO SISTEMÁTICA DA LITERATURA SOBRE FATORES QUE INFLUENCIAM A EXPERIÊNCIA DO USUÁRIO (UX) EM COMPRAS DE SUPERMERCADOS ONLINE (OGS): UM MODELO MULTIDIMENSIONAL

Resumo

Objetivo: Este artigo apresenta uma revisão sistemática abrangente dos principais fatores que influenciam a Experiência do Usuário (UX) em compras de supermercado online (OGS), destacando a importância da UX em plataformas de OGS. **Design** | **Metodologia** | **Abordagem:** Uma revisão de literatura sistemática com base em 27 estudos acadêmicos conduzidos nos últimos dez anos, a revisão explora 49 fatores distintos que impactam a experiência do usuário em OGS. **Resultados:** Propõe-se um modelo de observação, analisando como cada dimensão contribui para a experiência geral do usuário, agrupando os fatores de influência em quatro dimensões principais: Plataforma, Serviço, Produto e Usuário. O estudo destaca a importância de uma abordagem holística e centrada no usuário para aprimorar a UX em plataformas OGS. **Originalidade** | **Valor:** Esta pesquisa enfatiza a interação entre vários fatores de influência e seu papel na formação de experiências positivas e negativas do usuário, oferecendo um modelo observacional e insights para melhorar o design de UX e a satisfação do consumidor no segmento de compra de supermercados online.

Palavra-chave: Experiência do Usuário (UX), Compra de Supermercado Online (OGS), Revisão Sistemática da Literatura (SLR), Design de interação, Interação Humano-Computador (HCI)

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SYSTEMATIC LITERATURE REVIEW OF INFLUENCING FACTORS IN ONLINE GROCERY SHOPPING (OGS) USER EXPERIENCE (UX): MULTI-DIMENSIONAL MODEL

Abstract

Goal: This article presents a comprehensive systematic review of the main factors influencing User Experience (UX) in online grocery shopping (OGS), highlighting the importance of UX in OGS platforms. **Design | Methodology | Approach:** Drawing from 27 academic studies conducted over the past ten years, the review explores 49 distinct factors that impact the user experience in OGS. **Results:** An observational model is proposed, analyzing how each dimension contributes to the overall user experience, grouping the influencing factors into four main dimensions: Platform, Service, Product and User. The study highlights the importance of a holistic and user-centered approach to improving UX in OGS platforms. **Originality | Value:** This research emphasizes the interplay between various influencing factors and their role in shaping both positive and negative user experiences, offering an observational model and insights for improving UX design and consumer satisfaction in the e-commerce grocery sector.

Keywords: User Experience (UX), Online Grocery Shopping (OGS), Systematic Literature Review (SLR), Interaction Design, Human-Computer Interaction (HCI)

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1. Introduction

The rapid evolution of e-commerce has transformed various industries, including the grocery retail sector. Online Grocery Shopping (OGS) platforms have become increasingly popular, especially in the last decade, due to advancements in technology, internet accessibility, and changing consumer behaviors. However, despite the convenience and appeal of online grocery shopping, there are still significant challenges that affect the overall user experience. One of the key differences between traditional brick-and-mortar supermarkets and OGS platforms is the inability for consumers to physically interact with products, which can hinder their purchasing decisions. Consumers miss the tactile experience of handling goods, inspecting their quality, and making on-the-spot comparisons based on visual and physical cues such as packaging, freshness, and size.

The COVID-19 pandemic accelerated the digital transition of many industries, particularly the supermarket sector. With restrictions on mobility and the need for social distancing, consumers were forced to adapt quickly to online shopping, including for groceries. This shift created a surge in demand for OGS services, prompting retailers to enhance their platforms and streamline the user experience to meet new consumer expectations. However, this rapid transition has also highlighted the barriers that can negatively impact the user experience, such as the complexity of navigating online platforms, trust in digital transactions, and the accuracy of product representation. Thus, improving the user experience in OGS has become a crucial factor in sustaining and growing consumer loyalty in this competitive market.

User experience (UX) in e-commerce, especially in the context of OGS, encompasses not only the functionality of the platform but also the emotional and psychological responses of

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users as they interact with these services. Unlike usability (Iso 9241-11, 2018; Jordan, 2002, Nielsen, 1993), which focuses on the efficiency and effectiveness of completing specific tasks, UX (Nielsen, 1993; Norman, 1993; Tullis; Albert, 2013) is broader and includes user satisfaction, convenience, trust, and the emotional connection with the service. Understanding the various touchpoints along the user journey— from product search to payment and delivery— is essential for improving the overall shopping experience (Kalbach, 2017). Positive experiences can lead to higher customer retention and advocacy, while negative experiences can drive users away to competitors.

To comprehensively address these challenges and optimize the online grocery shopping experience, it is essential to explore the multiple dimensions that influence user interactions with OGS platforms. Existing literature has identified several factors, including platform search features, service quality, product price, and factors regarding user behavior, all of which play a significant role in shaping different touchpoints in the consumer's online shopping journey. Each of these factors can be clustered in a dimension with a range of factors that can either facilitate or hinder the user's experience, and understanding their interrelation is critical for designing OGS platforms that are both functional and user-friendly (Morisso, 2021).

The objective of this research is present a Systematic Literature Review (SLR) that identify, categorize, and analyze the influencing factors and propose a four key dimensions of user experience model in OGS: Platform, Service, Product, and User. By reviewing 27 studies published over the last ten years, this SLR aims to provide a comprehensive understanding of factors that influences the final user experience and to offer insights into improving OGS platforms for enhanced customer satisfaction and engagement.

2. Methodology

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As a methodological process, the systematic literature review (SLR) follows sequential stages of data collection, understanding, application, analysis, and synthesis when evaluating qualified literature. Through these stages, the SLR process begins with the input, processing, and output of information. The output results provide a solid foundation for a research topic or method (Levy & Ellis, 2006).

The selection, refinement, and choice of search keywords are integral to the initial input phase of systematic literature review, as suggested by Kitchenham and Charters (2007). Following this preparatory stage, relevant entries are retrieved from databases and scientific repositories, where they are screened and refined to ensure alignment with the research objectives. This process, aligning with Petticrew and Roberts' (2006) emphasis on rigorous data selection, enables systematic extraction and synthesis of pertinent information, leading to a structured output phase that consolidates insights relevant to the study.

The SLR, focusing on the search for influencing factors, barriers (negative impact) and facilitators (positive impact) of the user experience in Online Grocery Shopping (OGS), considered only scientific articles from established databases. The databases used for data collection were Scopus, Web of Science, Proquest, SciELO, EBSCO LISTA, and EBSCO Open Dissertations. The exploration of the subject resulted in a total of 432 studies from all databases combined. The research was conducted in 2021. Table 1 shows the search commands (strings) that were systematically used in each database.

Table 1 - Search Commands (strings) with respective filters and databases

Database	Results	Strings
Scopus	102	TITLE-ABS-KEY [("user experience" OR "ux" OR "customer experience") OR (*satisfact*) OR (*factor*) OR (driver* OR barrier*) OR (difficult* OR pain) OR (challeng* OR opportunit*) AND ("electronic commerce" OR e-commerc* OR "Online Shopping") AND

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		(supermarket* OR grocer*)] AND LIMIT-TO (PUBYEAR, 2015)
Web of Science	270	("user experience" OR "ux" OR "customer experience" OR *satisfac* OR factors OR drivers OR barriers OR difficulties OR pain OR challenges OR opportunities) AND ("electronic commerce" OR e-commerce OR "Online Shopping") AND (supermarket OR groceries) Refined by: Peer reviewed
Proquest	40	("user experience" OR "ux" OR "customer experience" OR satisfac* OR factor* OR driver* OR barrier* OR difficult* OR pain OR challenges OR opportunit*) AND ("electronic commerce" OR e-commerce OR "Online Shopping") AND (supermarket OR grocer*)
SciELO	7	("user experience" OR "ux" OR "customer experience" OR *satisfac* OR factors OR drivers OR barriers OR difficulties OR pain OR challenges OR opportunities) AND ("electronic commerce" OR e-commerce OR "Online Shopping") AND (supermarket OR groceries) Refined by: Peer reviewed
Ebsco LISTA	5	("user experience" OR "ux" OR "customer experience" OR *satisfac* OR factors OR drivers OR barriers OR difficulties OR pain OR challenges OR opportunities) AND ("electronic commerce" OR e-commerce OR "Online Shopping") AND (supermarket OR groceries) Refined by: Peer reviewed
Ebsco *Open Dissertations*	9	("user experience" OR "ux" OR "customer experience" OR *satisfac* OR factors OR drivers OR barriers OR difficulties OR pain OR challenges OR opportunities) AND ("electronic commerce" OR e-commerce OR "Online Shopping") AND (supermarket OR groceries) Refined by: Peer reviewed

Source: Created by the authors (2021).

After the first results were retrieved, the filtering and analysis were processed. During the processing stage, a bibliographic management software called EndNote X9 was used to list the components of each search and apply the following filters. The filtering steps during the data processing are part of the SLR procedure described by Conforto, Amaral, and Silva (2011) regarding inclusion and exclusion criteria.

The inclusion and exclusion were carried out in three filter stages. The initial filter involved reviewing titles to exclude studies that were unrelated to the review's theme. The second

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filter involved reading abstracts to identify the research's relevance. Studies selected in the second filter advanced to the third stage, where they were fully downloaded for comprehensive reading. However, out of the 33 studies from the Scopus database, seven were inaccessible due to restrictions within the shared library systems associated with the University of Santa Catarina (UDESC), as illustrated in Table 2.

Table 2 - Search results with researcher's filtering stages

Database	Results	Filter 1 (*Titles*)	Filter 2 (*Abstract*)	Filter 3 *(Reading and data extraction)*
Scopus	102	42	33(-7)	21
Web of Science	270	13	7	6
Proquest	40	1	1	0
SciELO	7	0	0	0
Ebsco LISTA	5	0	0	0
Ebsco *Open Dissertations*	9	0	0	0

Source: Created by the authors (2021).

In the third filtering stage, all selected studies were organized for full reading and extraction of relevant data for the review. A total of 27 studies had their relevant data extracted for the review. These studies had as their central theme online grocery shopping (OGS) and/or user-consumer evaluations in OGS. Each study employed different methodologies to assess and/or observe OGS users. Table 3 lists the 27 studies that support this research.

Table 3 - 27 Studies with relevant data extracted for this research

ID	Title	Author	Year	Country

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01	What factors affect Chinese consumers' online grocery shopping? Product attributes, e-vendor characteristics and consumer perceptions.	Zheng, Q., Chen, J., Zhang, R., & Wang, H.	2020	China
02	Service quality factors affecting customer attitudes in online-to-offline commerce.	Armstrong, D.; Moon, Y.	2020	South Korea
03	Consumer perception towards online grocery shopping in Chennai.	Subbulakshmi, S.; Jayanthi, V.	2020	India
04	"Malaysians' popular online shopping websites during movement control order (Mco)."	Isa, K., Shah, J., Palpanadan, S., & Isa, F.	2020	Malaysia
05	Switching Intention from Traditional to Online Groceries Using the Moderating Effect of Gender in Indonesia.	Handayani, P., Nurahmawati, R., Pinem, A., & Azzahro, F.	2020	Indonesia
06	Grocery shopping preferences during the COVID-19 pandemic.	Grashuis, J.; Skevas, T; Segovia, M.S.	2020	USA
07	Sociodemographic and spatial disaggregation of e-commerce channel use in the grocery market in Great Britain.	Hood, N., Urquhart, R., Newing, A., & Heppenstall, A.	2020	UK
08	Triggered or evaluated? A qualitative inquiry into the decision to start using e-grocery services.	Van Droogenbroeck, E., Van Hove, L.	2019	Germany
09	Identifying Psychophysiological Pain Points in the Online User Journey: The Case of Online Grocery.	Giroux-Huppé, C., Sénéchal, S., Fredette, M., Chen, S. L., Demolin, B., & Léger, P. M.	2019	Canada
10	Exploring e-Loyalty Antecedents in B2C e-Commerce: Empirical results from Italian grocery retailers.	Faraoni, M., Rialti, R., Zollo, L., & Pellicelli, A. C.	2019	Italy
11	Online grocery shopping in Thailand: Consumer acceptance and usage behavior.	Driediger, F.; Bhatiasevi, V.	2019	Thailand

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12	The arithmetic complexity of online grocery shopping: the moderating role of product pictures.	Desrochers, C., Léger, P. M., Fredette, M., Mirhoseini, S., & Sénéchal, S.	2019	Canada
13	Elucidating the Behavior of Consumers toward Online Grocery Shopping: The Role of Shopping Orientation.	Loketkrawee, P.; Bhatiasevi, V.	2018	Thailand
14	Technology acceptance as a determinant of online grocery shopping adoption.	Bauerová, R.; Klepek, M.	2018	Czech Rep.
15	Consumers' decision-making in online grocery shopping: The impact of services offered and delivery conditions.	Bauerová, R.	2018	Czech Rep.
16	The influence of website functionality, drivers and perceived risk on customer satisfaction in online shopping: an emerging economy case.	Tandon, U.; Kiran, R.; Sah, A.	2018	India
17	An empirical investigation of the factors motivating Japanese repeat consumers to review their shopping experiences.	Moriuchi, E.; Takahashi, I.	2018	Japan
18	Evaluating satisfaction level of grocery E-retailers using intuitionistic fuzzy TOPSIS and ECCSI model.	Anshu, K.; Gaur, L.; Khazanchi, D.	2017	India
19	Motivational factors for online grocery shopping.	Pauzi, S., Chin, T., Choon, T., Sulaiman, Z.	2017	Malaysia
20	Factors Influencing Consumers Intention for Online Grocery Shopping - A Proposed Framework.	Pauzi, S., Thoo, A., Tan, L., Muharam, F., & Talib, N.	2017	Malaysia
21	Online grocery retailing in Germany: an explorative analysis.	Seitz, C., Pokrivčák, J., Tóth, M., & Plevný, M.	2017	Germany
22	Online and store patronage: a typology of grocery shoppers.	Harris, P., Dall'Olmo, R. F.,	2017	UK

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23	A method to study how older adults navigate in an online grocery shopping site	Riley, D., & Hand, C. Osman, R.; Hwang, F.	2016	UK
24	Online grocery shopping: Identifying change in consumption practices.	Munson, J.; Tiropanis, T.; Lowe, M.	2017	UK
25	Online grocery shopping: the impact of shopping frequency on perceived risk.	Mortimer, G., Fazal-Hasan, S., Andrews, L., & Martin, J.	2016	Australia
26	Key factors in successful online grocery retailing: Empirical evidence from Tokyo, Japan.	Hirogaki, M.	2015	Japan
27	Buying Groceries in Brick and Click Stores: Category Allocation Decisions and the Moderating Effect of Online Buying Experience.	Campo, K.; Breugelmans, E.	2015	Belgium

Source: Created by the authors (2021).

Unlike purchasing groceries in a physical store, Online Grocery Shopping (OGS) presents challenges, such as consumers' inability to physically handle products and closely evaluate attributes like shape, color, and details. However, there are many other factors that must be assessed and observed, which can influence, either positively or negatively, the user experience on online grocery shopping platforms. In the results section, the influencing factors collected are clustered in four key dimensions: Platform, Service, Product, and User. The proposed dimensions observational model can be used to analyze how each dimension contributes to the overall user experience, the study highlights the importance of a holistic, user-centered approach to enhancing OGS platforms.

3. Results and Discussion

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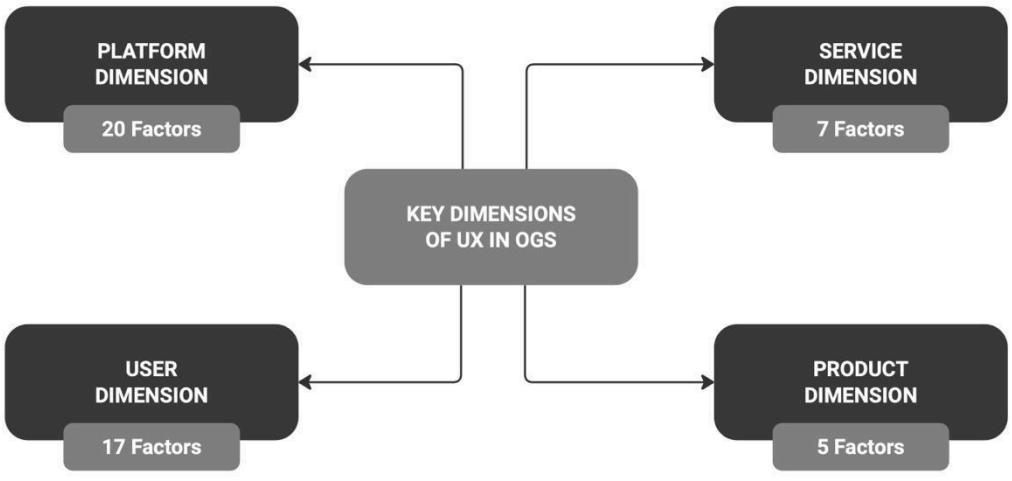
Based on the systematic literature review, 27 studies related to the theme of online grocery shopping were examined. Each study presents different possibilities and factors for observing the experience and the purchasing journey of OGS user-consumers. The selection of factors is a result of the Systematic Literature Review (SLR), which identified publications with a central focus on online grocery shopping (OGS). Through reading and extraction, 49 factors used in 27 academic publications from the last ten years were selected and cataloged.

In general, the studies observe the influencing factors found across four key distinct dimensions. These dimensions are: Platform (20 factors), Service (7 factors), Product (5 factors), and User (17 factors) In Figure 1 each of the 49 factors falls within one of these dimensions.

Figure 1 – Key Dimensions of influencing factors in UX of OGS



Source: Created by the authors (2021).

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The factors were extracted as they appeared in each study, and it is possible to observe some overlap and/or similarity between them. It is also important to highlight that the factors used are based on the theoretical frameworks and methods of each study.

Table 4 - 49 Influence Factors in UX of OGS

Table 1 - Search Commands (strings) with respective filters and databases

ID	Title	Authors	ID	Factor	Authors
01	Platform Design	Zheng, 2020; Armstrong; Moon, 2020; Tandon, 2018: Osman; Hwang, 2016; Anshu et al., 2017, Desrochers et al., 2019; Faraoni et al., 2019	26	Scheduling of delivery or time window	Harris *et al.*, 2017; Subbulakshmi *et al.*, 2020; Hirogaki, 2015
02	Design Attractiveness	Isa et al., 2020; Anshu et al., 2018	27	Customer service quality during delivery	Anshu et al., 2017
03	Platform Navigation	Tandon et al., 2018; Isa et al., 2020; Osman; Hwang, 2016; Anshu et al., 2017 Bauerová et al., 2018; Desrochers et al., 2019; Giroux-Huppé et al., 2019; Handayani, 2020.	28	Quality of products received	Anshu; et al. 2017; Subbulakshmi et al., 2020; Zheng et al., 2020

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04	Product Information Available	Handayani et al., 2020; Osman; Hwang, 2016; Anshu et al., 2017; Seitz, 2017	29	Product Prices	Anshu et al., 2017; Moriuchi et al., 2018; Seitz et al., 2017; Subbulakshmi et al., 2020; Zheng et al., 2020.
05	Product benefits Information	Anshu et al., 2017	30	Freshness of products and food	Zheng et al., 2020
06	Platform Update frequency	Isa et al., 2020; Harris et al., 2017	31	Number of available products, brands and novelties.	Anshu et al, 2017; Seitz et al., 2017; Subbulakshmi et al, 2020.
07	Ease of finding information	Anshu et al., 2017	32	Types of products available	Desrochers et al., 2019; Seitz et al., 2017.
08	Ease of use and user-friendly interface	Armstrong; Moon, 2020; Tandon et al., 2018; Subbulakshmi et al., 2020; Isa et al., 2020; Osman; Hwang, 2016; Anshu et al., 2017; Loketkrawee et al., 2018; Bauerová et al., 2018; Handayani et al., 2020	33	Convenience perception	Zheng et al., 2020; Seitz et al., 2017; Harris et al., 2017; Subbulakshmi et al., 2020; Campo et al., 2015; Bauerova, 2018.

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09	Account creation easiness	Anshu et al., 2017, Giroux-Huppé et al., 2019	34	Perceived Trust / Level of Credibility	Zheng et al., 2020; Moriuchi et al., 2018; Seitz et al., 2017; Mortimer et al., 2016; Pauzi et al., 2017; Anshu et al., 2017; Loketkrawee et al., 2018; Faraoni et al., 2019; Giroux-Huppé et al., 2019
10	Multi language support	Isa et al., 2020	35	Satisfaction level with the service provided	Moriuchi et al., 2018; Harris et al., 2017; Hirogaki, 2015; Mortimer et al., 2016
11	Usability	Hirogaki, 2015; Osman; Hwang, 2016	36	Satisfaction level with the user experience	Loketkrawee et al., 2018; Faraoni et al., 2019
12	Search tool feature	Harris et al., 2017; Subbulakshmi et al., 2020; Handayani et al., 2020; Osman; Hwang, 2016; Anshu et al., 2017	37	Perceived Risk / Financial risk perception	Campo et al., 2015; Tandon et al., 2018; Handayani et al., 2020: Mortimer et al., 2016; Pauzi et al., 2017; Driediger et al., 2019.

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13	Price comparison feature	Handayani, 2020; Osman; Hwang, 2016	38	Risk of products arriving incorrectly, not fresh or missing products	Tandon et al., 2018; Harris et al., 2017
14	Available platform features	Anshu et al, 2017; Osman; Hwang, 2016	39	Lack of control and touch over products	Seitz et al., 2017; Campo et al., 2015; Tandon et al., 2018.
15	Images, photos or visual representation of products	Zheng, 2020; Isa, 2020; Anshu et al, 2017; desrochers et al, 2019	40	Ease of ordering perception	Tandon et al., 2018; Subbulakshmi et al., 2020; Handayani et al., 2020; Bauerova et al., 2018; Loketkrawee et al., 2018; Driediger et al., 2019.
16	Customization available	Armstrong, 2020; Tandon, 2018	41	Technology facility condition	Pauzi et al., 2017; Tandon et al., 2018
17	Functional consistency of platform	Anshu et al, 2017; Tandon, 2018; Osman; Hwang, 2016	42	Hedonic motivation, pleasure, entertainment during purchase	Tandon et al., 2018; Pauzi et al., 2017; Loketkrawee; et al., 2018; Driediger et al., 2019
18	Availability of platform	Armstrong, 2020; Harris, 2017; Subbulakshmi, 2020; Hirogaki, 2015; Anshu et al, 2017	43	Social Influence (recommendation, word of mouth, reviews, social visibility)	Zheng et al., 2020; Tandon et al., 2018; Moriuchi et al., 2018; Isa et al., 2020; Handayani et

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					al., 2020; Pauzi et al., 2017;
19	Security in platform usage	Armstrong, 2020; Handayani, 2020; Hirogaki, 2015; Harris, 2017; Faraoni et al, 2019; Giroux-Huppé et al, 2019; Anshu et al, 2017	44	Frequency of purchase / use	Driediger; et al., 2019; Van Droogenbroeck et al., 2019 Mortimer et al., 2016; Bauerova, 2018
20	Responsiveness of platform in mobile devices	Armstrong, 2020; Handayani, 2020	45	Perceived Usefulness	Bauerova, 2018; Loketkrawee et al., 2018; Driediger et al., 2019
21	Delivery time or speed	Zheng et al., 2020; Harris et al., 2017; Handayani et al., 2020; Grashuis et al., 2020; Hirogaki, 2015; Anshu et al., 2017; Bauerova et al., 2018	46	Interest in products offered	Loketkrawee et al., 2018
22	Delivery Fees	Zheng et al., 2020; Seitz et al., 2017;	47	Attention and cognitive load	Desrochers et al., 2019

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		Grashuis et al., 2020; Hirogaki, 2015; Bauerova, 2018		required to place an order	
23	Minimum purchase value	Grashuis et al., 2020; Bauerova et al, 2018	48	Subjective Norm	Driediger et al., 2019
24	Delivery Packaging	Zheng et al., 2020; Subbulakshmi et al., 2020	49	Situational Factors for OGS usage	Van Droogenbroeck et al., 2019
25	Available Payment Methods	Tandon et al., 2018; Subbulakshmi et al., 2020; Handayani et al., 2020; Hirogaki, 2015; Anshu et al., 2017; Giroux-Huppé et al., 2019			

Source: Created by the authors (2021).

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Thus, following the extraction of influencing factors through the systematic literature review (SLR), presented were identified and drawn from 27 studies. The results of the SLR encompass a broad and complex range of influence factors to be addressed as observational constructs in the UX of OGS.

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3.1. Platform Dimension

The **Platform dimension** is central to the user experience in online grocery shopping (OGS) as it directly impacts how users interact with the system. Usability is one of the key factors within this dimension, with authors like Hirogaki (2015) and Osman and Hwang (2016) emphasizing the need for platforms to be efficient, accessible, and secure. Usability ensures that users can navigate the platform with ease, find the information they need, and complete purchases without difficulty. Closely tied to this is the design of the platform, which includes elements such as layout, interface consistency, and the overall visual appeal. Zheng et al. (2020) and Armstrong and Moon (2020) suggest that an aesthetically pleasing design, combined with functional navigation features, enhances user satisfaction.

Another important factor within the Platform dimension is ease of information access, as highlighted by Anshu et al. (2017) and Handayani et al. (2020). This involves the platform's ability to provide clear, concise, and up-to-date product information. Users expect to have access to detailed descriptions, images, and even comparisons between products, which significantly influence their purchasing decisions. Additionally, search functionality is a crucial factor (Harris et al., 2017; Osman and Hwang, 2016), as it allows users to quickly locate desired products. An effective search tool reduces cognitive effort and contributes to an overall smoother shopping experience. Mobile responsiveness, identified by Armstrong (2020) and Handayani (2020), is also critical, as users increasingly rely on smartphones for shopping. Platforms that adapt seamlessly across devices contribute to a more flexible and convenient user experience.

3.2. Service Dimension

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In the **Service dimension**, the speed and quality of delivery play a central role. Delivery time is one of the most critical service factors, as noted by Zheng et al. (2020) and Harris et al. (2017). Users expect their groceries to be delivered quickly, especially when ordering perishable goods.

A lengthy delivery time can undermine the convenience of OGS and deter users from returning. Similarly, delivery fees (Grashuis et al., 2020; Seitz et al., 2017) can act as a barrier to adoption. High delivery fees may discourage users, while offers of free or discounted delivery for larger purchases tend to increase user satisfaction. The packaging quality (Subbulakshmi and Jayanthi, 2020; Zheng et al., 2020) is also important, as users expect their groceries to arrive in optimal condition, particularly when ordering fragile or perishable items.

3.3. Product Dimension

The **Product dimension** primarily revolves around the quality and freshness of the products, which have been widely cited as major concerns by users (Zheng et al., 2020). For many consumers, the inability to physically inspect groceries before purchasing online represents a significant risk. Therefore, users place great importance on the freshness of food upon delivery, with any failure in this area leading to dissatisfaction.

Product variety (Anshu et al., 2017; Seitz et al., 2017) is also a key factor in this dimension. Platforms that offer a broad range of products, including popular brands and new items, tend to attract more users. Product price is another critical aspect, as noted by Moriuchi and Takahashi (2018) and Seitz et al. (2017), particularly in markets where consumers are highly price-sensitive. Users often expect online prices to be lower than in physical stores, and any discrepancies can influence their willingness to shop online.

3.4. User Dimension

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The **User dimension** addresses the personal and emotional aspects of the OGS experience, beginning with the perception of convenience (Zheng et al., 2020; Bauerová, 2018). Users often choose OGS for its time-saving benefits, and any hindrances, such as a cumbersome checkout process or lengthy delivery times, can detract from this convenience. User trust in the platform and vendor (Moriuchi and Takahashi, 2018; Seitz et al., 2017) is another vital factor, particularly in online shopping environments where users cannot physically inspect products. Trust is built through secure payment options, reliable delivery services, and accurate product representations. Without trust, users are unlikely to adopt OGS as a regular shopping method.

Related to trust is the perception of risk, specifically the risk of receiving incorrect or substandard products (Tandon et al., 2018; Harris et al., 2017). Concerns about product substitutions, incorrect orders, or damaged items can discourage users from shopping online. To mitigate these risks, platforms must offer clear and reliable product information, as well as a straightforward process for returns or refunds. Another influential factor in the user experience is the social influence of reviews and recommendations (Zheng et al., 2020; Handayani et al., 2020). Many users rely on the experiences of others, such as customer reviews and ratings, to build confidence in their purchasing decisions.

4. Conclusion

In conclusion, the systematic review highlights an observational model based on four key dimensions—Platform, Service, Product, and User—that collectively encompass the 49 factors influencing the user experience in Online Grocery Shopping (OGS). The **Platform dimension** is foundational, as it directly affects the usability, design, navigation, and accessibility of the e-commerce platform. Factors such as search functionality, mobile

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responsiveness, and ease of information access are crucial in determining how effectively users can interact with the platform, which in turn influences their overall satisfaction and likelihood of continued use.

The **Service dimension** centers on the quality and efficiency of the delivery process, a critical touchpoint for consumers. Speed of delivery, the cost of shipping, and packaging integrity significantly impact user satisfaction. A poor service experience, such as late deliveries or damaged goods, can erode trust and reduce the perceived convenience of OGS. This dimension highlights the importance of reliable and customer-focused service management to ensure that the convenience promised by online shopping is consistently delivered.

The **Product** and **User dimensions** complete the model by addressing the actual goods being purchased and the personal experience of the consumer. Product-related factors like quality, freshness, variety, and pricing are fundamental to ensuring consumer satisfaction. Meanwhile, the User dimension encompasses more subjective aspects, such as trust, perceived risk, and convenience, which are critical in building long-term loyalty. Together, these four dimensions provide a comprehensive framework for understanding how various factors interact to shape the user experience in OGS, offering a clear guide for improving platform design, service quality, and overall user satisfaction. By addressing these key areas, retailers can improve platform design, service quality, and user engagement, leading to greater adoption and satisfaction with online grocery shopping as well as enhance the overall experience and increase customer loyalty.

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References

Anshu, K., Gaur, L., & Khazanchi, D. (2017). Evaluating satisfaction level of grocery E-retailers using intuitionistic fuzzy TOPSIS and ECCSI model. *International Conference on Infocom Technologies and Unmanned Systems*. Institute of Electrical and Electronics Engineers Inc.

Armstrong, D. J., & Moon, Y. (2020). Service quality factors affecting customer attitudes in online-to-offline commerce. *Information Systems and e-Business Management*, *18(1), 1-34.*

Bauerová, R. (2018). Consumers' decision-making in online grocery shopping: The impact of services offered and delivery conditions. *Acta Univ Agric Silviculturae Mendelianae Brun, 66(5), 1239-1247.*

Bauerová, R., & Klepek, M. (2018). Technology acceptance as a determinant of online grocery shopping adoption. *Acta Univ Agric Silviculturae Mendelianae Brun, 66(3), 737-746.*

Campo, K., & Breugelmans, E. (2015). Buying groceries in brick and click stores: Category allocation decisions and the moderating effect of online buying experience. *Journal of Interactive Marketing*, *31*, *63-78.*

International Journal of Knowledge Engineering and Management,
Florianópolis, v. 11, n. 31, p. 01-29, 2022.
• ISSN 2316-6517 •
• DOI: 10.29327 •

Conforto, E. C., Amaral, D. C., & Silva, S. L. (2011). Roteiro para revisão bibliográfica sistemática: Aplicação no desenvolvimento de produtos e gerenciamento de projetos. *In 8º Congresso Brasileiro de Gestão de Desenvolvimento de Produto – CBGDP*, Porto Alegre, RS. Proceedings (on-line).

Desrochers, C., Léger, P. M., Fredette, M., Mirhoseini, S., & Sénéchal, S. (2019). The arithmetic complexity of online grocery shopping: The moderating role of product pictures. *Industrial Management Data Systems*, *119(6), 1206-1222.*

Driediger, F., & Bhatiasevi, V. (2019). Online grocery shopping in Thailand: Consumer acceptance and usage behavior. *Journal of Retailing and Consumer Services*, *48, 224-237.*

Faraoni, M., Rialti, R., Zollo, L., & Pellicelli, A. C. (2019). Exploring e-Loyalty antecedents in B2C e-commerce: Empirical results from Italian grocery retailers. *British Food Journal*, *121(2), 574-589.*

Giroux-Huppé, C., Sénéchal, S., Fredette, M., Chen, S. L., Demolin, B., & Léger, P. M. (2019). Identifying psychophysiological pain points in the online user journey: The case of online grocery. In Marcus, A., & Wang, W. (Eds.), *8th International Conference on Design User Experience and Usability DUXU 2019 (pp. 459-473).* Springer Verlag.

Grashuis, J., Skevas, T., & Segovia, M. S. (2020). Grocery shopping preferences during the COVID-19 pandemic. *Sustainability*, *12(13).*

Handayani, P., Nurahmawati, R., Pinem, A., & Azzahro, F. (2020). Switching intention from traditional to online groceries using the moderating effect of gender in Indonesia. *Journal of Food Products Marketing, 26(6), 425-439.*

Harris, P., Dall'Olmo, R. F., Riley, D., & Hand, C. (2017). Online and store patronage: A typology of grocery shoppers. *International Journal of Retail & Distribution Management*, *45(4), 419-445.*

Hirogaki, M. (2015). Key factors in successful online grocery retailing: Empirical evidence from Tokyo Japan. *International Journal of Entrepreneurship and Small Business, 26(2), 139-153.*

Hood, N., Urquhart, R., Newing, A., & Heppenstall, A. (2020). Sociodemographic and spatial disaggregation of e-commerce channel use in the grocery market in Great Britain. *Journal of Retailing and Consumer Services*, *55, 1-17.*

Isa, K., Shah, J., Palpanadan, S., & Isa, F. (2020). Malaysians' popular online shopping websites during movement control order (MCO). *International Journal of Advanced Trends in Computer Science and Engineering, 9(2), 2154-2158.*

Jordan, P. W. (2002). *An introduction to usability*. CRC/Taylor & Francis Group.

Kalbach, J. (2017). *Mapeamento de experiências: Um guia para criar valor por meio de jornadas, blueprints e diagramas*. Alta Books.

Kitchenham, B., & Charters, S. (2007). *Guidelines for performing systematic literature reviews in software engineering*. EBSE Technical Report, EBSE-2007-01, Software Engineering Group, School of Computer Science and Mathematics, Keele University.

Levy, Y., & Ellis, T. J. (2006). A systems approach to conduct an effective literature review in support of information systems research. *Informing Science Journal*, *9*, 181-212.

Loketkrawee, P., & Bhatiasevi, V. (2018). Elucidating the behavior of consumers toward online grocery shopping: The role of shopping orientation. *Journal of Internet Commerce*, *17*(4), 418-445.

Moriuchi, E., & Takahashi, I. (2018). An empirical investigation of the factors motivating Japanese repeat consumers to review their shopping experiences. *Journal of Business Research*, *82*, 381-390.

Mortimer, G., Fazal-Hasan, S., Andrews, L., & Martin, J. (2016). Online grocery shopping: The impact of shopping frequency on perceived risk. *International Review of Retail Distribution and Consumer Research*, *26*(2), 202-223.

Morisso, J. G. D. (2021). *Fatores humanos e design de interação: Barreiras e facilitadores da experiência do usuário na utilização do comércio eletrônico de supermercados* (Master's dissertation, Universidade do Estado de Santa Catarina, Florianópolis, SC, Brazil).

Munson, J., Tiropanis, T., & Lowe, M. (2017). Online grocery shopping: Identifying change in consumption practices. In Kompatsiaris, I., et al. (Eds.), *Springer International Publishing INSCI 2017* LNCS 10673 (pp. 192-211).

Nielsen, J. (1993). *Usability engineering*. Academic Press/Morgan Kaufmann.

Norman, D. (1993). *Things that makes us smart: Defending human attributes in the age of the machine*. Perseus Books.

Osman, R., & Hwang, F. (2016). A method to study how older adults navigate in an online grocery shopping site. *4th International Conference on User Science and Engineering i-USEr*. Institute of Electrical and Electronics Engineers Inc.

Pauzi, S., Chin, T., Choon, T., & Sulaiman, Z. (2017). Motivational factors for online grocery shopping. *Advanced Science Letters - American Scientific Publishers*, *23*(9), 9140-9144.

Pauzi, S., Thoo, A., Tan, L., Muharam, F., & Talib, N. (2017). Factors influencing consumers' intention for online grocery shopping - A proposed framework. *5th International Conference on Manufacturing Optimization Industrial and Material Engineering (MOIME)*. Institute of Physics Publishing.

Petticrew, M., & Roberts, H. (2006). *Systematic reviews in the social sciences: A practical guide*. Blackwell Publishing.

Seitz, C., Pokrivčák, J., Tóth, M., & Plevný, M. (2017). Online grocery retailing in Germany: An explorative analysis. *Journal of Business Economics and Management*, *18*(6), 1243-1263.

Subbulakshmi, S., & Jayanthi, V. (2020). Consumer perception towards online grocery shopping in Chennai. *Test Engineering and Management*, *82*, 14451-1454.

Tandon, U., Kiran, R., & Sah, A. (2018). The influence of website functionality, drivers and perceived risk on customer satisfaction in online shopping: An emerging economy case. *Information Systems and e-Business Management*, *16*(1), 57-91.

Tullis, T., & Albert, B. (2013). *Measuring the user experience* (2nd ed.). Elsevier/Morgan Kaufmann.

Van Droogenbroeck, E., & Van Hove, L. (2019). Triggered or evaluated? A qualitative inquiry into the decision to start using e-grocery services. *International Review of Retail Distribution and Consumer Research*, *30*(2), 103-122.

Zheng, Q., Chen, J., Zhang, R., & Wang, H. (2020). What factors affect Chinese consumers' online grocery shopping? Product attributes, e-vendor characteristics, and consumer perceptions. *China Agricultural Economic Review*, *12*(2), 193-213.