

Consumer Behavior in Online Retail

ALBÉRICO TRAVASSOS ROSÁRIO¹, JOAQUIM A. CASACA²

¹GOVCOPP and Universidade Europeia, IADE,
Faculdade de Design, Tecnologia e Comunicação,
Av. D. Carlos I, 4, 1200-649 Lisboa,
PORTUGAL

²UNIDCOM/IADE, Unidade de Investigação em Design e Comunicação,
Universidade Europeia, IADE, Faculdade de Design, Tecnologia e Comunicação,
Av. D. Carlos I, 4, 1200-649 Lisboa,
PORTUGAL

Abstract: - Rapid technological advancements have led to significant growth in e-commerce, with more people purchasing products online. These online shopping activities are associated with multiple benefits, such as convenience, access to various products, and consumer ability to compare offers and select the most favorable deal. So, understanding consumer behavior in online retail is crucial for businesses to design effective marketing strategies, enhance the user experience, build trust, and drive sustainable growth in the digital marketplace. This paper aims to identify research trends in the field through a systematic bibliometric literature review of research on consumer behavior in online retail. The review includes 115 articles published in the Scopus™ and WoS™ databases, presenting up-to-date knowledge. The R-Tool “Biblioshiny for Bibliometrix” was used to perform a comprehensive bibliometrics analysis based on evaluative and relational bibliometrics techniques, which allow us to analyze the knowledge structure in terms of three different structures: conceptual, intellectual, and social. The findings indicate that the factors affecting consumer online behaviors in e-commerce can be categorized into seven significant classifications: demographic, psychographic, economic, technological, social, environmental, and cultural. The success of online retail businesses depends on their ability to cater to diverse customer needs and expectations to ensure that these factors are met. As a result, companies need to address potential challenges such as cybersecurity risks, data privacy concerns, cultural stereotypes, and misinterpretations that may hinder customers' willingness to participate in online shopping activities.

Key-Words: - Consumer behavior, retailing, e-commerce, consumption, decision-making process, bibliometrics.

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1 Introduction

Online shopping has become a significant aspect of daily life in modern society. Most people have hectic schedules, making online shopping a convenient option. In addition, Internet adoption and easy access to affordable digital devices like smartphones and tablets have changed how consumers buy products. Initially, the Internet was used as a source of information and communication with family, friends, and peers. However, there has been a significant increase in its use for purchasing and engaging with brands in recent years. This has resulted in the rapid growth of online shopping, which [1] defined as selling and buying products online. Online retail exposes consumers to products from competing brands, allowing them to choose the

best deals. According to [2], global e-commerce retail sales reached US\$5.7 trillion in 2022. With over 5 billion people using the Internet, online sales have significantly increased. [1] identify other factors causing the surge in online shopping, including convenience, fun, price comparisons, reduced traveling time, easy payment, and consumers' ability to shop from the comfort of their homes. Some other customers prefer online retail due to the ability to access feedback from other customers, quick services, user-friendliness, and discounted prices. As technologies become the norm, more people increasingly prefer online shopping over traditional shopping.

However, the success of online shopping is primarily shaped by consumer behaviors. [3] defines

consumer behavior as "the study of individuals, groups, or organizations and the processes they use to select, secure, and dispose of products, services, experiences, or ideas to satisfy needs." It entails consumer preferences, attitudes, and emotions influencing purchasing behaviors or decisions, [4]. Several factors influence consumer online behaviors, including personal innovativeness, trust, access to information, search engines, product presentation in the online store, and navigation structure, [5]. Some customers consider specific product characteristics such as product knowledge, differentiation, and price. In addition, different consumer demographics have varying purchasing behaviors due to factors like resources, lifestyles, values, and cultural beliefs and practices. However, [1] found that in some cases, customers have trouble making purchasing decisions online since they cannot see, smell, touch, or try the products they intend to purchase. For example, products like shoes and apparel may require the customer to try them on before purchasing, which is impossible in online stores, [6]. This lack of tangibility creates the fear of purchasing low-quality or imitated goods, affecting consumer trust in online vendors, [7]. Based on these findings, this systematic literature review synthesizes data from multiple studies to create a comprehensive report on consumer behaviors in online retail. It provides a detailed analysis of the consumer decision-making process in online environments, the theoretical frameworks explaining consumer online behaviors, the importance of understanding these behaviors, factors influencing them, and potential challenges hindering positive consumer online behaviors.

2 Methodology

The literature review is a research method that contributes to the systematic advancement of new knowledge in the field, [8]. A systematic review is a specific methodology that uses systematic and explicit methods to identify, select, and critically appraise relevant research and collect and analyze data from the studies included in the review, [9]. This study follows the principles of transparency, inclusivity, explanatory, and heuristic nature recommended by [10]. In addition to the systematic literature review, a bibliometrics analysis was also performed to provide a structured analysis of a large body of information, infer trends over time, identify shifts in the boundaries of the disciplines, and detect the most prolific scholars and institutions, [11]. The bibliometric analysis is founded on science mapping, based on the quantitative approach of

bibliometric research methods. It maps the structure and development of scientific fields and disciplines, [12]. This study follows the standard workflow proposed by [12], namely the last four stages: (a) data collection, (b) data analysis, (c) data visualization, and (d) interpretation.

2.1 Data Collection

The first sub-stage in data collection is selecting the databases to search the publications for the literature review. Therefore, the databases Web of Science™ (WoS), run by Clarivate, and Scopus™ produced by Elsevier Co., were considered for the search for relevant literature.

The second sub-stage is data loading and converting. The two databases used the keywords "consumer behavior/behaviour," "retailing," and "online retailing" for data loading (Table 1 and Table 2 in Appendix).

In this stage, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reporting guideline was used to prepare an accurate, transparent, and complete systematic literature review. This model was used since it provides researchers with a rigorous methodology to demonstrate why the review was done, how studies were identified and selected, and the findings, [9]. Adapted from PRISMA, Figure 1 (Appendix) presents the systematic literature review workflow used for screening and selecting information sources to ensure the precision and validity of the presented data. This process resulted in 115 documents, which will be analyzed in this systematic literature review.

Since the primary data source for most of the science mapping software is the Web of Science format, we used the CiteSpace software, [13] to convert the Scopus file to a WoS file format. In the end, we obtained two text files for use with the R-Tool "Biblioshiny for Bibliometrix" [11].

2.2 Data Analysis

The R-Tool "Biblioshiny for Bibliometrix" [11] was used to perform a comprehensive bibliometrics analysis. The bibliometrix R-package [11] provides tools for quantitative research in bibliometrics and scientometrics. Data analysis entails descriptive analysis and network extraction using different units of analysis (author, document, journal, reference, keyword, country, etc.), [11].

The bibliometric analyses used in this study were co-word analysis (which studies the conceptual structure of a research field), co-author analysis (which studies the social structure and collaboration networks), and co-citation analysis (which helps detect a shift in paradigms and schools of thought).

2.3 Data Visualization

Visualization techniques represent a science map and the results of the different analyses, [11]. One technique used is thematic analysis, which assisted in identifying and discussing the themes in the literature. Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within the data, [14]. The bibliometric findings presented in the next section include evaluative and relational techniques.

3 Bibliometric Results

Bibliometrics is a research field in information and library sciences that applies mathematics and statistical methods to books and other media of communication, [15]. This represents a method of statistical analysis applied to publications, offering quantitative insights into academic literature, [16], [17], [18].

This study applied evaluative and relational bibliometric techniques, [19], [20]. Evaluative metrics focused on measuring productivity, such as the number of papers published per academic year or author, and impact metrics, such as the total number of citations, citations within a specific time frame, and citations per author. Hybrid metrics, which combine productivity and impact, were also considered, including the average number of citations per paper and specific indices designed to reflect both aspects. On the other hand, relational techniques explored connections within the research landscape, such as the structure of scientific fields and the emergence of new themes and methodologies, [16]. Commonly used relational methods include co-citation, co-authorship, co-word, and bibliographic coupling analyses. These techniques enable the examination of (i) the social structure of a scientific field (e.g., co-authorship analysis); (ii) the international dimension of the research (e.g., authors' affiliations at the institutional, university, or country level); (iii) the conceptual framework and critical topics addressed within a field (e.g., co-word analysis); and (iv) the intellectual structure of a research domain (e.g., co-citation and bibliographic coupling), [12], [21].

The bibliometrics analysis was conducted based on the 115 documents, allowing us to highlight the topic's significance.

3.1 Evaluative Techniques Collection

3.1.1 Publication Trends

The research on the topic under study can be divided into three phases (Figure 2, Appendix): the

first phase (2019-2021) is characterized by constant production of 22 and 23 publications, the second phase (2021-2022) is the most productive with 28 publications, and the last phase (2022-2023) shows a sharp decrease compared with the precedent periods (20 documents published). On the other hand, the average number of citations per year reveals a decreasing trend, going from an annual average of 37 citations in 2019 to a yearly average of 2 citations in 2023.

Figure 3 (Appendix) presents the relationships among top authors, the references they cite (intellectual roots), and the keywords (research contents) they use.

3.1.2 Most Relevant Sources

Table 3 (Appendix) shows the sources that have published the most documents on the topic. The International Journal of Retail and Distribution Management and the Journal of Retailing and Consumer Services are the sources with the most publications, with 13 papers each. The International Review of Retail, Distribution, and Consumer Research and the Journal of Marketing Intelligence & Planning rank second, with three publications each.

3.1.3 Seminal Articles

Analyzing the most cited documents allows for identifying seminal articles according to the quality expressed by the scientific community. Table 4 (Appendix) shows the number of author citations for each article, identifying seminal works. With 284 citations, the article '*Why do people use food delivery apps (FDA)? A uses and gratification theory perspective*' [22], is the most cited, followed by '*Online consumer resilience during a pandemic: An exploratory study of e-commerce behavior before, during and after a COVID-19 lockdown*' [23], with 170 citations and '*Online retailing across e-channels and e-channel touchpoints: Empirical studies of consumer behavior in the multichannel e-commerce environment*' [24], with 117 citations.

3.2 Relational Techniques

In this section, we draw a big picture of scientific knowledge supported by science mapping provided by the R-Tool "Biblioshiny for Bibliometrix", [11]. Science mapping allows investigating scientific knowledge from a statistical point of view in terms of three different structures: (1) conceptual structure, presenting what science talks about, the main themes and trends; (2) intellectual structure, informing how the work of an author influences a given scientific community; and (3) social structure,

enlightening how authors, institutions and countries interact each other.

3.2.1 Conceptual Structure

The conceptual structure represents relations among concepts or words in a set of documents. It is used to understand the topics covered by a research field to define the most important and most recent issues, [11]. The co-occurrence network represented in Figure 4 (Appendix) is composed of nine clusters of keywords, with relevance to the red cluster, where the keywords ‘impact’, ‘satisfaction’, ‘intentions’, and ‘loyalty’ stand out, and the purple cluster, where the most representative keys are ‘internet’, ‘consumption behavior’, and ‘retailing’.

Applying a clustering algorithm on the keyword network, Biblioshiny™ summarizes the results in various research themes, mapped in two-dimensional spaces: importance degree (centrality) and development (density), [11]. The map classified ‘personalization and customer satisfaction’ research into four groups: motor themes (strong centrality and high density), niche themes (high centrality and low density), emerging or declining themes (low centrality and low density), and basic themes (low centrality and high density) (Figure 5, Appendix). Each theme on the thematic map contains three clusters, except the niche themes, which only contain two clusters.

Emerging themes (lower-left quadrant) represent themes such as ‘haptic information,’ ‘interactivity,’ and ‘planned behavior.’ Motor themes (upper-right quadrant) identify well-developed and relevant subjects of academic investigation that can drive future research. The results show that ‘consumer behavior and online retail’ have been investigated as ‘impact,’ ‘internet,’ and ‘satisfaction.’ This investigation stream is a base to develop relevant aspects such as ‘consumer returns’, ‘consumption behavior’, and ‘electronic commerce’. Basic themes (lower-right quadrant) include only subjects such as ‘delivery’. Niche themes (upper-left quadrant) present a cluster with ‘impulse buying’ and ‘virtual reality’ as the most important subjects.

3.2.2 Intellectual Structure

The intellectual structure shows the relationships between nodes, which represent references. Citation analysis is the most common analysis in bibliometrics in the form of co-citations between authors or documents. Figure 6 (Appendix) shows a co-citation network comprising seven clusters. The most salient clusters are the blue and purple clusters. The authors Fornel, C. and Hair, J. stand out in the blue cluster. On the other hand, Podsakoff, P.M. and

Armstrong, J.S. are the most relevant authors in the purple cluster.

3.2.3 Social Structure

The social structure shows how authors or institutions relate to others in scientific research. The most common social structure is the co-authorship network. This network allows researchers to discover, for example, groups of regular authors, influential authors, hidden communities of authors, and relevant institutions in a specific research field, [11]. Figure 7 (Appendix) exhibits the country’s collaboration map. The most relevant collaborations are from China to the USA (four frequencies).

4 Theoretical Perspectives

The rapid growth of online retail continues to influence consumer behavior, fundamentally altering how people shop and interact with businesses. With the convenience of purchasing goods and services at the click of a button, consumers increasingly turn to online platforms for their shopping needs, [32]. Several factors are driving this shift, including the growth of mobile devices, the availability of high-speed Internet, and the expansion of e-commerce offerings. In addition, the COVID-19 pandemic accelerated this trend due to lockdowns and social distancing measures that prompted more consumers to embrace online shopping for safety and convenience, [33]. Consequently, businesses are adapting their strategies to meet the changing demands of digitally savvy consumers. This has resulted in an increased focus on user experiences, personalized recommendations, and efficient delivery services to stay competitive in the dynamic online retail environment, [34]. This section of the literature review brings together insights about the rapid growth of online retail, focusing on the key consumer behaviors and decision-making processes that drive this trend.

4.1 Overview of the Key Concepts

4.1.1 Online Retail

E-commerce can be defined as the process of buying and selling goods and services over the Internet. It has rapidly expanded in recent years changing the face of trade how companies conduct their business and how consumers make their purchases, [35]. These factors have been pivotal to this growth since the convenience and the ability of consumers to purchase goods and services at any given time and

from any location have been key, [36]. To sell their merchandise, companies utilize different channels which may include websites, mobile applications, and marketplaces, among others, [37], [38]. This has been one of the most influential factors as it provided equal opportunities for all businesses. It has provided small businesses and entrepreneurs a platform to sell their products across the globe even without having a brick-and-mortar store, [29]. Innovations in technology such as secure payment systems, inventory management systems, and data analytics, have been instrumental to this growth, enhancing the experience of businesses and their operations in the shopping industry, [39]. Online retail is now a dominant player in the new world order of economics, an influential force that is changing the face of various industries, disrupting the conventional ways of doing retail business, and spurring progress in the field of commerce.

4.1.2 Consumer Behaviors

Consumer behaviors are actions, preferences, and decisions of consumers in buying or using products and services. It is crucial for companies to know these behaviors in order to be able to market their products well, forecast the demand, and come up with products that will be best suited for the consumers, [40]. This has been made possible by the growth of online retailing which has altered consumer behavior in terms of increasing the use of digital channels, evolving shopping behaviors, and increasing the standard of convenience, value and personalized experiences, [24], [41]. The use of the Internet has made it easier for consumers to get the information they need to make a purchase decision, which includes the ability to search for products, compare prices, read reviews, and make informed decisions, [42]. Social media and online communities have also emerged as critical influencers of consumer perceptions and behaviors. Word of mouth, social media influencers, and trends that go viral are some of the factors that greatly affect what people decide to buy, [23], [43]. In response to these changes, businesses must adapt by using digital tools and data-driven insights to provide personalized experiences. Whether interacting online or in physical stores, aligning with evolving consumer behaviors is critical to staying competitive in today's market.

4.2 Consumer Decision-Making Process in Online Retail

Consumer decision-making in online retail undergoes various stages. Although they may differ from one individual to another, the Engel-Kollat-

Blackwell (EKB) model identifies five main stages (Figure 8, Appendix), which include i) recognizing the problem, searching, evaluating alternatives, purchasing, and assessing post-purchase outcomes, [44]. These stages are widely accepted in research to reflect consumer behaviors when making purchasing decisions. For example, after identifying a need, consumers use the Internet to search for products that address their needs, [45]. E-commerce platforms allow them to compare alternative products from distinct brands before purchasing. After purchasing products online, they may have positive or negative experiences, which form their post-purchase outcomes.

However, online consumer behavior is a complex phenomenon with multiple underpinnings and interactions. For example, customer product knowledge and perceived risks can influence their willingness to complete online transactions, [46]. Other factors that affect the decision-making process include time costs, retailer characteristics, social media influence, trends, trust, and enabling technologies.

4.2.1 Product Knowledge

Product knowledge influences consumers' online decision-making processes. For instance, consumers make more informed decisions when they deeply understand the products they are considering purchasing, [47]. This understanding encompasses various aspects, such as the product's features, specifications, benefits, and potential drawbacks, [48], [49]. Access to comprehensive product information, including detailed descriptions, images, videos, and customer reviews, empowers consumers to evaluate the suitability and value of the product relative to their needs and preferences, [50]. Besides, product knowledge enables consumers to compare alternatives effectively, assess quality, and anticipate the overall experience associated with the purchase. This helps reduce uncertainty and increase confidence in their decision-making.

4.2.2 Time Costs

Modern consumers value convenience and efficiency and are often sensitive to the time required to complete transactions online. Time costs refer to factors like how easy it is to navigate a website, the speed and simplicity of the checkout process, and the efficiency of delivery services, [28]. When consumers face delays, complicated steps, or lengthy wait times, they are likelier to abandon their shopping carts or turn to competitors, [51], [52]. In order to do this, businesses need to simplify their websites and business models. By

minimizing time, it is possible to enhance the customers' experience, enhance their satisfaction, and thus enhance the chances of completing a sale.

4.2.3 Perceived Risk

Perceived risk is one of the most important factors that influence consumers' decisions in the context of online shopping. If the buyers feel that there are high risks involved in the purchase process in terms of finance, quality of the product, or security then they may cancel the order or not place the order at all, [31], [53]. This risk perception can be attributed to various factors that include the risk of buying a product that may not meet the expected performance standards, risks posed by privacy and data concerns, or even the risk of transacting with an unknown retailer, [54]. There are several measures that businesses can implement to minimize risk perception and gain the trust of consumers. These are: ensuring that information is accurate, installing strong security systems, and ensuring that trust factors are incorporated in all the stages of the purchasing process, [55], [56]. Some of the measures may include providing easy return and exchange policies, providing secure ways of transacting, and having authentication seals to make the customers comfortable and enhance their experience.

4.2.4 Retailer Characteristics

Retailer characteristics influence consumers' perceptions and preferences when making online purchasing decisions. Brand reputation, trustworthiness, customer service, and pricing strategies significantly influence consumers' perceptions of retailers and willingness to engage in transactions, [57], [58], [59]. Established brands with a compelling reputation for quality, reliability, and customer satisfaction often enjoy a competitive advantage in the online marketplace, [60]. In addition, retailers that demonstrate responsiveness, professionalism, and integrity in their interactions with customers are more likely to foster trust and loyalty, thus influencing purchase decisions and driving repeat business.

4.2.5 Social Media Influence and Trends

Consumers are exposed to constant content with the pervasive use of social media platforms. These product recommendations, reviews, endorsements, and viral trends are shared by peers, influencers, and brands, [61]. As a result, social media serves as a source of inspiration and discovery and facilitates social validation and peer influence, [62]. These roles are crucial since most consumers seek

validation and reassurance from their social networks before making purchase decisions, [63]. Therefore, businesses should leverage social media platforms to engage with consumers, amplify their brand messaging, and capitalize on emerging trends to drive awareness, engagement, and conversion.

4.2.6 Trust

Trust is a foundational element that underpins consumers' online decision-making processes. Trust encompasses confidence, reliability, and credibility in the retailer, the product, and the shopping experience, [64], [65]. Trust is essential for building long-term customer relationships and fostering loyalty and advocacy. Trust can be cultivated through various means, including transparent communication, consistent delivery of promises, ethical business practices, and positive customer experiences, [30]. Businesses must prioritize trust-building initiatives, such as secure transactions, authentic customer reviews, and responsive customer support, [66]. These approaches can instill consumer confidence and differentiate businesses in the competitive online marketplace.

4.2.7 Enabling Technologies

Enabling technologies like website design, usability, and recommendation systems influence consumers' online decision-making experiences. For instance, a well-designed and user-friendly website enhances navigation, facilitates information retrieval, and simplifies purchasing, [67], [68]. Consequently, these positive aspects reduce friction and improve the overall shopping experience. Intuitive interfaces, clear navigation menus, responsive design, and fast-loading pages provide a seamless user experience and increase engagement and conversion rates, [69], [70]. In addition, recommendation systems leverage data analytics and machine learning algorithms to personalize product recommendations based on consumer preferences, browsing history, and purchase behavior, [71]. Presenting relevant and timely recommendations enables businesses to enhance discoverability, cross-selling, and upselling opportunities, ultimately influencing purchase decisions and driving revenue growth.

4.3 Theoretical Frameworks

Consumer behaviors in online retail can be interpreted using various theoretical approaches. For instance, [72] identify multiple theories that can be used to understand consumer behavior in online grocery shopping, including the theory of interpersonal behavior, norm activation model (NAM), theory of research action (TRA), theory of

planned behavior (TPB), and technology acceptance model (TAM). However, the researchers found that TPB and TAM are the most researched and commonly used theories since they encompass multiple aspects explaining different consumer behaviors. On the other hand, [22] applies the uses and gratifications (U&G) theory to illustrate the increased use of food delivery apps (FDA). This research focuses on three theories (TPB, TAM, and U&G) to explain consumers' online behavior in e-commerce.

4.3.1 Theory of Planned Behavior

The theory of planned behavior (TPB) is a theoretical model that aims to explain human behavior, especially in decision-making situations. TPB postulates that the decision to perform a certain behavior is determined by three factors: the attitude towards the behavior, subjective norm, and perceived behavioral control, [72]. An attitude toward the behavior is defined as a psychological phenomenon that consists of the positive or negative appraisal of the behavior, and this attitude is a function of the perceptions of the consequences of the behavior and the importance placed on those consequences, [25]. Subjective norms are the perceived social pressure to perform or not perform a certain behavior and it is influenced by the opinions of significant others such as family, friends, or peers. Control of behavior is the perception of an individual on the level of difficulty or ease in performing an action, including consideration of skills, resources, and other conditions. TPB is especially applicable to the analysis of online consumer behavior since it helps to reveal how and why consumers decide to shop online. For example, the attitudes towards online shopping can be influenced by factors like perceived convenience, product variety, price competitiveness, and the quality of experience that is provided by e-commerce sites, [73], [74]. In this context, subjective norms encompass influences from online communities, social media contacts, and recommendations from friends and peers, which define consumers' perception of the acceptability and desirability of online shopping, [75]. Perceived behavioral control includes features like how easy it is to use the website, the level of trust that the customer has in the retailer, the security of the transaction when paying online, and the experience that the consumer has when it comes to online shopping, [76]. All these elements play a role in determining the consumer's confidence and the consumer's perceived potential for success in the online shopping process, [77]. It thus enables

businesses to formulate proper marketing plans, develop enhanced website features, and increase customer participation in line with the consumers' desires and preferences. In this way, it improves the satisfaction of the customer, increases the likelihood of repeat business, and increases the conversion rate in the e-commerce market that is increasingly becoming crowded.

4.3.2 Technology Acceptance Model

The technology acceptance model (TAM) is a theoretical model that explains the factors influencing the acceptance of technology, [72]. TAM proposes that the likelihood of a person using technology depends on the perceived usefulness and perceived ease of use. Perceived usefulness can be defined as the perception that the use of technology will enhance task performance and increase personal productivity, [78]. Perceived ease of use, on the other hand, is the perception that a technology is simple and free of effort, [72]. TAM postulates that these factors determine users' attitudes toward the technology, thus affecting their decision to embrace or reject it, [69]. Also, TAM also considers other factors such as demographic characteristics, social influences, and availability of resources that may affect users' attitudes and their decision to use the technology. TAM is particularly useful in the framework of online consumer behavior since it helps to identify the factors that affect the adoption of e-commerce, websites, mobile applications, and other digital technologies. This model is especially useful to businesses as it allows them to determine the consumers' perception of the usefulness and ease of use of their digital platforms, [79]. This understanding helps them to determine where they can make enhancements to the design and features of the online platforms so that the experience can be more pleasing to the customers, resulting in higher satisfaction, engagement, and conversion rates, [80], [81]. Also, TAM makes it possible for businesses to determine the factors that can hinder the adoption of new technologies by consumers, hence the development of strategies that can be used to overcome these barriers, [78]. Therefore, TAM provides a solid theoretical framework for analyzing the interactions between technology and consumers in the context of e-commerce.

4.3.3 Uses and Gratifications Theory

The uses and gratifications (U&G) theory is a communication framework that explores why and how individuals use media to meet their needs and achieve specific gratifications. Unlike traditional media theories, which focus on the impact of media

messages on audiences, the U&G theory emphasizes the active role of individuals in selecting and using media based on their motivations and goals, [22]. According to this theory, people are not passive consumers of media content but active participants who deliberately choose media platforms and content to fulfill needs such as information, entertainment, social interaction, personal identity, and emotional satisfaction. The U&G theory is valuable for businesses because it helps them understand why consumers engage with online platforms and how they derive gratification from them. By applying this model, companies can gain insights into the motivations behind consumers' online behaviors and use these insights to create offerings that align with their needs and preferences, [82]. For example, consumers may visit online retail platforms to meet their needs for convenience, variety, or social interaction, [83]. By recognizing patterns in consumer behavior, businesses can anticipate these needs and craft personalized marketing campaigns, recommendations, and user experiences that resonate with consumers' motivations and gratifications, [22], [84]. In addition, the U&G theory highlights the importance of user engagement and satisfaction in driving loyalty and repeat business. It emphasizes the need for companies to create compelling and meaningful online experiences that align with consumers' goals and aspirations.

4.4 Factors Affecting Consumer Behavior in Online Retail

Research findings on the factors that influence online consumer behavior in e-commerce are still fragmented. Different studies found factors ranging from consumer engagement to personality, usefulness, ease of use, convenience, price, trustworthiness, physical environment, and social surroundings. This research classifies the distinct factors into seven major categories (Figure 9, Appendix), including demographic, psychographic, economic, technological, social, cultural, and environmental.

4.4.1 Demographic Factors

Multiple demographic factors, such as age, gender, income, education, occupation, and family status, influence consumer behavior in online retail. These factors collectively define consumer segments within a population. For instance, age is a significant demographic variable, as different age groups exhibit distinct online shopping behaviors. This is evidenced in [85] research, which found that people born during the same period have shared

values, attitudes, expectations, and beliefs, which affect their shopping behaviors. For example, younger demographics, such as millennials and Gen Z, are often more tech-savvy and digitally native, [84]. As a result, they embrace new digital trends and platforms with ease. They may prefer mobile shopping apps, social media-driven commerce, and interactive shopping experiences. For example, [86] found that the increased concerns among millennials about their appearance and wellness have increased young men's use of online retail stores to purchase fitness equipment, merchandise, and skin care. On the other hand, older demographics, such as baby boomers and Generation X, may have varying levels of comfort with technology and prefer more traditional online retail channels with user-friendly interfaces and reliable customer support.

Gender can also influence online shopping preferences, with research suggesting that men and women may have different purchasing priorities and preferences for product categories. [87] found that women spend more hours searching for information before purchasing, while men pay little attention to product comparisons regarding prices and functions. In addition, the researcher found that women often use e-commerce platforms to buy cosmetics and health products, while men use online platforms to pay for computer programs. In addition, income levels impact consumers' purchasing power and preferences for premium or budget-friendly products and services in online retail, [88], [89]. Education and occupation can play a significant role in shaping online shopping behaviors. Those with higher levels of education tend to be more digitally inclusive and know the various measures that need to be taken when it comes to online security which in turn affects their buying behavior, [90]. Also, family status, for instance being married or having children may influence the products and services that are offered in the online market such as household items, children's apparel, or family entertainment, [91]. Therefore, demographic factors provide relevant information regarding the needs, wants, and behaviors of the different consumer segments in the online retailing environment.

4.4.2 Psychographic Factors

Psychographic factors are related to the personal characteristics of people such as their lifestyles, personalities, values, beliefs, interests, and attitudes towards shopping and consumption. These factors assist in determining the consumers' motivation and psychological needs, thus providing a richer understanding of the consumers' behavior in online shopping, [92], [93]. It is thus important to

understand these elements in order to develop more specific and relevant marketing strategies, messaging, products, and customer interactions that would speak to the consumers' wants and needs, [94]. For example, consumers with the adventurous personality type who enjoy the new and unordinary may be interested in online stores that provide an opportunity to buy unique or unusual products and services, [95], [96]. However, some customers may value factors such as quick delivery and a seamless shopping experience, which is why they may prefer websites that are simple to use, have brief checkout processes, and provide reliable shipping services. Also, environmental friendliness, social responsibility, and ethical sourcing have been found to have an impact on the choice of brands and products that consumers purchase in online stores, [97], [98]. Thus, by understanding consumers' psychographic profiles and addressing their needs and values, it is possible to establish more effective communication with the target audience, increase the likelihood of repeat purchases, and enhance customers' involvement.

4.4.3 Economic Factors

Economic factors are the key factors that influence consumer behavior in the online retailing process. Such factors include the general economic environment, the personal economic position of the consumer, and the buying power, [99]. Some of the key factors that include the unemployment rates, inflation rates, and the income levels of consumers determine the amount of money that consumers can spend as well as their willingness to spend it. For example, during economic stability and growth periods, consumers tend to have higher disposable incomes, [100], [101]. This increased financial flexibility often leads to more discretionary spending and a greater willingness to shop online. On the other hand, economic downturns, recessions, or financial crises can make consumers more cautious and price-sensitive, [102]. In such times, they may focus more on essential purchases and seek value-driven options in online retail, such as discounts, promotions, or affordable alternatives, [103]. As a result, businesses in the online retail sector must keep a close eye on economic trends and adjust their strategies to align with consumers' changing needs and preferences during different economic conditions.

4.4.4 Technological Factors

Technological factors play a crucial role in driving innovation and transforming the digital shopping landscape, which, in turn, influences consumer

behaviors. Advances in technology have revolutionized how consumers shop online, interact with brands, and experience the shopping process, [104], [105]. One of the key technological developments affecting online retail is the growth of e-commerce platforms and the widespread use of mobile devices, [106]. Due to the use of smartphones and tablets, consumers can shop for products and services on the Internet at any time and at any place thus increasing m-commerce transactions. In addition, technologies such as social commerce, augmented reality (AR), and virtual reality (VR) have changed the face of e-commerce and have provided new ways of shopping online, [107], [108], [109], [110]. These innovations enable the consumers to engage with more engaging and interactive products like the ability to try on goods virtually or see them in 3D.

AI and machine learning algorithms are also instrumental in the operation of personalized recommendation systems, chatbots, and virtual personal assistants, for example, in recommending products, customer' service, and shopping advice, [111], [112], [113]. These technologies enable businesses to suggest specific products, respond to customers' queries, and help them in choosing the right products. Moreover, the development of the digital payment system including the use of mobile wallets, contactless payments, and even the integration of cryptocurrency has ensured that transactions are processed faster, are more secure, and are convenient for consumers, [114]. Thus, these technologies can be leveraged by businesses to outperform their competitors and offer better services to the customers through improved user engagement, interaction, and introducing new features and options as per the customer's preference and needs, [115], [116]. However, while technological factors enable and drive innovation and revolutionize online retail, it also poses challenges such as threats to cybersecurity, data privacy, and the need for more capital to invest in infrastructure and digital capabilities, [117], [118]. Firms that wish to be successful in the digital store concept have to meet these challenges by putting in place strong security measures as well as adequate infrastructure that will enhance the growth and performance of the firms.

4.4.5 Social Factors

Social factors include interactions with others, peer groups and cultural influences that affect the shopping behavior of individuals. This is so because social media platforms have emerged as powerful influencers of consumer behavior, [119]. They

shape perceptions, preferences, and purchase decisions through user-generated content, peer recommendations, influencer endorsements, and social validation, [120], [121]. Consumers increasingly turn to social media channels to discover new products, seek recommendations, and engage with brands, [122], [123]. These activities create opportunities for businesses to leverage social commerce and influencer marketing strategies to effectively reach and engage with their target audience.

Moreover, social factors such as social status, social identity, and social comparison play a role in shaping consumers' preferences for specific brands, products, and shopping experiences. Consumers may be influenced by social networks and reference groups, where they seek to emulate or differentiate themselves through their purchasing choices in online retail, [124], [125]. Businesses that understand and align with prevailing social factors can enhance their brand reputation, foster community engagement, and build trust and loyalty with consumers in the online retail space, [27]. However, social factors also present challenges, such as managing online reputation, addressing negative feedback, and navigating cultural sensitivities in diverse markets.

4.4.6 Cultural Factors

Cultural factors include cultural values, beliefs, norms, and traditions influencing individuals' shopping decisions. Culture encompasses a broad spectrum of dimensions, including language, religion, ethnicity, social customs, and historical context, which shape consumers' perceptions, preferences, and consumption patterns, [66]. Cultural differences across regions and demographic segments influence consumers' attitudes toward online retail brands, products, and shopping experiences, [126]. For example, cultural preferences for specific colors, symbols, or aesthetics may impact product design and marketing strategies to resonate with local tastes and sensibilities, [127]. Moreover, cultural values such as collectivism versus individualism, uncertainty avoidance, and long-term orientation influence consumers' motivations and decision-making processes in online shopping. Therefore, businesses must consider cultural nuances and adapt their marketing messages, product offerings, and user experiences to align with cultural preferences and sensitivities. This helps to engage with diverse consumer segments in the global marketplace effectively.

Cultural factors influence consumers' perceptions of brand authenticity, trustworthiness, and credibility, as well as their expectations for ethical and socially responsible business practices. Businesses that demonstrate cultural sensitivity, respect for local customs, and inclusivity in online retail operations can build stronger connections with consumers, foster brand loyalty, and drive engagement and sales in culturally diverse markets, [128], [129]. However, cultural factors also pose challenges, such as navigating cultural differences, managing cross-cultural communication, and avoiding cultural stereotypes or misinterpretations, [130]. Ultimately, cultural factors highlight the importance of cultural relevance, adaptation, and inclusivity in shaping successful online shopping experiences and driving business growth in diverse cultural contexts.

4.4.7 Environmental Factors

Environmental factors encompass external forces and contextual influences that impact consumer behavior in online retail. They reflect individuals' broader social, economic, and ecological conditions, [131]. These factors include situational variables such as time constraints, geographic location, weather conditions, and accessibility to online resources, which can influence consumers' online shopping behaviors and preferences, [26], [132]. For example, consumers may be more inclined to shop online during inclement weather or in regions with limited access to physical stores, seeking the convenience and flexibility of online shopping to fulfill their needs. Environmental factors can also encompass regulatory policies, industry standards, and ethical considerations related to environmental sustainability, labor practices, and data privacy, [133], [134]. Businesses prioritizing environmental sustainability, ethical sourcing, and transparency in their online retail operations can enhance their brand reputation, build trust with consumers, and differentiate themselves from their competitors, [135], [136]. Integrating environmental factors in strategic planning and decision-making processes enables businesses to understand better and respond to the evolving needs of environmentally conscious consumers, thereby fostering long-term relationships.

5 Conclusion

Rapid technological advancements have led to significant growth in e-commerce, with more people purchasing products online. In addition, changes like busy schedules, improved access to the Internet,

and affordable mobile devices have led to increased adoption of online shopping. People are now using these technologies to make purchases of goods directly from their homes without even visiting traditional stores. The usage of the internet has numerous advantages such as efficiency, a large product offering, and an ability for consumers to compare and contrast offers and make a suitable choice. Furthermore, the online platforms provide the customers with information on the reviews of other clients which in turn enable them to determine the quality of the product they are purchasing. These benefits affect consumer behavior and are important in explaining consumer's intention to participate in online transactions. Several factors influence decision-making, such as product knowledge, perceived risk, time, retailer characteristics, social media influence, trends, trust, and ease of use of technology. For instance, consumers will prefer to purchase through the Internet if they have good product knowledge, if they perceive low risks, and if they have confidence in the retailer. Knowing these factors enables businesses to come up with better ways of capturing the right customers.

There are various categories of consumer behaviors in e-commerce, which include demographic, psychographic, economic, technological, social, environmental, and cultural. Demographic factors include age, gender, education, occupation, and income which research has shown that they affect participation in online shopping. The findings indicate that the youth, particularly the millennial and Gen Z generations, as well as women, are more likely to engage in e-commerce. Psychographic data focuses on why consumers engage in online shopping, which includes their interests, values, beliefs, and attitudes toward e-retail.

Most of the decisions made by the consumers are influenced by social factors which include peer influence and recommendations. However, technologies like AR, VR, AI, and ML have enhanced the shopping experience and increased the rate of e-commerce adoption. For instance, AR and VR enhance the experience of online shopping, thus making the customer happy. Some of the cultural factors include the need for culturally appropriate products and services while the environmental factors include the need to embrace green consumption and sustainable business practices. The success of online retailing thus depends on the ability of the firms to meet these diverse customer needs while navigating challenges that include cybersecurity threats, data privacy issues, and cultural errors.

Understanding the consumers' behavior in the context of online retail has theoretical as well as practical significance for both the companies and the consumers. First, it is important to note that online retailing provides convenience to consumers as they are able to shop anytime and any day of the week with no restrictions of geography or time. Theoretical models, such as the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology, can be used to explain consumers' adoption and use of e-commerce sites. Second, online retailers apply consumer data to create individual approaches using recommendation systems and targeted marketing. These models of consumer decision-making and cognitive biases will assist us in understanding how people react to such strategies. Third, trust and security issues are paramount in the field of online retailing. The Technology Trust Model and the Theory of Perceived Risk offer explanations regarding consumers' perceptions of trust and security. To build the confidence of online retailers' customers, the latter has to make necessary investments in secure payment systems, encryption, and clear privacy policies. The use of social media and online reviews are also found to have a great impact on consumer behavior while the Theory of Planned Behavior and the Social Identity Theory help in explaining how social norms and an individual's self-identification with a group affect the purchase decisions. It is therefore important for retailers to monitor and respond to their online image and interact with their client's recommendations through social deal networks with to criticism. The Technology Acceptance Model and the Stimulus-Organism-Response model help in understanding how design elements influence consumer perceptions. Some of the practical recommendations that may be useful for businesses include the following: ensuring that the website is easy to navigate, using the appropriate mobile-friendly design, and having a clear and easy-to-use checkout process in order to improve the user experience. In addition, online retailers collect large volumes of data regarding consumer behavior, choices, and transactions. There are theories such as data mining, machine learning, and predictive modeling that assist businesses in making sense of this data. These analytics tools help retailers categorize their customers, address them with the right offers and promotions, and set the right prices for their products and services depending on the consumers' behavior. It is therefore important for businesses to understand consumer behavior in online retail to enable them to develop proper

marketing strategies, enhance the user experience, gain the trust of consumers, and hence enhance long-term growth in the digital marketplace. Theoretical frameworks and practical applications are equally important in defining the prospects of online retail companies.

Future courses of study in consumer behavior in the context of online retailing will encompass the following: (i) with the advent of new technologies and trends such as augmented reality and virtual reality, it is possible that future research will examine how these technologies can be implemented in online retailing to enhance the shopping experience, and how these technologies can shape consumer behavior. Studies could explore the effectiveness of augmented reality/virtual reality technologies in reducing uncertainty and enhancing the shopping experience; (ii) with the rise of voice assistants and smart speakers, researchers may examine how voice-based interfaces shape consumer behavior in online retail. This could include understanding consumer trust in voice-based transactions, the impact of voice search on product discovery, and the effectiveness of personalized recommendations through voice commerce platforms; (iii) as consumers become more socially and environmentally conscious, future research may explore how ethical considerations influence online purchasing behavior. This could involve investigating consumer perceptions of corporate social responsibility, the effectiveness of sustainability messaging in online marketing, and the role of eco-labeling and certifications in driving purchase decisions; (iv) cross-Channel Shopping and Omnichannel Experiences: With consumers increasingly using multiple channels (e.g., websites, mobile apps, social media) during the shopping journey, researchers may examine how omnichannel experiences influence consumer behavior. This could include studying cross-channel consistency, the impact of seamless integration between online and offline channels, and the role of mobile devices in facilitating omnichannel shopping experiences; (v) as Artificial Intelligence technologies continue to advance, researchers may explore how AI-driven personalization impacts consumer behavior in online retail. This could involve investigating the effectiveness of AI algorithms in predicting consumer preferences, the ethical implications of personalized marketing tactics, and the role of transparency and control in AI-powered recommendation systems. By focusing on these emerging areas, researchers can deepen our understanding of consumer behavior in online retail and provide insights that can inform business

strategies, policy-making, and the development of more user-centric digital experiences.

Declaration of Generative AI and AI-assisted Technologies in the Writing Process

During the preparation of this work, the authors used Grammarly to improve the readability and language of the manuscript. After using this tool, the authors reviewed and edited the content as needed and took full responsibility for the content of the publication.

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The authors equally contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

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The authors have no conflicts of interest to declare.

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APPENDIX

Table 1. *Search process within Scopus database*

| Process | Identification | Results |
|------------------------------------|-------------------------------------|---------|
| Search field used | Article title, abstract, keywords | |
| Query on Topic | "Consumer behav*" AND "retailing" | 1,459 |
| 1.º refine (search within results) | "online retailing" | 244 |
| 2.º refine (subject area) | Business, Management and Accounting | 182 |
| 3.º refine (years) | 2009 - 2023 | 86 |

Table 2. *Search process within Web of Science database*

| Process | Identification | Results |
|----------------------------------|--------------------------------------|---------|
| Database selected | Web of Science Core Collection | |
| Search field used | Topic (title, abstract and indexing) | |
| Query on Topic | "Consumer behav*" AND "retailing" | 5,198 |
| 1.º refine (search within topic) | "online retailing" | 154 |
| 2.º refine (research area) | Business Economics | 146 |
| 3.º refine (years) | 2009 - 2023 | 95 |

Table 3. *Most relevant sources*

| Sources | Articles |
|--|----------|
| International Journal of Retail and Distribution Management | 13 |
| Journal of Retailing and Consumer Services | 13 |
| International Review of Retail, Distribution and Consumer Research | 3 |
| Marketing Intelligence & Planning | 3 |
| Developments in Marketing Science: Proceedings of The Academy of Marketing Science | 2 |
| European Journal of Marketing | 2 |
| Frontiers of Business Research in China | 2 |
| Handbook of Research on Global Networking Post Covid-19 | 2 |
| Industrial Management & Data Systems | 2 |
| International Journal of Business and Globalisation | 2 |

Table 4. *Most globally cited documents*

| Paper | DOI | Total Citations |
|-------|----------------------------------|-----------------|
| [22] | 10.1016/j.jretconser.2019.05.025 | 284 |
| [23] | 10.1016/j.jretconser.2021.102570 | 170 |
| [24] | 10.1016/j.jbusres.2018.10.048 | 117 |
| [25] | 10.1016/j.jretconser.2019.101986 | 114 |
| [26] | 10.1111/jbl.12210 | 100 |
| [27] | 10.1016/j.jretconser.2020.102219 | 92 |
| [28] | 10.1108/IJPDLM-09-2017-0275 | 86 |
| [29] | 10.1016/j.jretconser.2020.102242 | 78 |
| [30] | 10.1108/MIP-02-2018-0058 | 68 |
| [31] | 10.1108/BFJ-05-2020-0449 | 63 |

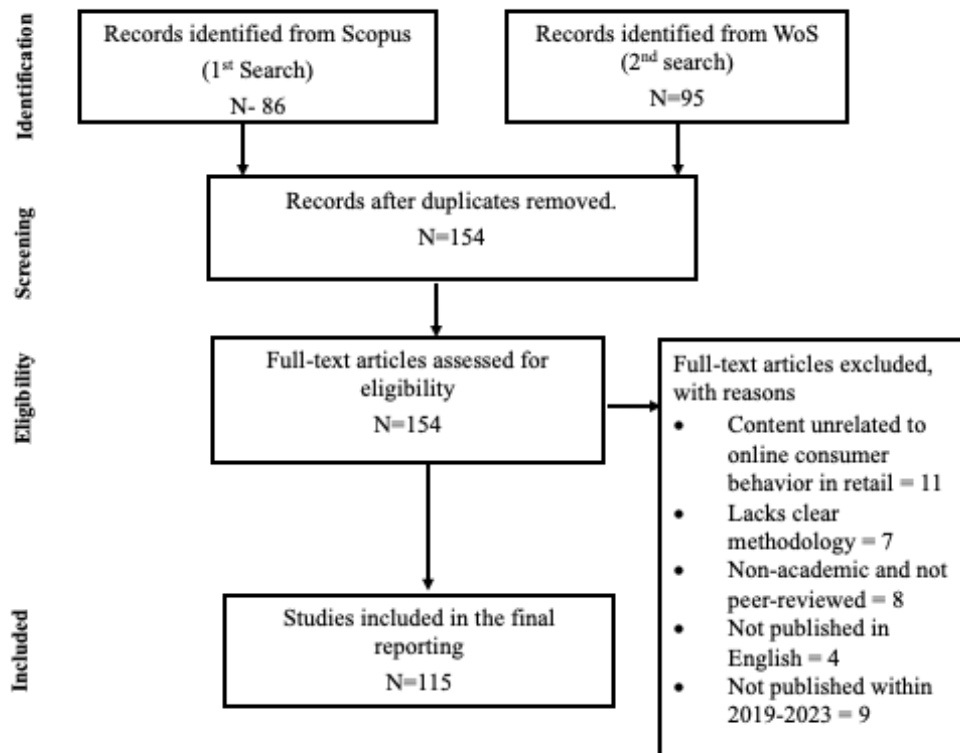


Fig. 1: PRISMA flow chart for screening records (adapted from [9])

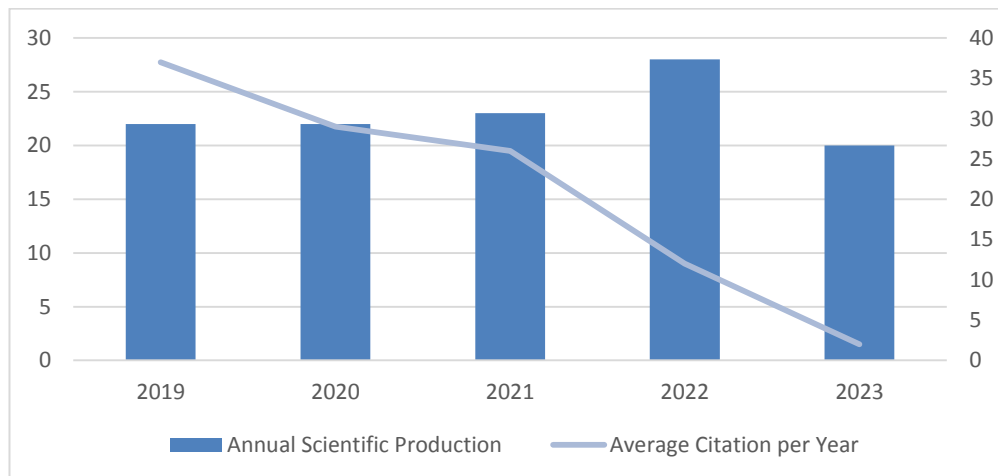
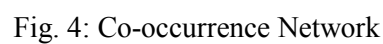
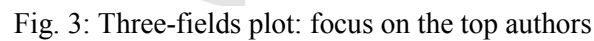


Fig. 2: Annual scientific production and average citations per year



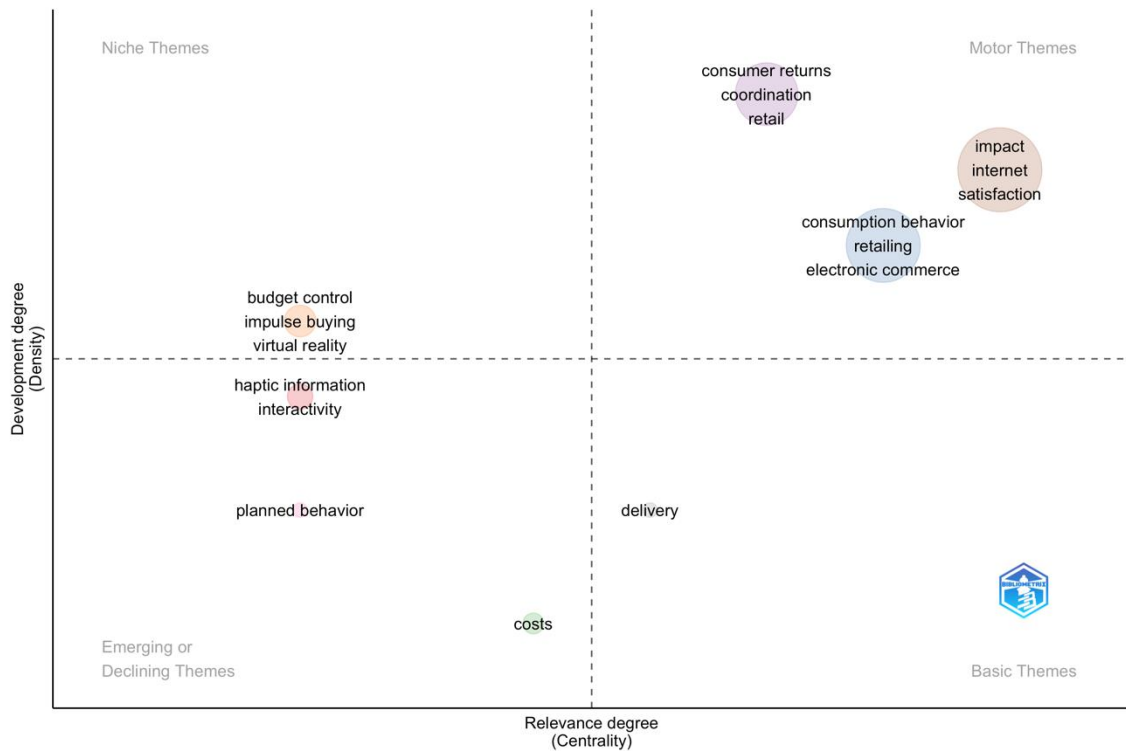


Fig. 5: Thematic map of the 'consumer behavior and online retail' research

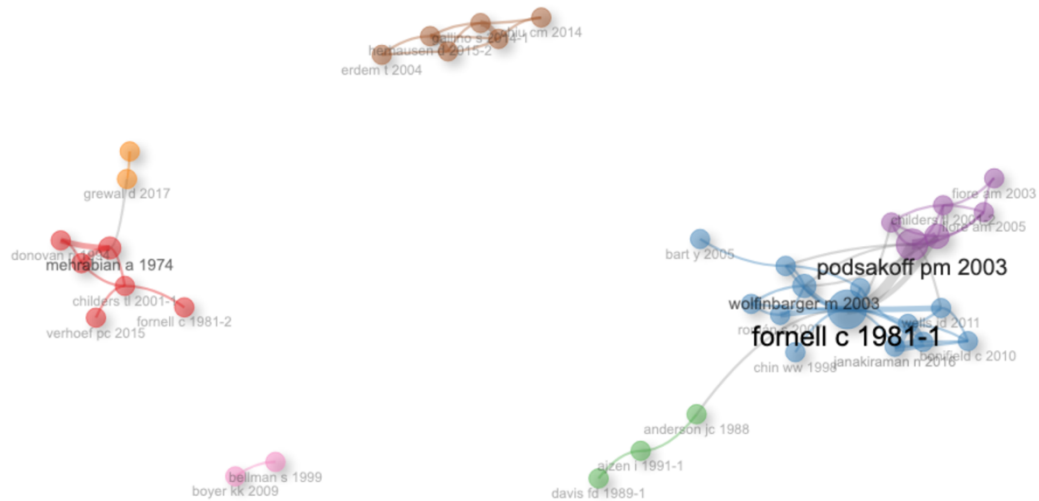


Fig. 6: Co-citation network

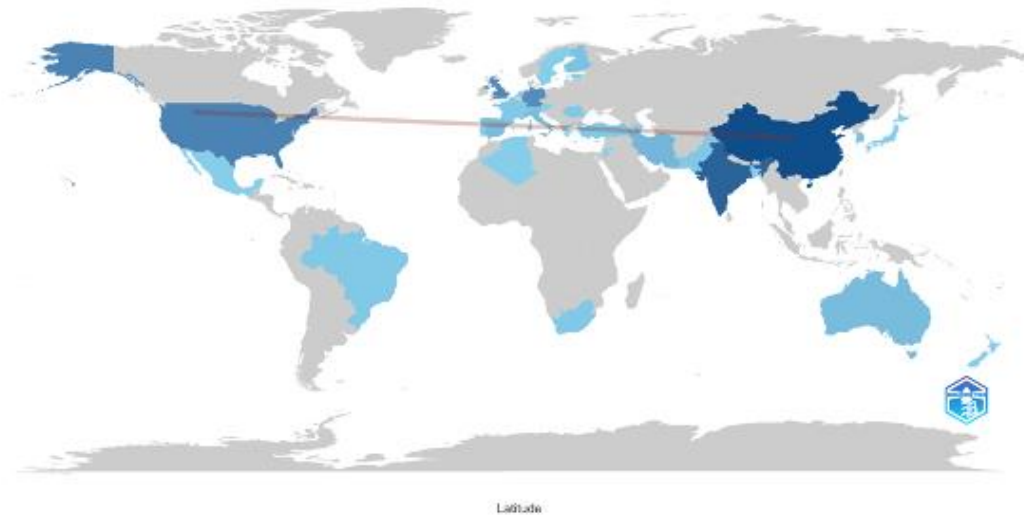


Fig. 7: Country collaboration map

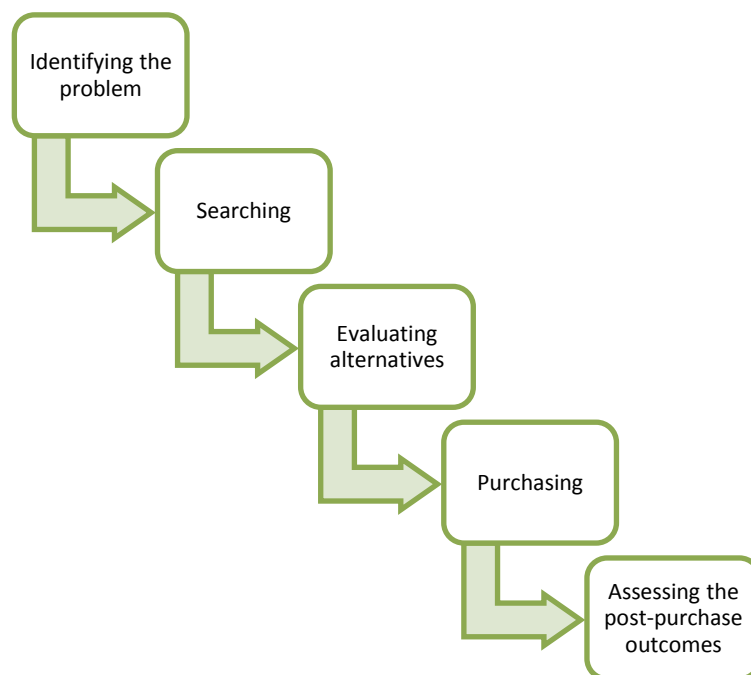


Fig. 8: Country collaboration map, [45]

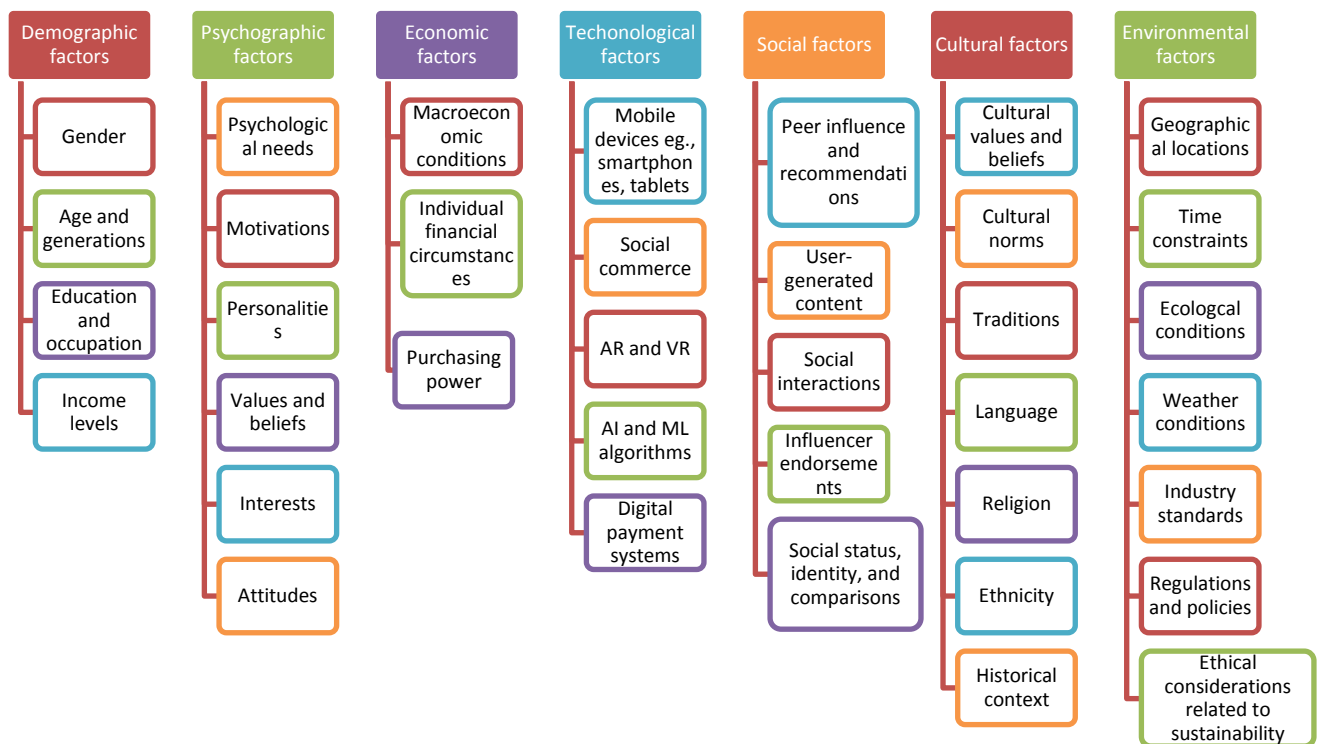


Fig. 9: Classification of factors influencing consumer behaviours in online retail